Microfinance and Entrepreneurship at the Base of the Pyramid

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Abstract: There continues to be substantial debate on whether and how providing inclusive access to finance through microcredit promotes entrepreneurship-led development at the base of the pyramid. We contribute to this literature by examining differences in household-level outcomes associated with microfinance loans given for different purposes, and identifying conditions under which the most impact is achieved. Defying common expectations, loans funding microenterprises do not exhibit greater impact than those funding traditional livelihood activities, and loans funding new microenterprises fare particularly poorly. But loan impact improves when multiple members of a borrower group seek livelihood loans together, and when the provided loans better match the individual financial needs of the borrowers. Our findings underscore the need to refine how microfinance is applied as a tool for development.

INTRODUCTION

Entrepreneurs are often celebrated as engines of innovation (Baumol, 1990), explorers and exploiters of new opportunities (Shane and Venkatraman, 2000; Venkatraman, 1997), and creators of promising ventures and organizations (Gartner, 1988). In examining how businesses can contribute to economic development in emerging economies (Bruton, Ketchen, and Ireland, 2013; George, McGahan, and Prabhu, 2012; George *et al.*, 2016), a prominent approach has therefore been to look for ways to support the entrepreneurial potential of the poor through market-based approaches (Bruton, Khavul, and Chavez, 2011; Zhao and Wry, 2016). Access to credit in the form of microfinance has emerged as a popular intervention for the so-called "base of the pyramid" (BOP)—a solution seemingly aligning the objectives of "doing well" and "doing good." The argument for prioritizing microfinance starts with an observation that, while access to capital is often a hurdle for most entrepreneurs, it can be particularly severe at the BOP for several reasons: lack of collateral, absence of credit history, high monitoring costs for lenders, lack of scale economies, and information asymmetry (Bruton *et al*., 2015; Khavul, 2010).

The reality of microfinance-driven entrepreneurship, however, is complex. Entrepreneurs at the BOP are likely to operate small, informal, and unsophisticated ventures that face significant obstacles beyond just the issue of access to capital (Bradley *et al*., 2012; de Mel, McKenzie, and Woodruff, 2013). As entrepreneurship scholars have emphasized (e.g., Bruton *et al*., 2013), three assumptions underlie the story of microfinance-led development. The first is that people at the BOP have the necessary ideas, skills, and social conditions to improve their livelihoods, and lack of capital is the primary bottleneck (Bradley *et al*., 2012). The second is that lending to microenterprises promises a bigger social impact than lending targeting traditional livelihood activities like agriculture and animal husbandry (Bruton *et al*., 2013). The third is that

employing a standardized model—involving fixed loan amounts and inflexible payment schedules—does not compromise the impact, despite not matching the specific needs of different customer segments. As Canales (2014: p. 1) highlights, balancing the pursuit of efficiency through standardization with being sufficiently responsive to client needs (through customized products and service) poses a complex dilemma that microfinance firms have to navigate.

In questioning the above assumptions to explore a more nuanced view of how microfinance might affect BOP livelihoods, we build upon prior research in entrepreneurship (e.g., Chliova, Brinckmann, and Rosenbusch, 2015) and economics (e.g., Banerjee, Karlan, and Zinman, 2015). Our contribution has two key dimensions. First, we go beyond studying the *average* impact of access to microcredit and consider the heterogeneous impact of loans given for different purposes—such as supporting traditional livelihoods, funding new microenterprises, or growing existing microenterprises. Investigating different kinds of loans holds the promise of extending our theoretical understanding of what entrepreneurship scholars have called "necessity entrepreneurship" (Alvarez and Barney, 2014; Amorós *et al*., 2019). Second, we move from the question of *whether* to *when* microcredit has a social impact in terms of supporting livelihoods. In doing so, we consider the role of two factors particularly relevant to the debate on how microfinance impacts the BOP (Morduch, 2013): peer effects that shape how microfinance works, and product standardization that affects the fit between loan offerings and client needs.

Our analysis uses detailed longitudinal data on customers of a Sri Lankan microfinance company providing loans for a variety of purposes: starting or expanding microenterprises, supporting traditional livelihoods, and non-livelihood purposes like housing and education. We also hand-collected data on the economic outcomes associated with these loans. Recognizing the

limitations of archival data, we deploy statistical techniques to mitigate econometric concerns related to selection and endogeneity to estimate the impact of loans given for different purposes.

Our baseline analysis shows that household-level economic outcomes associated with livelihood-related loans are, on average, only slightly better than for "non-livelihood" loans. Notably, within the livelihood loans, loans that fund microenterprises do not have any greater benefits than those funding traditional means of livelihood. If anything, the traditional-livelihood loans do slightly *better* than the microenterprise loans. As the drivers of average performance differ from those of breakthrough success (Levine and Rubinstein, 2013), we also examine the full statistical distribution of outcomes, and find that the result holds across the distribution. Further investigation reveals that loans intended to *start* new microenterprises show even weaker outcomes than for *growing* existing microenterprises. We also document two mechanisms related to loan impact. First, the impact of taking a livelihood (vs. non-livelihood) loan is greater when at least one peer in the client's lending group also takes a livelihood loan. Second, a closer match between the loan given (in terms of the approved loan amount) and the actual client needs (in terms of the requested loan amount in the original application) also improves the loan's impact.

On the whole, our study presents evidence that excessive focus on microfinance generating impact by prioritizing loans specifically for microenterprises over those for other (productive) activities might be unwarranted. When microfinance does fund microenterprises, it helps to be clear on the "theory of change" through which impact is realized. Convincing BOP clients with limited entrepreneurship aptitude or skills to take on loans just to *start* new microenterprises is particularly questionable as a strategy for development. Rather than disproportionately channeling microfinance towards loans just for microenterprises, it might be more useful to support social mechanisms and flexible products with the best impact potential.

MANAGEMENT LITERATURE RELATED TO MICROFINANCE

The topic of microfinance has drawn significant attention from strategy and entrepreneurship scholars (e.g., Battilana and Dorado, 2010; Bruton *et al*., 2011; Wright *et al*., 2016; Wry and Zhao, 2018). Given the interest in how firms can contribute to solving societal challenges (e.g., George *et al*., 2012), a growing body of research examines how institutional factors serve either as enablers or as constraints for microfinance organizations.

One stream of work emphasizes how the institutional environment influences micro-lending business models by affecting transaction costs, uncertainty, and resource flows (e.g., Ault and Spicer, 2014; Ault, 2016). This stream shows how commercial and public capital flows to microfinance organizations are shaped by institutional logics, such as financial logic, development logic, and religious diversity (Cobb, Wry, and Zhao, 2016; Zhao and Lounsbury, 2016). Another stream of research by management scholars has examined the organizational challenges that arise as the joint pursuit of competing goals exposes microfinance organizations to trade-offs between social impact and financial viability (Battilana and Dorado, 2010; Wry and Zhao, 2018). Table 1 summarizes the key findings and underlying mechanisms emphasized in prominent studies related to microfinance in entrepreneurship and strategy.[1]

[Insert Table 1 here]

Existing management studies have enriched our understanding of the evolution of microfinance organizations, their ability to attract capital, and their strategic choices in the context of the trade-offs they perceive and their final goals. However, relatively less attention has been paid to their social impact in terms of the outcomes experienced by the customers of microfinance organizations (which includes, but is not limited to, entrepreneurs at the BOP).

[1] See Sutter, Bruton, and Chen (2019) for a comprehensive review of research across multiple disciplines on the topic of entrepreneurship in low-income settings.

This gap in the literature—especially in terms of empirical examination of outcomes—exists not because of a lack of theoretical relevance or scholarly interest in issues related to entrepreneurship at the BOP. Instead, the fundamental barrier to examining social impact in the literature on BOP entrepreneurship has been the limited availability of fine-grained data.

As entrepreneurship scholars have noted (e.g., Sutter *et al*., 2019), quantitative studies at the household level have been rare despite the widespread prevalence of entrepreneurial activities in the context of BOP populations living at close to subsistence levels. Highlighting that examining heterogeneity in outcomes at the BOP household level is necessary to deepen our understanding of the impact of microfinance, Bruton *et al*., (2013: p. 685) emphasize: "*However, now that scholars have established a solid albeit nascent foundation of qualitative-based insights, it may be time for them to augment their investigations via the collection of large data sets and quantitative analysis. Undeniably, it is quite difficult to gather reliable quantitative data within poverty settings. Nonetheless, scholars need to embrace this challenge in order to expand the scope of entrepreneurship-related work that is concerned with poverty*."

One of our research goals is to investigate an issue that has not received much attention in research but is considered critical among microfinance practitioners: the purpose of a microloan. Figure 1 presents a hierarchy of such purposes. At the highest level, a contrast exists between "productive loans" and "non-productive loans." As the name indicates, "non-productive loans" are loans viewed as not effective for improving the long-term living standard of a household. Examples include loans for consumption in the form of buying a television for entertainment or paying for a wedding celebration in a household struggling even to make ends meet. Although critics view trying to dictate what the poor should or should not spend borrowed money on as

condescending, microfinance organizations generally refrain from extending loans that go towards such "non-productive" purposes.

[Insert Figure 1 here]

While most microfinance institutions restrict themselves to loans that they see as "productive," there is significant variation in loan purpose within this category. As Figure 1 illustrates, a common classification of "productive loans" is whether they are "livelihood loans" or "non-livelihood loans." The former fund activities directly related to generating income (e.g., providing working capital for purchasing inventory for a shop or fertilizers for farming), while the latter fund activities that do not immediately relate to income generation but may still enhance productivity—such as an investment in the household's physical or human capital (e.g., by helping build an extra room in the house or paying for a child's education).

As Figure 1 shows, "livelihood loans" are categorized into "traditional livelihood loans" vs. "microenterprise loans." The former fund traditional means of livelihood that rural populations in emerging markets have relied on for generations, such as agriculture, animal husbandry, or fisheries. The latter fund small-scale (typically non-farm) businesses, such as small tailoring shops or general stores.[2] "Microenterprise loans" can be further divided into loans meant for "starting new microenterprises" (e.g., providing funding for setting up a new shop) versus "expanding existing microenterprises" (e.g., providing funding to expand a shop, such as the purchase of more equipment or a significant expansion of inventory.)

Do these different kinds of microfinance loans heterogeneously affect the outcomes of people trying to sustain livelihoods at the BOP? Under what conditions are the impact of such

[2] Alvarez and Barney (2014) document a similar classification of loans given by Grameen Bank in 2008. Mapping these to Figure 1 would entail classifying loans for "Livestock purchasing, raising, and fattening" and "Rice paddy cultivating, husking and trading" as "traditional livelihood loans", and loans for "Grocery shop" and likely a majority under their "Other" category as "microenterprise loans".

loans on BOP entrepreneurs and non-entrepreneurs greater or smaller? Answering these questions can move forward the scholarly conversation on microfinance from average outcomes to understanding the variation between outcomes across different settings, especially how different kinds of microfinance-funded activities might ultimately contribute to poor households.

Beyond the specific context of microfinance, answering the above questions can also contribute towards a broader understanding of "necessity entrepreneurship"—generally defined as entrepreneurial activity arising out of need due to a lack of employment alternatives (Dencker *et al*., 2021). Research by entrepreneurship scholars (e.g., Alvarez and Barney, 2014) has begun to shed light on the phenomenon of necessity entrepreneurship by studying the *antecedents* of the pursuit of activities such as the creation of microenterprises as diverse as food retail, goat-milking, hair salons, and shoe repair. Yet, as Dencker *et al*., (2021: p. 63) note, "*research on outcomes of necessity entrepreneurship in impoverished settings remains rare*," and the literature continues to emphasize the *antecedents* of necessity entrepreneurship more than its *outcomes*.

Although there is by now a growing body of work relating to the variety of microfinance in varying institutional contexts, more research is needed to better understand the heterogeneous impact of microfinance loans at the household level *within* an institutional context (Bruton, Filatotchev, Si, and Wright, 2013; Chliova *et al*., 2015). As Chliova *et al*., (2015: p. 479) note in their recent meta-analysis: "*it is scarcely reported whether loans are provided to new or established ventures, a difference that might, however, affect the outcomes resulting from these loans.*" As such, our research complements earlier work and can provide insights for better selection, design, and alignment of micro-lending products and initiatives to fit with BOP needs. To this end, the research context of this study offers an opportunity to deepen our understanding

of (i) how different kinds of microfinance loans may lead to varying social impact in the context of BOP households, and (ii) what other factors might influence the extent of this impact.

RESEARCH CONTEXT: MICROFINANCE IN SRI LANKA

Our research site was a firm that we refer to as Sri Lankan Microfinance (SLM), which has a typical "group lending" model. Its target population is 62% of the Sri Lankan households living on between LKR 100 (just under $1) and LKR 300 (just under $3) per capita, i.e., the relatively poor but not the poorest segment. In an interview with us, a senior manager elaborated:

> "*We are targeting not the very base of the pyramid but people who are close to the base… I've seen clients start a business on their own and two years later even employ four other people. For me, that is still poverty reduction as—rather than giving loans to the poorest people—we help create opportunities for those who are still poor but have the skill to develop their businesses and move up*."

SLM filled a market gap between mainstream banks (who focused on large loans for richer clients with collateral and credit histories) and non-profit players (who could operate only at a limited scale). SLM's clients would otherwise have to rely on moneylenders, who often charged exorbitant interest rates and exploited the poor in other ways. One manager explained:

> *"People borrowing from NGOs consider it a one shot. It's viewed like a grant, and thorough evaluations are not done prior to giving a loan. For the loan officers, making recoveries is not a big part of their job: it's just giving the loans. The NGOs are therefore unable to scale up or offer larger loans… The money-lender is often the local shop owner. The farmers end up buying seeds, chemicals, and manure from him. He gives this on credit at a much higher price than the market. At the time that the farmers have to repay, they sell to the same shop owner at a lower price."*

A first-time SLM customer could borrow up to LKR 50,000 (just under $500), to be repaid in 12 monthly installments of LKR 4,936 each (just under $50). The amount went up over loan cycles for borrowers with a good repayment record. By the fourth loan cycle, customers could obtain up to LKR 125,000, repayable in 18 monthly installments. SLM's interest rate—about 30% per year as of 2013—was significantly below what moneylenders charged. In Sri Lanka, institutions without a formal license were not allowed to take deposits, so they depended on

costly loans from banks. SLM overcame this hurdle by tapping into foreign funds willing to support responsible financial inclusion institutions in emerging markets. SLM's CEO explained:

> *"In group lending, there is much room for exploitation of vulnerable groups. Foreign investors want disclosure about this, especially after what happened in India when there was a collapse of microfinance institutions… Not many others can tap into foreign funds like us. We have a transparent double bottom-line model, something that scales up and is efficient, and does business in the last mile."*

As SLM's borrowers typically had limited education and financial literacy, significant local marketing was required in terms of customer education and hand-holding. Much energy also went into building relationships with key stakeholders in the local communities. SLM's social impact goals included promoting financial inclusion, penetrating rural areas, supporting microenterprises, and helping empowerment of women. The CEO further explained:

> *"We do not say 'Here is a bit of money that needs to go into social good'. The social agenda is inbuilt in our business. It is in the way we recruit, the way we go into rural areas, the way we work with farmers... We have had four good years of financial success at the same time that we have served poor customers."*

SLM's customers went to a formal branch only for loan disbursement. Other interactions, including applications and repayments, happened in the field. This localized model involved community meetings to recruit borrowers (almost always women) and help them self-organize into groups of three to guarantee one another's loans. Subsequently, 10 or 11 of these "joint liability groups" (JLGs) met every month at their community's designated time and location for a "center meeting" for payment collections. Less than 1% of the cases had any serious repayment issues. SLM attributed this to their credit appraisal process, which included careful assessment of a borrower's assets, liabilities, and income. A borrower's repayment capacity was ensured by capping loan amounts so that her monthly installment never exceeded 40% of her net income.

SLM's processes were particularly thorough in evaluating and monitoring the purpose for which a loan was taken, allowing only loans it deemed productive. A member of SLM's Board gave an example: "*If a farmer wants to buy a television, you should never lend for that because*

there is no income supporting that instrument. As long as you provide him goods and services where he can make money, he will repay you." A senior manager illustrated the case of a paddy farmer: "*Farmers need working capital… they need manure, they need chemicals, they need the seeds… they borrow from us… once they have the right price [for paddy], they will sell and get a good price.*" Given the importance of understanding the local context and economy in judging whether a person was creditworthy, SLM hired loan officers directly from local communities. The manager mentioned above elaborated: "*If we want to get a microfinance officer for an agricultural area, what we are focused on is whether he knows agriculture… what is the correct type of paddy… what is the income that a typical farmer can get.*"

Consistent with our characterization of "productive loans" in Figure 1, the first category of loans that SLM allowed involved livelihood activities related to either microenterprise (e.g., starting or growing a shop) or traditional means of livelihood (e.g., agriculture or fisheries). The second category of allowed loans was for non-livelihood activities, such as house improvement or education. SLM did not allow loans for "non-productive" purposes, like buying a television or hosting a wedding party.

IMPACT OF MICROFINANCE LOANS

Livelihood vs. non-livelihood loans

The classic microfinance model provides financial services to low-income individuals excluded from mainstream financial services. The central challenge in lending to this population is the problem of risk assessment and management due to the lack of adequate collateral or credit history (Bruton *et al*., 2015). To overcome this challenge, microfinance typically relies on two features: (a) issuing small, collateral-free loans to groups of underserved people under a joint liability model, and (b) prioritizing lending for livelihood purposes (e.g., for starting a retail or a

tailoring shop) over non-livelihood purposes (e.g., consumption). While the first feature seeks to alleviate problems of moral hazard and adverse selection by reaping the benefits of social capital and enforcing mutual accountability among group members to reduce the likelihood of default, the second feature seeks to reduce the risk of lending without collateral and conventional credit risk assessment by ensuring that the borrowed funds are invested into income-generating activities that help the borrower make loan repayment (e.g., Bruton *et al*., 2015; Khavul, 2010).

The classic narrative in microfinance focuses on how microloans generate social impact by supporting livelihoods. The distinction between livelihood and non-livelihood loans is, therefore, usually a critical feature in designing microfinance models (Armendáriz and Morduch, 2010; Banerjee, 2013). As Bruton *et al*., (2015) note, it is usually taken as granted that microcredit is about facilitating livelihoods—typically by funding BOP microenterprises—with access to finance as the crucial bottleneck (Chilova *et al*., 2015). In reality, microfinance extends beyond purely entrepreneurial finance to household finance with loans for housing, education, and occasionally even consumption (Banerjee *et al*., 2015). Given this reality, the relative impact of loans taken for different livelihood or non-livelihood purposes warrants investigation.

If microcredit works as is typically assumed, it should follow almost by definition that livelihood loans should be associated with better economic outcomes for BOP households: access to credit should support livelihoods by increasing incomes and helping people break out of the vicious cycle of low income, low savings, and low investment (Counts, 2008; Dowla and Barua, 2006; Mair, Marti, and Ventresca, 2012; Pitt and Khandker, 1998; Yunus, 2007). Accordingly, our baseline expectation is that household-level economic outcomes will be superior for loans dispensed for livelihood purposes (such as microenterprise or traditional livelihoods) compared to loans not directly targeted at livelihoods (such as housing loans):

Hypothesis H1 (Baseline Hypothesis): Loans given for funding livelihood activities on average exhibit better household-level economic outcomes than otherwise comparable loans given for funding non-livelihood activities.

Different kinds of livelihood loans

The dominant narrative in microfinance is focused on funding microenterprises that transform the poor into small-scale entrepreneurs and generate sufficient income to move them out of poverty (Roodman, 2011). At the same time, livelihood-supporting microfinance includes not just loans funding microenterprise (e.g., opening or growing a small retail shop) but also loans that support more traditional means of livelihood (e.g., farming, animal husbandry, or fisheries).

While there is evidence that microenterprise may, in some settings, earn sufficient returns to justify the kind of interest rates that prevail in microcredit (de Mel *et al*., 2010; Dupas and Robinson, 2013), the overall impact of loans targeting microenterprise-led growth remains a topic of debate (Armendáriz and Morduch, 2010; Roodman, 2011). Critics have argued that the loan amounts are generally too small, and the time horizons are too short to resolve the critical issue of under-investment (Field *et al*., 2013). Thus, access to credit may not help if a borrower does not perceive a sufficient increase in the amount she needs for a meaningful long-term investment (Dew *et al.*, 2009). More generally, new enterprises are prone to make mistakes, and a very large fraction fail in the early phases of the life cycle (Vivarelli, 2013). There is little reason to believe that microcredit-funded enterprises would be an exception to this.

Research on entrepreneurship has also emphasized that entrepreneurial ability is not evenly distributed in any given population (Kirzner, 1978). There is little reason to think that the BOP is an exception. Successful entrepreneurship requires a real market gap (Rumelt, 1987), opportunity recognition (Shane, 2000), access to rare, valuable, and non-imitable resources

(Barney, 2001), and the ability to organize these resources into a better customer value proposition than current offerings (Alvarez and Busenitz, 2001). However, entrepreneurs at the BOP tend to engage in inefficient and undifferentiated activities (such as shops selling the same product) that are easily replicable and often lack the knowledge and sophistication necessary to create unique value (Alvarez and Barney, 2014).

Our argument is not meant to suggest that there aren't individuals in the BOP population who hold great promise as potential entrepreneurs. Recent research by Banerjee *et al*. (2019) points towards the importance of identifying exactly such "gung-ho entrepreneurs" for microfinance to support BOP entrepreneurship effectively. However, most microfinance organizations do not follow such a targeted approach and instead try to reach out to a much broader BOP population in the hope of turning them into entrepreneurs (Morduch, 2013).[3]

Microcredit is also hardly a source of extensive start-up capital or even a valuable and non-imitable resource. Loan amounts are small, and installments need to be paid frequently and immediately (often starting as early as a week of getting the loan), requiring the enterprise to yield a quick and steady cash flow. The poor also typically lack access to social structures and mentors vital for entrepreneurship (Aldrich and Cliff, 2003; Eesley and Wang, 2017; Hernández-Carrión, Camarero-Izquierdo, and Gutierrez-Cillan, 2017; Kotha and George, 2012). The "templates" for building an enterprise are either not available at all or are not so effective in the absence of supporting social networks for knowledge transfer (Sutter, Kistruck, and Morris, 2014). A combination of these factors means that the poor tend to bring under-developed

[3] Morduch (2013) uses recent evidence to explain why microfinance loans may be popular even if they do not always boost entrepreneurial outcomes: "The evidence suggests that better financial access does give families improved ways to cope with poverty, but – counter to the original microfinance narrative – seldom offers the means to escape it… That's not necessarily a bad thing (and could be a very good thing). But it does suggest a gap between the way we've looked at microfinance and what it actually is… The early narrative centered on women, group lending, and business loans – which was exactly what foreign aid agencies wanted to hear."

businesses to market (Doering, 2016), with the constraints often being particularly salient in contexts where the potential entrepreneurs are women (Kinger Hans and Ma, 2019; Tonoyan, Strohmeyer, and Jennings, 2020). Access to credit might thus not suffice for microfinance loans to have a large and positive impact on borrowers seeking to be entrepreneurs (Angelucci, Karlan, and Zinman, 2015; Banerjee *et al*., 2015; de Mel, McKenzie, and Woodruff, 2014).

In contrast to such ventures, people engaged in traditional activities (such as farming, fisheries or animal husbandry) are likely to have prior knowledge of markets and customer needs, are embedded in communities that engage in similar activities, and are better placed to adopt new technologies and inputs (e.g., pest-resistant seeds) that increase productivity (Shane, 2000). Appropriate social structures and mentors are more likely to be available, and the borrowers would also have easier access to templates that translate these livelihood activities into cash flows. People obtaining credit for traditional activities are likely to understand them well and hence have more predictable cash flows that facilitate servicing of loans and better planning of finances; access to credit would therefore complement pre-existing knowledge, skills, and capabilities. As relevant tacit knowledge is more likely to be locally available, at least in the community, if not within the household, challenges associated with identifying market opportunities and formulating relevant value propositions are less likely to be so stark.

To summarize, our arguments challenge the view of microenterprise-focused loans as being better than loans targeting traditional means of livelihood, hence questioning the notion that loans for microenterprises would necessarily have a greater impact on average:

Hypothesis H2: Loans for traditional livelihoods, on average, yield at least as good outcomes as loans for microenterprises.

Carrying the above arguments further, we expect that the need for alternate cash flow to service the loan immediately, combined with greater difficulty in accessing appropriate templates, complementary skills, and social support, would be more constraining for BOP individuals who have taken a loan to *start* rather than *grow* a microenterprise. Therefore, in our empirical analysis comparing the outcomes of loans funding microenterprises versus traditional livelihood activities, we further disaggregate microenterprise loans into two groups: loans that fund *starting* new microenterprises and loans that fund *growing* existing microenterprises. The hypotheses for these two subsamples of microenterprise loans remain analogous to those for the combined sample as stated above (with an expectation that the impact associated with livelihood loans would look particularly favorable when compared with loans for starting new microenterprises than with loans for growing existing microenterprises):

Hypothesis H3a: Loans for traditional livelihoods, on average, yield at least as good outcomes as loans for starting microenterprises.

Hypothesis H3b: Loans for traditional livelihoods, on average, yield at least as good outcomes as loans for growing microenterprises.

The moderating role of peer effects

Next, we explore the possibility that peer effects play an important role in shaping the impact of microfinance loans. Sanders and Nee (1996) highlight three mechanisms by which peer effects affect success in self-employment. First, peers provide instrumental support, both as financial help and non-financial assistance (such as free labor). Second, peers provide business-related information, such as sharing good business practices and transferring knowledge about markets, competition, and suppliers (Kuhn and Galloway, 2015). Third, peers are sources of behavior

emulation, and provide a psychological impetus for higher levels of effort and motivation to attain goals (Field, Jayachandran, Pande, and Rigol, 2016; Hanlon and Saunders, 2007).

Prior entrepreneurship literature has emphasized that to develop business opportunities, entrepreneurs require support, feedback, and other resources from various groups of external stakeholders, e.g., customers, financiers, and other key stakeholders (e.g., Dimov, 2011; Snihur, Reiche, and Quintane, 2017). Further, key entrepreneurial activities like opportunity recognition and resource mobilization can be facilitated by "running in packs" (Van de Ven, Sapienza, and Villanueva, 2007: p. 365). As Kuhn and Galloway (2013) note: "*While large firms rely on teams of experts and skilled managers, small business performance is largely dependent on decisions made by the owner. Given the many challenges facing small businesses, useful external advice is a critical resource that should increase the likelihood of survival and success."*

Several studies have shown that information sharing and mentoring by more experienced peers drive the adoption of effective business practices and improve business outcomes such as profits, business survival, and formalization among microentrepreneurs (Dalton *et al*., 2019; Sutter *et al*., 2014). These effects are stronger for individuals with limited business experience (Brooks *et al*., 2017; Lafortune *et al*., 2018), and limited exposure to entrepreneurship (Nanda and Sorensen, 2010). Borrowers at the BOP often lack relevant experience, access to technology, and knowledge to manage their business effectively (Khavul, 2010). Thus peers can both be a valuable source of information about the market ecosystems and serve as role models in carrying out commercial activities (Jayachandran, 2020; Quinn and Woodruff, 2019). In contrast, while borrowers taking non-livelihood loans might also benefit from being in a group to some extent, they do not require as much resource sharing, customized information, or intensive support.

Microfinance often employs a "group lending" model, whereby borrowers meet frequently (weekly, bi-weekly, or at least monthly), act as co-guarantors, and share information (Khanna, 2018). Close interaction with peers is thus built-in by design, facilitating sharing of information and experiences relevant for livelihood-related activities. As Feigenberg *et al*. (2013) document, peers in the same group form stronger ties with each other and maintain a high degree of interaction, support, and risk-sharing even in their everyday life outside the formal group meetings. Such mutual support can be particularly impactful when taking livelihood loans since the cash flows from business activities are inherently more uncertain as they are subject to unanticipated natural and economic shocks. A social network of peers can also help establish mutual accountability among group members, thereby ensuring that the loans are invested in livelihood activities rather than being deployed in ineffective ways (Attanasio *et al*., 2015).

In summary, given the well-documented importance of peer effects for entrepreneurial success in general (see Slotte–Kock and Coviello, 2010 for a review) and strong arguments especially for why these should facilitate livelihood activities at the BOP, we suggest that the positive impact of livelihood loans is likely to be amplified when a borrower is not the only member of her group taking a livelihood loan. Stated formally:

Hypothesis H4: The difference in outcomes for livelihood vs. non-livelihood loans is greater when at least one peer in the borrower's group also takes a livelihood loan than when none of the peers in the borrower's group take a livelihood loan.

Fully versus partially funded loans

In the classic microfinance model, loan products tend to be highly standardized—for example, the loan amount is fixed (within the same credit cycle)—irrespective of the differing needs of specific customers. Rather than reflecting the client's ability to use and repay, this meets the

microfinance organization's need to manage risk and attain efficiencies in extending credit to a customer segment that is perceived as too fragmented and risky to serve through a viable business model. However, failing to adapt financial products to clients' needs may come at a cost (Collins *et al*., 2009). In sacrificing customer-centricity for efficiency, microfinance may fail to satisfy the needs of different segments of customers within the BOP.

Evidence of the complex financial needs of individuals at the BOP suggests that the benefits from microfinance are typically realized by helping the poor manage tight cashflow and household budgets (Morduch, 2013; Karlan and Zinman, 2011). When a requested loan is only partially funded because it exceeds the standard microloan amount, borrowers have less flexibility to manage their finances. They often have to seek an additional line of credit from other microfinance organizations or pay exorbitant interest rates to local moneylenders to meet the shortfall (Collins *et al*., 2009). Moreover, borrowers who are only partially funded are more likely to be victims of a "scarcity" mindset (Shah, Mullainathan, and Shafir, 2012), and end up allocating attention to short-term issues at the expense of the longer-term viability of the activity they seek to fund. The combination of higher borrowing costs, search costs, and loss of focus will diminish the impact of the loan.

The financing needs of the poor—irrespective of whether involving livelihood or non-livelihood loans—are likely to involve minimum threshold requirements. For example, for a borrower seeking a microloan to make home improvements (a prominent kind of non-livelihood loan), a minimum amount may be needed to get construction started. Similarly, for livelihood loans, a local neighborhood shop may have to stock a minimum number of products to be viable, or a farmer might need a minimum amount to purchase cattle. For all such borrowers, a mismatch between the amount requested and received can block their escape from the so-called

"poverty trap" (Banerjee and Duflo, 2011). We, therefore, propose that irrespective of the loan purpose (livelihood or non-livelihood), the following holds:

Hypothesis H5: Loans where the borrower's requested loan amount is fully funded on average exhibit better household-level economic outcomes than otherwise comparable loans where the borrower's requested loan amount is only partially funded.

DATA CONSTRUCTION AND MATCHING PROCEDURE

Dataset construction

A challenge in researching BOP-related phenomena is the difficulty of getting appropriate data (Khavul, 2010; Kriauciunas, Parmigiani, and Rivera-Santos, 2011). Fortunately, through SLM, we had access to a large sample of client records created during the credit appraisal process and related household-level income and expenditure data. These records were originally in paper form in the regional languages (Sinhala and Tamil), so we coded these into an electronic database. The task was carried out by research assistants in Sri Lanka, with records coded twice by separate individuals to ensure high reliability of data. Several hundred person-days of work went into this coding, and multiple supervisors and a project manager were involved in the coordination and quality checks. We were also constantly in touch with the field teams during this exercise and made multiple trips to Sri Lanka to help plan and supervise these efforts.

The team coded 66,831 customer credit appraisals from May 2009 to August 2014, covering all records since formation for five of the branches of SLM. The exercise led to 55,016 usable records, as only records with valid client identifier and appraisal date were kept.[4] Given that the duration of loans was 12-18 months, we dropped appraisals from the last 12 months from

[4] An invalid client identifier or date in our data typically arises from a case of missing information in the original paper form itself. This happens because sales officers process files within a day or two of getting a form and sometimes do not ensure this information is fully on the form as they also record it elsewhere.

the regression sample as we would not observe the outcomes associated with most of these. The final dataset for analysis, therefore, has 40,574 loans, as summarized in Table 2a.[5]

[Insert Table 2a here]

A key piece of information is the purpose for which each loan is taken. SLM verifies this information diligently to ensure that a potential client has a genuine case for getting a loan. For example, if a client claims that the loan is for starting a new microenterprise, a loan officer evaluates her business plan. In the case of loans for expanding existing microenterprises or upgrading housing, the officer visits the client's premises for verification. In all cases, the officer also monitors progress towards the intended purpose, and the officer's supervisors as well as headquarters staff, often perform surprise audits.[6] This way, consumption loans—such as those used for buying a television or organizing a wedding—are ruled out, even though SLM does allow "productive" loans not related directly to livelihoods (primarily for housing).

Table 2b shows that 24,657 (60.8%) of the 40,574 loans our sample were livelihood loans and 15,917 (39.2%) were non-livelihood loans. Of the 24,657 livelihood loans, 16,202 were microenterprise loans (4,506 meant to "start new microenterprise" and 11,696 to "expand existing microenterprise"), and 8,455 were traditional livelihood loans (5,026 funded activities related to "agriculture", 2,760 to "animal husbandry" and 669 to "fisheries"). Of the 15,917 non-livelihood loans, 14,006 funded activities related to "house construction or renovation", 962 to "settle liability" and 949 to "other non-livelihood purpose."

[5] We still employed information from the appraisals from the last 12 months for constructing outcome variables for the previous loans for the same respective customers. The actual regressions rely not on all 40,574 observations but the subset for which the same client has a subsequent observation necessary to infer the value of the corresponding outcome variable. Robustness checks presented later ensure that our findings are not driven by this selection effect.

[6] We also performed additional checks to ensure that the loan purpose information is reliable. SLM had conducted a client survey in 2013 for reasons unrelated to the present project. This survey overlapped with our client sample and also included a question on whether or not a client had a business. We were reassured to find a high correlation between a client responding 'yes' to that question and her loan purpose being microenterprise-related.

[Insert Table 2b here]

Matching procedure

Table 3a reports key summary statistics for livelihood versus non-livelihood loans.[7] The average household annual income was LKR 381,735 for livelihood loans but LKR 348,864 for non-livelihood loans. Livelihood loans also tend to be given in earlier loan cycles, are of lower loan duration and amounts, involve clients with pre-existing external loans, and are more likely to come from earlier calendar years in our data. This suggests that any analysis needs to take such systematic differences across the two types of loans into account.[8] Our regression analyses do this by including appropriate parametric and non-parametric controls (Angrist and Pischke, 2009). Our preferred approach is to employ a sample based on stringent matching, as it helps better account for observables as well as unobservables correlated with these, reducing biases that might arise due to endogeneity of loan purpose (Altonji, Elder, and Taber, 2005; Dehejia and Wahba, 1999). It also reduces sensitivity to specific functional form assumptions or outliers (Angrist and Pischke, 2009; Heckman, Ichimura, and Todd, 1997; Imbens, 2004).

[Insert Table 3a here]

We construct our matched sample of livelihood and non-livelihood loans using coarsened exact matching, or CEM (Iacus, King, and Porro, 2011, 2012).[9] We require an exact match on the specific centers where officers carry out the monthly meetings—thus accounting for localized effects.[10] Timing-wise, we require an exact match not just on the specific quarter but also on the duration (in months) for the loan (*Loan duration*). We employ ten bins to carry out a coarsened

[7] All income data we use are at the household level and in real terms, adjusted for inflation based on Sri Lanka's monthly consumer price index (taking Jan 2010 as the base). As of January 2010, 1 U.S. Dollar ($) was equal to about 114 Sri Lanka Rupees (LKR) in absolute terms and about half as much on a purchasing power parity basis.
[8] Although not shown here to conserve space, different branches and even different loan officers seem to also systematically differ in the prevalence of different loan purposes.
[9] For an illustrative application of CEM, see Singh and Agrawal (2011).
[10] There are on average 152 centers per branch, each typically covering just 2-3 villages in close proximity.

matching for the loan amount (*Loan amount*) and the borrower's pre-loan income (*Client's income*). To ensure that inter-temporal dynamics do not drive our findings, we also match exactly on the loan cycle number (*Client's loan cycle*) as well as the entire history of the loan purpose for prior loan cycles for each client. To capture a client's access to credit, we also match on whether a given client has at least one external loan (*Client has external loans*).[11]

We rely on many-to-many matching to fully utilize available data, and use CEM-generated weights to infer "treatment on the treated" estimates in line with established matching-based regression methods (Imbens, 2004; Iacus *et al*., 2011, 2012). The summary statistics for this final (weighted) matched sample are shown in Table 3b. As expected, the covariate balance is significantly better than that for our full sample (Table 3a). However, this comes at the expense of a subset of our original observations being left unmatched and hence excluded.

[Insert Table 3b here]

VARIABLES AND REGRESSION APPROACH

Our primary dependent variable is based on changes in inflation-adjusted household income for the clients. We define *Income change* as the change in household income (in real terms) between two subsequent credit appraisals, adjusted by the time elapsed between the two.[12] In other words, *Income change* represents income change on an annualized basis.[13]

To test hypothesis H1, we code a dummy variable *Livelihood loan* to take the value 1 for livelihood loans and 0 for non-livelihood loans. We further distinguish whether a livelihood loan represents a *Microenterprise loan* or a *Traditional livelihood loan*, to test hypothesis H2 that

[11] To ensure that all variables are fully accounted for and that the post-matching regression estimates are also informationally efficient, even our regressions using the matched sample employ the same variables as controls.
[12] To ensure robustness, our online appendix (Table A1) reports analyses for two other outcomes – *Expenditure change* (the annualized change in household expenditure as a basis for examining rising standards of living) and *Food share change* (the change in the fraction of budget spent on food, a fall in which is a sign of rising standards).
[13] We annualize the data since not every loan is renewed immediately upon repayment of the previous loan, and also as the duration of the loans available to clients has varied a bit over the years and also changes over loan cycles.

traditional livelihood loans have at least as much impact as microenterprise loans. We decompose *Microenterprise loan* even further into whether it is meant to *Start new enterprise* or *Expand existing microenterprise* in order to test hypotheses H3a and H3b. We analyze not just average economic outcomes but also the overall statistical distribution of these outcomes since the drivers of average success in entrepreneurship can be different from the drivers of particularly good outcomes (Levine and Rubinstein, 2013).

Hypotheses 4 and 5 examine the conditions under which microcredit has the most impact by respectively employing the variables *Peer livelihood loan* (an indicator variable for whether at least one other person in a borrower's microfinance group concurrently took a livelihood loan) and *Partially funded loan* (an indicator variable for whether a borrower's microfinance loan was approved for an amount less than that requested in the original loan application).

Our regression models include branch-year indicators to capture time-invariant as well as time-varying heterogeneity and unobserved shocks at the regional level. For example, if droughts or floods adversely affect a region in a given year, these will be subsumed in these branch-year fixed effects. These also correct for different evolution across branches in firm-specific factors (e.g., hiring and socialization policies) as well as any region-specific social structures that may shape local norms, trust, and relationships (Battilana and Dorado, 2010; Iyer and Schoar, 2010).

The variables used for matching are also used as controls. Our first control variable is *Client's income* at the time of appraisal, since clients with lower incomes may be more prone to larger jumps. Second, we control for the *Client's loan cycle* to capture differences between first-time clients and renewing clients.[14] For example, new clients might be more tempted to state the

[14] As a further robustness check for comparability across loans, we repeat our analyses using a sub-sample only of loans taken by clients in their first loan cycle, while accounting for any remaining concerns around sample selection by employing a Heckman correction approach. These results are reported in the online appendix (Table A2).

first loan purpose as a livelihood loan, as renewals tend to be almost automatic with a good history. We also control for *Loan duration* and (logged) *Loan amount*, since these can otherwise drive the findings through unanticipated effects. We also include the indicator variable *Client has external loans* to capture whether certain clients are more credit-constrained than others.

We include loan officer fixed-effects to account for any differences in how they might implement credit appraisal and other policies (Canales and Greenberg, 2016; Doering, 2016, 2018; Drexler and Schoar, 2014) as well as differences in propensity to give different kinds of loans based on personal characteristics like skill, risk aversion, or overconfidence (Cole, Kanz, and Klapper, 2016). All models use robust standard errors, clustered on the client.

RESULTS

Livelihood vs. non-livelihood loans (H1)

Column (1) in Table 4 shows the results of our baseline analysis. The positive and statistically significant coefficient on *Livelihood loan* indicates a greater benefit of livelihood loans relative to a non-livelihood loan (the omitted reference category) for household-level economic outcomes and thus supports H1. The coefficient estimate of LKR 19,923 on an annualized basis represents an economically meaningful—although likely not transformational—increase of about 5.7% over the average income of LKR 348,864 for non-livelihood loans (as reported in Table 3a).

[Insert Table 4 here]

Different kinds of livelihood loans (H2, H3a, and H3b)

Columns (2) and (3) of Table 4 extend the baseline analysis to distinguish different loan purposes at increasing levels of disaggregation. Analyzing livelihood loans for traditional livelihoods vs. microenterprises in Column (2), our findings are consistent with hypothesis H2 that microenterprise loans are not, on average, associated with greater impact. In fact, we see a

larger coefficient estimate for *Traditional livelihood loan* than for *Microenterprise loan* (LKR 21,848 vs. LKR 19,029), though the difference is not statistically distinguishable.[15] Column (3) supports H3a and H3b by showing that loans for traditional livelihoods are on average associated with at least as good outcomes as loans for starting (H3a) or growing microenterprises (H3b). Within microenterprise loans, the coefficient estimate is substantially lower for loans that *Start new microenterprise* than for *Expand existing microenterprise*, the latter also being smaller than for a *Traditional livelihood loan*. A formal comparison of estimates confirms that the difference between *Traditional livelihood loan* and *Start new microenterprise* is statistically significant.[16]

In Columns (4) – (6) of Table 4, we employ our preferred sample that uses: the stringently matched sample. Although the estimated coefficients are somewhat smaller than before, our basic findings from Columns (1) – (3) are replicated. Column (4) still shows a statistically significant income increase associated with *Livelihood loans*, which now represents an annualized income jump of LKR 17,079, or about 5.1% increase over an average income of LKR 334,621 for non-livelihood loans as per Table 3b. Column (5) once more shows a bigger, rather than smaller, impact for *Traditional livelihood loan* than for *Microenterprise loan* (LKR 20,027 or 6.0% increase vs. LKR 15,553 or 4.6% increase). The estimated gap between the impact for *Traditional livelihood loan* and *Microenterprise loan* is larger than in Column (2). Column (6) indicates that the impact is again lower for loans that *Start new microenterprise* than that for *Expand existing microenterprise* (LKR 16,875 or 5.0% increase over baseline vs. LKR

[15] Admittedly, there might be additional dimensions of social impact not captured by our income data. For example, loans for traditional livelihoods could also help generate non-income benefits, such as part of the rice or fish produced are consumed within the household rather than sold. In such a scenario, the impact of such loans might be even greater. Unfortunately, we do not have the data to test this possibility.

[16] The coefficients for the control variables are interesting in themselves. We find a diminishing impact for clients with larger incomes or loans of longer duration. Clients that have either external loans or obtain a bigger loan amount from SLM see bigger income increases. The loan cycle appears to not have a significant effect.

12,270 or just 3.7% increase), while the gap between the estimates for *Expand existing microenterprise* and *Traditional livelihood loan* (LKR 20,004) is now larger.[17]

Overall, as per our arguments, the above evidence provides little support to the popular view that microenterprise loans have larger *average* benefits than traditional livelihood loans. However, this still leaves open the possibility of a nuanced effect on the *distribution* of outcomes (Andriani and McKelvey, 2009; Crawford, McKelvey, and Lichtenstein, 2014; Lichtenstein *et al.*, 2007). The upper tails are of particular interest, as the likelihood of exceptional performance may be shaped in ways different from average effects (Banerjee *et al.*, 2015; Cabral and Mata, 2003; Levine and Rubinstein, 2013). We, therefore, examine the full distribution of outcomes by employing quantile regressions (Koenker and Bassett, 1978; Levine and Rubinstein, 2013). Using quantiles 0.1 through 0.9 in increments of 0.1, Figure 2a shows the estimates for *Livelihood loan* using a quantile model analogous to the OLS model from Column (4) in Table 4.[18] The plot clearly indicates that our OLS findings presented earlier are driven by a strong effect concentrated at the upper part of the distribution, and there is no noticeable difference between livelihood and other loans closer to the lower part.

[Insert Figure 2a here]

Figure 2b further extends the analysis presented above to separately plot estimates for *Microenterprise loan* and *Traditional livelihood loan* using a quantile model analogous to the OLS model from Column (5) in Table 4. The OLS finding (microenterprise loans not being any better than traditional livelihood loans) holds across the distribution, including at the upper tail.

[17] Supplementary analyses in the online appendix find the results presented here to be robust to using alternate outcome variables as well as to further accounting for potential selection biases associated with loan renewal.

[18] In order to conserve space, none of the actual tables for quantile regression estimates have been included in the paper. The findings depicted in Figures 1a and 1b also remain very similar if we carry out the analysis using the full sample instead of the matched sample. All underlying tables are available from the authors upon request.

In fact, the gap in the estimates becomes even bigger at the upper tail (though the difference is not statistically significant). Overall, we conclude that microenterprise loans are no better than traditional livelihood loans for *any* part of the outcome distribution.

[Insert Figure 2b here]

The moderating role of peer effects (H4)

Having established that livelihood loans dominate non-livelihood loans in terms of impact, we now turn to contingencies that may amplify or detract from its impact. As a first potential factor, we examine the role of peer effects. Before introducing the additional variable *Peer livelihood loan* (defined earlier) into the regression model used above, for easier comparison, Columns (1) and (4) in Table 5 reproduce the results from the same respective columns in Table 4.

[Insert Table 5 here]

Columns (2) and (5) first add *Peer livelihood loan* as a separate variable, and the findings differ for the full sample (positive and statistically significant in Column (2)) and the matched sample (positive but not significant in Column (5)). This inconsistency disappears when the moderation terms are included. Columns (3) and (6) add the interaction term between *Peer livelihood loan* and *Livelihood loan* to test H4. The findings are in line with H4: irrespective of whether we look at the full sample in Column (3) or the matched sample in Column (6), the interaction term is positive and significant (and the direct term insignificant). The economic magnitude is also large: when at least one peer in a borrower's group has a livelihood loan, the incremental impact on *Income change* in going from a non-livelihood loan to a livelihood loan almost doubles in the full sample (an increase of SLR 11,201 over a baseline increase of SLR 11,757), and more than triples in the matched sample (an increase of SLR 17,812 over the

baseline increase of SLR 7,684). In line with hypothesis H4, the impact of a borrower taking a livelihood loan thus increases when at least one peer also takes a livelihood loan.

Fully versus partially funded loans (H5)

Finally, we examine the role of partially funded loans – whether or not the loan granted falls short of the loan amount as requested per the original application. This is captured by the variable *Partially funded loan* (defined earlier as 1 if, and only if, a requested loan amount is funded partially). Columns (1) and (4) in Table 6 reproduce the results from the corresponding columns in Table 4 for easy comparison. Columns (2) and (5) introduce *Partially funded loan* as an additional variable to examine its direct effect for the full sample and the matched sample in line with hypothesis H5. Finally, Columns (3) and (6) introduce the interaction term between *Partially funded loan* and *Livelihood loan* to test for any moderation effect (not hypothesized).

[Insert Table 6 here]

The findings for the direct effect are consistent with H5: the coefficient of *Partially funded loan* is negative and significant for both the full sample in Column (2) and the matched sample in Column (5). In other words, loans that do not meet client needs in terms of the amount requested exhibit a lower impact in terms of *Income change*. Further, while the interaction term between *Partially funded loan* and *Livelihood loan* has a negative sign for both the full sample in Column (3) and the matched sample in Column (6), both the statistical significance and the economic magnitude are weak (especially for the matched sample). In other words, while partially funded loans are unambiguously associated with a lower impact, this effect does not seem meaningfully different for livelihood versus non-livelihood loans: borrowers of both kinds of loans see a significantly lower impact when their desired loans amounts are not fully granted.

SUMMARY, DISCUSSION, AND CONCLUSION

While research has documented the uncertain and contingent nature of entrepreneurial success in general (Eesley and Roberts, 2012), scholars have also highlighted the need to distinguish among various kinds of entrepreneurship (Levine and Rubinstein, 2013; Webb *et al*., 2013). In particular, individuals who start small businesses often do so for want of opportunities, with self-employment being a necessity and not a choice (de Castro, Khavul, and Bruton, 2014; Evans and Leighton, 1989; McMullen *et al*., 2008). Such "necessity-based entrepreneurship," which is common at the BOP, is different from mainstream entrepreneurship (Amorós *et al*., 2019; Bradley *et al*., 2012; Bruton *et al*., 2013; Reynolds *et al*., 2005), and appreciating this is essential when studying entrepreneurship as a tool for poverty alleviation (Sutter *et al*., 2019: p. 208).

While building on the literature specific to microfinance, our study answers a general call for paying more attention to entrepreneurship-related phenomena salient in emerging economy contexts (Bruton *et al*., 2013; Foo, Vissa, and Wu, 2020). Although models meant to support microenterprise-led development have attracted significant attention, there has been limited fine-grained examination of the extent of and heterogeneity in outcomes associated with microfinance (Bruton *et al*., 2015; Khavul *et al*., 2013). Our study has tried to fill this gap by investigating household-level outcomes associated with microloans given for microenterprises as well as for other purposes, and documented contingencies that appear to improve their social impact.

Our baseline analysis finds that, while livelihood-focused loans do yield a slightly larger average increase in household income than non-livelihood loans do, this difference is unlikely to represent a transformational impact. More importantly, comparing different kinds of livelihood loans, the income increase for BOP clients from traditional livelihood loans is, if anything, slightly *greater* than for microenterprise loans. This impact of microenterprise loans is especially

limited when given to fund new microenterprises rather than for growing existing ones. We also find that the impact of livelihood loans is greater when multiple members of a microfinance peer group are simultaneously engaged in livelihood-focused activities, and that microloans that better match the borrower's needs (in terms of the loan amount requested) also have a superior impact.

Our results support a view that microfinance should not think of everybody at the BOP as potential entrepreneurs or have a single-minded focus on microenterprises (Allison *et al*., 2013; Alvarez and Barney, 2014; Berge, Bjorvatn, and Tungodden, 2015). As skills, interests, and knowledge of the poor are often better suited to traditional livelihoods, always prioritizing microenterprise over such livelihoods is also not appropriate. Microcredit is best seen not as a "silver bullet" for poverty alleviation but as a tool to employ wisely and selectively (Collins *et al*., 2009; Morduch, 2013). For example, if peer effects boost entrepreneurial success, encouraging group members to simultaneously seek livelihood loans and support one another seems worthwhile. Likewise, if loans have a greater impact when they match the client's needs closely, an excessive focus on standardization in pursuit of efficiency may compromise impact.

We are cautious not to carry our causal claims too far. Despite our stringent matching, we cannot rule out unobservable factors (e.g., ability) affecting both the choice of loan purpose and the observed outcomes. Nevertheless, we view our examination of naturally-occurring data as a valuable complement to recent randomized control trials (summarized by Banerjee *et al*., 2015). In this context, a purely experimental design would entail forcing randomly drawn sets of people into different "treatment groups" for various loan types, even if the median individual in each group has little interest in or skills for the associated activity (e.g., running a microenterprise).

We should acknowledge the limitations of studying a single company in a particular country, as some of our findings might be specific to the context. For example, the results might

have been different if SLM were a non-profit organization rather than a for-profit company, as it might have prioritized impact more (e.g., by assigning fewer clients per loans officer for better support). While SLM seems sincere in pursuing impact as a part of its overall strategy, especially as it seeks funding from socially-conscious investors (Cheng, Ioannou, and Serafeim, 2014; Cobb *et al*., 2016), its clients do not represent the poorest segments of the BOP. This works in favor of the generalizability of our findings: people further down the pyramid would have even greater difficulty succeeding as microentrepreneurs. Nevertheless, rather than treating the poor as a homogenous mass, future research would benefit from getting more nuanced—such as considering how access to finance can best serve as *one* component of interventions designed for different BOP segments to enable transformative impact across all levels of the population.

Another caveat regarding external generalizability is that the success of entrepreneurs depends critically on the broader social, economic, and institutional environment. For example, even within South Asia, Sri Lanka is quite distinct from parts of India, Pakistan, and Bangladesh in terms of infrastructure, access to markets, education levels, and legitimacy of BOP women as entrepreneurs. Therefore, rather than claiming the universality of our findings, we hope that our study encourages further research, both empirical and theoretical, into questions at the intersection of microfinance and entrepreneurship. It would be valuable to collect and analyze similar household-level data from around the world. Recognizing that our contribution has been primarily empirical, we hope that future work will also push the theoretical frontier on this topic in order for new conceptual developments to provide further guidance for empirical work.

Our call for caution against a "one size fits all" approach in linking microfinance and entrepreneurship is certainly not meant to discourage microenterprise-led development in general. Overall, consistent with the literature on how the effect of credit on entrepreneurial

outcomes might be context-dependent (Wright *et al.*, 2016; Wu, Si, and Wu, 2016), we need a better understanding of the conditions appropriate for microfinance-led entrepreneurship (Banerjee *et al*., 2019; Singh, 2019). Future research might, for example, study how integrated solutions—such as microcredit accompanied by training and connection to markets—might boost outcomes (Snihur *et al*., 2017). Another potential contingency, adopting the lens of economic geography, is to consider regional economies in terms of the overall market ecosystems or "clusters" (Porter, 1998; Chatterji, Glaeser, and Kerr, 2014).[19] Overall, for us, the most interesting and useful direction for future research in microfinance seems to be to extend beyond the black-or-white debate regarding *whether* microfinance works to developing a more nuanced understanding of *when* it is most effective, i.e., examining and supporting the enabling conditions under which BOP individuals – whether aspiring entrepreneurs or not – can thrive.

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[19] In an interview, the Chairman of SLM's Board gave an example: "All the group loan lending women, we want to bring them to one location in Colombo and showcase their products… see how many orders we get, whether we have the capacity to perform to those orders, do we link 3-4 other people into that, the quality aspects of it. So you need to give this helping hand to these people if they need to scale-up." At the same time, SLM's leadership has chosen not to go too far in this direction – as they see getting too involved in such sector-specific efforts (even if impactful) as a distraction from building a focused, scalable, and profit-maximizing financial institution.

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Table 1: Related studies in microfinance in strategy and entrepreneurship research

Study	Main outcomes and/or finding	Key causes (driving mechanisms)	Type and Level of Analysis
Khavul (2010)	Provides a perspective on why the topic of microfinance should attract attention in management research.	Microfinance enables access to funding for financially-excluded people to exploit business and livelihood opportunities.	Qualitative – Perspective
Battilana, Dorado (2010)	To meet the challenge posed by hybridity, a common organizational identity is needed for an organization to strike a balance between commercial banking and development logic.	Hiring and socialization policies are crucial early levers for developing a common organizational identity.	Qualitative – Microfinance Organizations
Bruton, Khavul, Chavez (2011)	To create a high-performing business, microfinance borrowers need to have clear future growth orientation, awareness of risk-reward trade-offs, and discretion in decision-making (within their families).	Future orientation, decision-making discretion, and relationship management are the mechanisms that explain why some microfinance borrowers perform better than others in building microenterprises.	Qualitative – Microfinance Borrowers
Kent, Dacin (2013)	The evolution of modern microfinance is shaped by the interaction between commercial banking logic and development logic.	Permeability, i.e., the extent to which the elements of a logic are ambiguous and loosely coupled, may explain why some logics may be more or less open to the influence of other logics.	Qualitative – Review
Khavul, Chavez, Bruton (2013)	The origin and evolution of microfinance is driven by institutional entrepreneurs and established actors.	Institutional entrepreneurs may drive change initially, but, eventually established players respond to, adapt, and exploit innovations.	Qualitative – Institutional Agents
Bruton, Ketchen, Ireland (2013)	To better understand microfinance supported entrepreneurs, management scholars need to complement qualitative with quantitative research.	While the qualitative research that has dominated the entrepreneurship investigations of poverty is unquestionably valuable, the field needs to augment it with quantitative research focusing on entrepreneurship in the context of poverty.	Qualitative – Review
Ault, Spicer (2014)	Ability of commercial organizations to serve the poor is shaped by country-level institutions.	State fragility harms the prospects of low-income business models, because it increases the operating costs of doing business despite the economic efficiency of the microfinance model.	Quantitative – Microfinance Organizations
Ault (2016)	Mission drift of organizations is shaped by commercialization, but country-level institutions moderate this effect.	State fragility increases the costs of serving the poor, thus increasing the likelihood of mission drift (i.e., veering away from social to commercial mission) in for-profit organizations.	Quantitative – Microfinance Organizations

Chliova, Brinckmann, Rosenbusch (2015)	Venture-level outcomes (i.e., venture survival, growth, and profitability) and development outcomes (i.e., financial well-being, health, education, female empowerment) improve due to the access to microcredit.	Microcredit-enabled entrepreneurship has a positive impact on clients by serving as a substitute for institutional voids.	Quantitative – Meta-analysis of Studies
Cobb, Wry, Zhao (2016)	Commercial capital and public capital to microfinance organizations come from financial logic and development logic. As uncertainty rises, the lending practices of commercial and public funders converge.	Institutional logics shape organizational action because they provide organizations a framework that guides attention and helps to discern appropriate behavior in a given context. The practices that are seen as appropriate may differ in placid versus uncertain contexts.	Quantitative – Microfinance Organizations
Zhao, Lounsbury (2016)	Flows of commercial capital and public capital to microfinance organizations across countries are influenced by market logic and religious diversity.	Market logic helps facilitate flows of both commercial and public capital to microfinance organizations. Religious diversity creates strong challenges to the operations of microfinance organizations, which deters capital investment by commercial funders.	Quantitative – Microfinance Organizations
Zhao, Wry (2016)	Number of women borrowers served is higher for non-profit compared to for-profit microfinance organizations. Lower patriarchy or higher gender equality in the state increases the number of women borrowers served.	Societal level institutional logics can influence the outreach of microfinance organizations. Patriarchy can constrain microfinance outreach, thus influencing the ability of women to exploit opportunities.	Quantitative – Microfinance Organizations
Canales, Greenberg (2016)	Loan repayment rate suffers when loan officers leave the microfinance organization.	Relational contracts and embeddedness do not provide organizations with sustainable value solely through personal ties between employees and clients, rather, the consistency in the styles of interaction employed by social actors occupying similar roles (loan officers in this case) provides clear expectations and shapes desirable action.	Quantitative – Microfinance Loans
Wry, Zhao (2018)	Trade-off exists between social outreach intensity and financial sustainability of microfinance organizations. Such trade-offs are amplified under weak institutions.	Lending risk and operating efficiency mediate the negative relationship between poverty focus and financial sustainability. Stronger market institutions can mitigate the negative effect of poverty focus on financial sustainability.	Quantitative – Microfinance Organizations

Table 2a: Loan sample by year and cycle

Year	Loan Cycle				Total
	1	2	3	4	
2009	1,199	0	0	0	1,199
2010	3,903	324	0	0	4,227
2011	8,904	1,697	88	0	10,689
2012	9,319	4,620	932	47	14,918
2013	5,306	2,862	1,298	75	9,541
Total	28,631	9,503	2,318	122	40,574

Note: The sample coverage is from May 2009 to Aug 2013

Table 2b: Loan sample by purpose

Livelihood loans (24,657)	
Microenterprise loans (16,202)	
Start new microenterprise	4,506
Expand existing microenterprise	11,696
Traditional livelihood loans (8,455)	
Agriculture	5,026
Animal husbandry	2,760
Fisheries	669
Non-Livelihood loans (15,917)	
House construction and renovation	14,006
Settle liability	962
Other non-livelihood purpose	949
Total	40,574

Table 3a: Summary statistics for the full sample of loans

Variable	Livelihood loans		Non-Livelihood loans	
	Mean	Std Dev	Mean	Std Dev
Client's income (Sri Lankan Rupees)	381,735	156,832	348,864	145,769
Client's loan cycle	1.33	0.59	1.39	0.62
Loan duration (Months)	12.85	2.00	13.21	2.30
Client has external loans (Indicator)	0.40	0.49	0.32	0.47
Loan amount (Sri Lankan Rupees)	38,163	22,389	41,027	25,485
Year 2009	0.03	0.17	0.03	0.16
Year 2010	0.12	0.32	0.09	0.28
Year 2011	0.28	0.45	0.24	0.43
Year 2012	0.35	0.48	0.39	0.49
Year 2013	0.22	0.41	0.26	0.44

Note: These statistics are for the 24,657 Livelihood loans and 15,917 non-Livelihood loans from Table 1b

Table 3b: Summary statistics for the matched sample of loans

Variable	Livelihood loans		Non-Livelihood loans	
	Mean	Std Dev	Mean	Std Dev
Client's income (Sri Lankan Rupees)	349,153	108,178	334,621	100,293
Client's loan cycle	1.16	0.41	1.16	0.41
Loan duration (Months)	12.44	1.44	12.44	1.44
Client has external loans (Indicator)	0.33	0.47	0.33	0.47
Loan amount (Sri Lankan Rupees)	32,956	15,471	32,997	15,610
Year 2009	0.05	0.22	0.05	0.22
Year 2010	0.12	0.33	0.12	0.33
Year 2011	0.33	0.47	0.33	0.47
Year 2012	0.34	0.47	0.34	0.47
Year 2013	0.16	0.36	0.16	0.36

Note: These statistics are for the 11,506 Livelihood loans and 9,677 non-Livelihood loans matched during many-to-many CEM matching, and are calculated using observations weights from the matching procedure

Table 4: Heterogeneity in household-level outcomes by loan purpose (H1, H2, H3a, H3b)

	(1)	(2)	(3)	(4)	(5)	(6)
Loan Sample:	Full Sample	Full Sample	Full Sample	Matched Sample	Matched Sample	Matched Sample
Regression Model:	OLS	OLS	OLS	OLS	OLS	OLS
Dependent Variable:	*Income change*	*Income change*	*Income change*	*Income change*	*Income change*	*Income change*
Livelihood loan	19,923.30**			17,079.45**		
	(2,189.10)			(2,847.93)		
Microenterprise loan		19,029.05**			15,552.99**	
		(2,364.09)			(3,142.96)	
Start new microenterprise			15,113.65**			12,269.69*
			(3,565.28)			(5,947.58)
Expand existing microenterprise			20,333.36**			16,874.92**
			(2,557.91)			(3,237.46)
Traditional livelihood loan		21,848.24**	21,642.18**		20,027.07**	20,004.14**
		(3,023.73)	(3,030.38)		(3,754.80)	(3,757.24)
Client's income (log)	-231,066.14**	-230,899.17**	-231,006.70**	-162,019.41**	-161,785.28**	-161,970.18**
	(11,033.09)	(11,056.24)	(11,049.15)	(7,001.39)	(7,006.15)	(7,014.73)
Client's loan cycle	2,580.61	2,535.44	2,421.90	1,569.65	1,466.95	1,403.98
	(2,653.78)	(2,659.32)	(2,654.19)	(3,697.27)	(3,694.45)	(3,687.91)
Loan duration	-5,147.49**	-5,144.75**	-5,132.78**	-4,818.13**	-4,798.17**	-4,801.47**
	(909.43)	(909.80)	(909.58)	(1,226.32)	(1,225.86)	(1,225.15)
Client has external loans	18,816.15**	18,828.70**	18,572.89**	5,361.04	5,400.21	5,178.83
	(2,549.82)	(2,549.64)	(2,552.93)	(3,469.18)	(3,470.93)	(3,434.23)
Loan amount (log)	49,645.93**	49,658.81**	49,485.69**	29,199.27**	29,220.73**	29,153.87**
	(5,285.45)	(5,285.26)	(5,296.13)	(5,622.04)	(5,621.30)	(5,637.55)
Branch-Year Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Loan Officer Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	18,339	18,339	18,339	10,295	10,295	10,295
R-squared	0.214	0.214	0.214	0.158	0.158	0.158

Robust standard errors in parentheses, with clustering on client id; Matched sample analysis in columns (4), (5) and (6) employs CEM weights
** p<0.01, * p<0.05, + p<0.1

Table 5: Impact of at least one peer also taking a livelihood loan (H4)

	(1)	(2)	(3)	(4)	(5)	(6)
Loan Sample:	Full Sample	Full Sample	Full Sample	Matched Sample	Matched Sample	Matched Sample
Regression Model:	OLS	OLS	OLS	OLS	OLS	OLS
Dependent Variable:	*Income change*	*Income change*	*Income change*	*Income change*	*Income change*	*Income change*
Livelihood loan	19,923.30**	14,944.75**	11,757.08**	17,079.45**	16,190.06**	7,684.26*
	(2,189.10)	(2,467.08)	(3,035.30)	(2,847.93)	(3,017.58)	(3,606.55)
Peer livelihood loan		8,054.53**	-95.05		3,232.35	-6,567.83
		(2,475.45)	(3,841.32)		(3,231.60)	(5,105.64)
*Livelihood loan * Peer livelihood loan*			11,200.62*			17,812.28**
			(4,857.79)			(6,103.82)
Client's income (log)	-231,066.14**	-229,961.18**	-229,867.10**	-162,019.41**	-162,379.08**	-162,251.35**
	(11,033.09)	(12,695.32)	(12,707.03)	(7,001.39)	(6,620.70)	(6,618.04)
Client's loan cycle	2,580.61	620.30	593.14	1,569.65	759.90	953.65
	(2,653.78)	(2,666.61)	(2,666.95)	(3,697.27)	(3,905.95)	(3,908.87)
Loan duration	-5,147.49**	-4,409.45**	-4,385.34**	-4,818.13**	-4,065.82**	-3,976.52**
	(909.43)	(963.77)	(965.06)	(1,226.32)	(1,266.18)	(1,264.22)
Client has external loans	18,816.15**	19,870.32**	19,901.54**	5,361.04	6,009.80+	6,201.56+
	(2,549.82)	(2,699.24)	(2,698.75)	(3,469.18)	(3,454.72)	(3,453.54)
Loan amount (log)	49,645.93**	51,154.39**	51,128.59**	29,199.27**	31,134.19**	30,928.92**
	(5,285.45)	(5,577.17)	(5,580.54)	(5,622.04)	(6,002.38)	(5,997.70)
Branch-Year Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Loan Officer Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	18,339	15,948	15,948	10,295	9,222	9,222
R-squared	0.214	0.214	0.214	0.158	0.158	0.159

Robust standard errors in parentheses, with clustering on client id; Matched sample analysis in columns (4), (5) and (6) employs CEM weights
** p<0.01, * p<0.05, + p<0.1

Table 6: Impact of partially vs. fully funded loans (H5)

	(1)	(2)	(3)	(4)	(5)	(6)
Loan Sample:	Full Sample	Full Sample	Full Sample	Matched Sample	Matched Sample	Matched Sample
Regression Model:	OLS	OLS	OLS	OLS	OLS	OLS
Dependent Variable:	*Income change*	*Income change*	*Income change*	*Income change*	*Income change*	*Income change*
Livelihood loan	19,923.30**	19,849.25**	21,193.53**	17,079.45**	16,826.82**	17,258.11**
	(2,189.10)	(2,187.45)	(2,400.61)	(2,847.93)	(2,826.46)	(3,073.64)
Partially funded loan		-9,466.52**	-4,094.42		-18,241.35**	-16,706.81*
		(2,536.26)	(3,547.40)		(4,195.71)	(6,580.06)
*Livelihood loan * Partially funded loan*			-8,463.33+			-2,948.59
			(4,647.84)			(7,644.39)
Client's income (log)	-231,066.14**	-231,502.17**	-231,517.17**	-162,019.41**	-162,578.71**	-162,665.75**
	(11,033.09)	(11,038.24)	(11,038.21)	(7,001.39)	(6,991.30)	(6,998.35)
Client's loan cycle	2,580.61	3,412.23	3,393.06	1,569.65	3,768.92	3,786.60
	(2,653.78)	(2,662.28)	(2,662.92)	(3,697.27)	(3,711.03)	(3,708.51)
Loan duration	-5,147.49**	-5,083.24**	-5,092.13**	-4,818.13**	-4,869.35**	-4,864.87**
	(909.43)	(909.44)	(909.51)	(1,226.32)	(1,225.43)	(1,224.66)
Client has external loans	18,816.15**	19,074.48**	19,031.09**	5,361.04	6,359.78+	6,329.38+
	(2,549.82)	(2,550.22)	(2,550.96)	(3,469.18)	(3,455.85)	(3,450.65)
Loan amount (log)	49,645.93**	49,470.90**	49,489.09**	29,199.27**	28,604.22**	28,638.77**
	(5,285.45)	(5,285.95)	(5,287.13)	(5,622.04)	(5,646.61)	(5,644.39)
Branch-Year Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Loan Officer Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	18,339	18,339	18,339	10,295	10,295	10,295
R-squared	0.214	0.214	0.214	0.158	0.160	0.160

Robust standard errors in parentheses, with clustering on client id; Matched sample analysis in columns (4), (5) and (6) employs CEM weights
** p<0.01, * p<0.05, + p<0.1

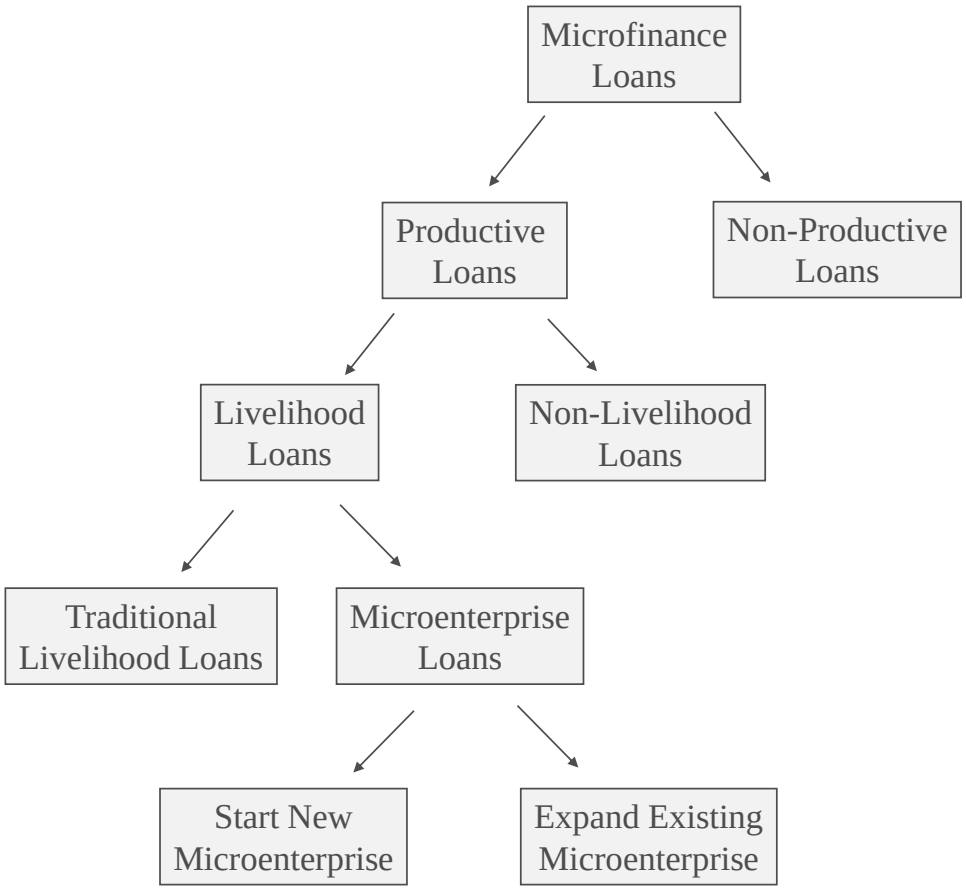
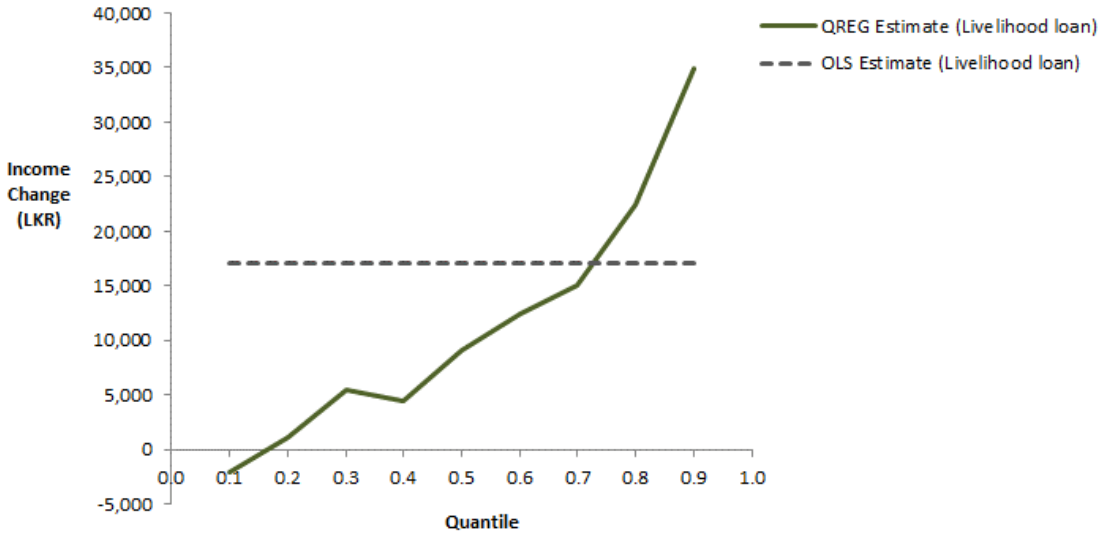
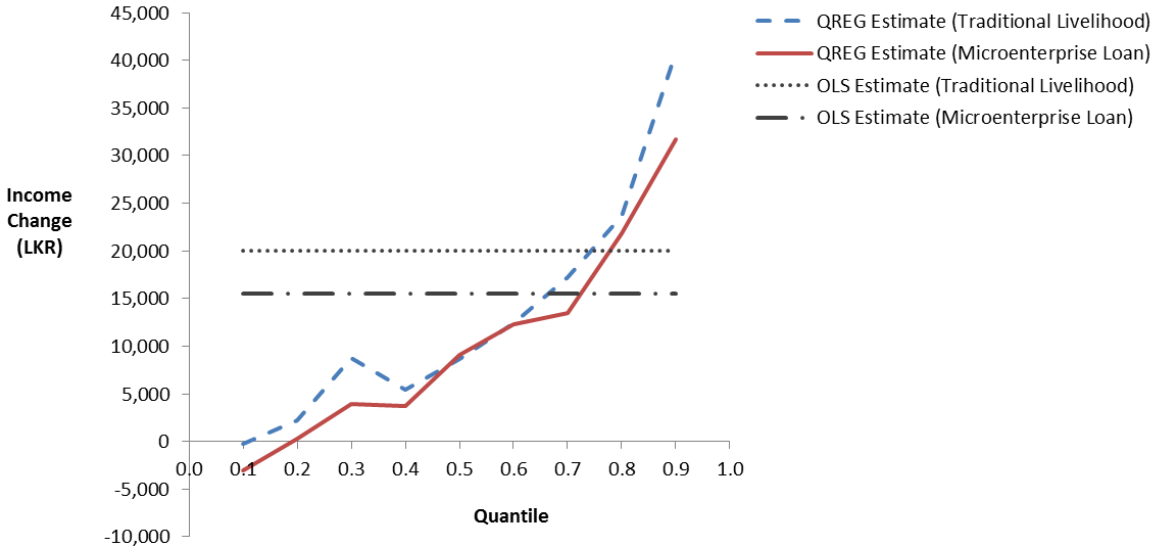


Figure 1: Different kinds of microfinance loans



Note: All regressions employ non-livelihood loans as the reference (omitted) category.

Figure 2a: Quantile regressions for livelihood loans



Note: All regressions employ non-livelihood loans as the reference (omitted) category.

Figure 2b: Quantile regressions for traditional livelihood vs. microenterprise loans