The Impact of Prosocial Microlending on Entrepreneurship in Emerging Economies: A Cross-National Natural Experiment

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Abstract

Microfinance is deemed as a viable means to alleviate poverty through encouraging entrepreneurial activity. Recently, a new form of microfinance, namely prosocial microlending, is gaining popularity. Different from traditional for-profit microfinance, prosocial microlending is both financial and prosocial in nature. Despite its rapid expansion, there is a lack of understanding on whether and how this new form of microfinance affects entrepreneurship in emerging economies. In this study, we evaluate the impact of the introduction of the world’s largest prosocial microlending platform (i.e., Kiva.org) into emerging economies on entrepreneurial activity. Using a cross-national research setting, our results show that the introduction of Kiva.org into emerging economies has a positive effect on entrepreneurial activity. More interestingly, this relationship is contingent on the socioeconomic development of countries (i.e., political, economic, and social institutions). Our study makes both theoretical and practical contributions to the understanding of microfinance, socioeconomic development, and entrepreneurship in emerging economies.

Keywords

Prosocial microlending, entrepreneurship, socioeconomic development, institution, emerging economies.

Introduction

Entrepreneurship refers to individuals “discovering, evaluating, and exploiting opportunities to create future goods and services” (Shane and Venkataraman 2000 p.218). It has been widely recognized to be vital to socioeconomic progress (Barreto 2013; Baumol 1968; Van Stel et al. 2005). Especially in emerging economies, entrepreneurial activities create new employment, contribute to a long-term income, reduce vulnerability to risks, enhance social welfare, and alleviate poverty in a sustainable way (Bruton et al. 2013; Hermes and Lensink 2011; Walsh et al. 2005). However, insufficient financial resources in these countries have restricted entrepreneurial growth. By providing small, uncollateralized loans, prosocial microlending represents an emerging digital solution to this problem for these countries. Extant literature has mainly focused on the impact of classic for-profit microfinance on entrepreneurship (Banerjee et al. 2015; Karlan and Zinman 2011), and has neglected entrepreneurs’ institutional contexts that determine their actions (Hermes and Lensink 2011). It remains unclear whether prosocial microlending affects entrepreneurship in emerging economies especially when these countries vary greatly in their socioeconomic development.

To shed light on this gap, we aim to address two questions in this study: (1) What is the impact of the introduction of prosocial microlending on entrepreneurship in emerging economies? and (2) Under what
socioeconomic institutions will such impact be strengthened? To answer these questions, our study is based on Kiva, the world's largest prosocial microlending platform. We study its entry impact on entrepreneurship in 40 emerging economies over a 13-year long period (2002–2014), under a natural experiment setting.

Literature Review

Microfinance and Entrepreneurship

Microfinance, the provision of microloans (typically $100 to $500) to small-scale businesses (typically self-run enterprises) in emerging economies, is a potent instrument to combat poverty and promote economic growth (Karlan and Zinman 2011). Among various types of microfinance, prosocial microlending is both financial and prosocial in nature (Galak et al. 2011). Initiated in brick-and-mortar institutions, this form of microfinance is popularized on the emerging crowdfunding platforms (e.g., Kiva.org) (Chen et al. 2017). These collateral-free microloans are provided to the poor, who have few access to banking or other financial resources, for the purpose of starting or expanding businesses (Chliova et al. 2015). This type of microloans has won favor because economically minded individuals believe that supporting entrepreneurship can promote sustainable economic growth in emerging economies. These microloans are deemed better than traditional charitable giving (Yunus 2007).

Previous studies about prosocial microlending mainly discuss the determinants of microloan recipient selection (Baron and Szymanska 2011; Burtch et al. 2014; Galak et al. 2011). A few studies on the impact of microfinance on entrepreneurship in emerging economies, nevertheless, have produced conflicting conclusions. Initially, proponents of microfinance argue that access to microfinance contributes to a long-lasting increase in income generating activities, which eradicate poverty (Barnes et al. 2001; Khandker 2005; Littlefield et al. 2003). For instance, after people have access to microfinance in India, scholars observed a marked shift in employment patterns, i.e., from irregular, low-paid daily labor to increased self-employment (Littlefield et al. 2003). Barnes et al. (2001) find entrepreneurs who received microloans earned an average Z$1,380 a month more than others in Zimbabwe in 1999. However, recently, there is an increasing number of studies indicated that microfinance programs have no impact or even negative impact on entrepreneurship (Banerjee et al. 2015; Field et al. 2013; Kaboski and Townsend 2011; Karlan and Zinman 2011). For example, Banerjee et al. (2015) show that there is little evidence that microfinance programs encourage households to become entrepreneurs in Hyderabad, India. Rather, they change households’ consumption habits. More surprisingly, Karlan and Zinman (2011) have conducted a field experiment in the Manila region of the Philippines, and found that people with access to microfinance are less likely to create new businesses, have lower rates of self-employment, but are more capable to cope with risk. All of these studies are conducted in different contextual settings, which probably contributed to these mixed findings (Hermes and Lensink 2011). Moreover, these studies mainly focus on the impact of traditional for-profit microfinance programs. The understanding of how prosocial microlending affects entrepreneurship in emerging economies is still lacking.

Socioeconomic Institutions

According to institution-based view (DiMaggio and Powell 1983; North 1990; Peng et al. 2009; Scott 1995), institutions refer to the humanly devised constraints that structure human interaction. They are made up of formal constraints (rules, laws, constitutions), informal constraints (norms of behavior, conventions, and codes of conduct), and the effectiveness of their enforcement (Holmes Jr. et al. 2013; North 1990). Specifically, socioeconomic institutions can be classified into three types: political, economic, and social (Chan et al. 2008; North 1990; Scott 1995). Together they define the incentive structure of societies (North 1990). The fundamental role of institutions is to reduce uncertainty, provide meaning, and hence reduce transaction costs (North 1990; Scott 2008). Actors (e.g., entrepreneurs) are motivated to comply with the incentive structure defined by institutions (Oliver 1997). Empirical studies showed that country effects, as a proxy for institutional effects, are more salient than other effects in explaining the variation in business performance (Chan et al. 2008; Makino et al. 2004).

In emerging economies, it is evident that markets work imperfectly and the absence of strong institutions is conspicuous (McMillan 2007). Firstly, frequent political changes and the lack of legal infrastructures in these economies are not enough to provide the basis for effective business transactions yet, resulting in
opportunism, rent shifting, bribery, and corruption (Hoskisson et al. 2000; Nelson et al. 1998). Secondly, “macroeconomic stabilization, a precondition for external financial assistance and other resource transactions, has been particularly difficult to achieve” (Hoskisson et al. 2000, p.252). Thirdly, poor social institutions may limit the shared understanding of whether entrepreneurial activities are considered ethical, acceptable, and desirable (Holmes Jr. et al. 2013). These issues result in thin capital markets, shortages of skilled labor, and insufficiency of other complementary resources for entrepreneurship, and would particularly affect entrepreneurs’ ability to mobilize resources in emerging economies (Oliver 1997; Pfeffer and Salancik 1978). Socioeconomic institutions therefore come into play with entrepreneurs in deciding the basic managerial assumptions and criteria for decision-making. Scholars focusing on entrepreneurship in emerging economies are thus forced to consider how socioeconomic institutions may impact entrepreneurial activities, especially when the pace of political change and the size of socioeconomic gains have not been uniform across all the emerging economies (Hoskisson et al. 2000).

Hypothesis Development

The Impact of Prosocial Microlending on Entrepreneurship

We investigate the impact of prosocial microlending introduction on entrepreneurial activities in emerging economies from both financial and prosocial perspectives. From the financial perspective, prosocial microlending provides entrepreneurs in poverty with financial capital to improve their livelihood, purchase necessary resources for establishing small-scale businesses, undertake business strategies, and yield sustainable profits (Bebbington 1999; Cooper et al. 1994). In addition, because prosocial microlending is popularized on crowdfunding platforms, which involve the crowd to lend through the Internet, entrepreneurs have more chances to get funded and engage in entrepreneurial activity. Moreover, different from traditional for-profit microfinance programs which receive criticism for the high interest rates imposed on borrowers (Banerjee et al. 2015), the major advantage of prosocial microlending is its low interest rates. The low interest rates reduce the difficulty in loan repayment, which encourages entrepreneurial growth. Indeed, a fair amount of evidence in economic literature shows the rate of entrepreneurship is inversely proportional to the interest rate (Cross 1981; Gartner 1985; Shane 1996).

From the prosocial perspective, prosocial microlending can offer entrepreneurs in emerging economies sufficient social support in conducting entrepreneurial activity. Specifically, based on prior literature about the determinants of microloan recipient selection, we consider the impact of these factors from the borrower’s side. Having access to prosocial microlending probably makes entrepreneurs in poverty feel that their business ideas will be concerned and valued by others (Allison et al. 2015; Moss et al. 2015), which motivates their further entrepreneurial actions. Moreover, receiving loans from socially proximate lenders may let entrepreneurs feel socially supported by the crowd, which inspires their entrepreneurial enthusiasm (Singh et al. 1999).

Taken together, we expect that the introduction of prosocial microlending will increase entrepreneurial activities in emerging economies. In particular, we focus on both subjective and objective dimensions of entrepreneurial activity. Perceived opportunity, the subjective dimension, is defined as the percentage of 18-64 population who see good opportunities to start a firm in the country in a given year, and derived from the most widely accepted cross-country entrepreneurship project – Global Entrepreneurship Monitor’s (GEM) Adult Population Survey. Firm registration, the objective dimension, is defined as the number of newly registered companies with limited liability (or its equivalent) in the country in a given year, and derived from World Bank’s Entrepreneurship Project. Thus, we propose that:

H1: The introduction of prosocial microlending into emerging economies will have a positive effect on (a) perceived opportunity and (b) firm registration in these countries.

Moderating Effects of Political, Economic, and Social Institutions

We further examine how the three aspects of socioeconomic institutions (i.e., political, economic, and social) in a country may modify the impact of prosocial microlending introduction on entrepreneurial activity, as each emerging economy has its own socioeconomic institutions that affect how entrepreneurs perceive opportunities and mobilize resources (Khanna and Rivkin 2001; North 1990).
Political institutions refer to “governments and the constraints that they impose on key actors, such as politicians and political parties” (Chan et al. 2008, p.1181). Political institutions set and enforce the rule of law, modify profit opportunities, and reflect “how the society prioritizes the rights of individuals, their participation in government, the distribution of resources, and other civic concerns” (Holmes Jr. et al. 2013, p.536). High-quality political institutions are characterized by inclusive political representation without interference from military, religious, economic, or any other powerful groups (Autio and Fu 2015), so that no actors are asymmetrically favored over others (Dorobantu et al. 2017). It ensures inclusive access to opportunity and precludes fear of abuse or expropriation (Autio and Fu 2015). Thus, in an emerging economy with higher-quality political institutions, the financial capital flowed from prosocial microlending can be more equally allocated to entrepreneurs to facilitate their entrepreneurial activities, and the social support gained from prosocial microlending can be more easily combined with entrepreneurs’ confidence in the predictability of political policies to encourage entrepreneurial activities. Thus, the introduction of prosocial microlending will have a greater impact on entrepreneurial activities in countries with higher-quality political institutions. In particular, following prior research (Chan et al. 2008), we examine three dimensions of political institutions: bureaucracy quality, law and order, and political system. We use Worldwide Governance Indicator as a proxy for bureaucracy quality, employ days to start a business to inversely reflect law and order related to entrepreneurship, and use civil event to inversely represent the stability of political system (see Table 1 for definitions). Thus, we propose that:

H2: In countries with higher Worldwide Governance Indicator, the positive effect of prosocial microlending introduction on (a) perceived opportunity and (b) firm registration will be stronger.

H3: In countries with longer days to start a business, the positive effect of prosocial microlending introduction on (a) perceived opportunity and (b) firm registration will be weaker.

H4: In countries with more civil events, the positive effect of prosocial microlending introduction on (a) perceived opportunity and (b) firm registration will be weaker.

Economic institutions refer to “market intermediaries that determine the incentives for and constraints on economic actions” and “infrastructure that support economic transactions” (Chan et al. 2008, p.1181). Economic institutions shape the incentives and abilities of financial intermediaries (Holmes Jr. et al. 2013). High-quality economic institutions are characterized by more advanced monetary and fiscal mechanisms, lighter regulation of entries and ongoing businesses, reduced cost of compliance, and easier access to external resources, notably, capital (Autio and Fu 2015; Holmes Jr. et al. 2013). Thus, in an emerging economy with higher-quality economic institutions, the financial capital provided by prosocial microlending can be more effectively allocated to entrepreneurs through advanced financial intermediaries, and the social support brought by prosocial microlending can more easily boost entrepreneurs’ confidence in the repay from entrepreneurial activities. Thus, the impact of prosocial microlending introduction on entrepreneurial activities will be amplified in countries with higher-quality economic institutions. In particular, following prior research (Chan et al. 2008), we examine three dimensions of economic institutions: general economic conditions, infrastructures, and Internet economic conditions. We use GDP growth as an inverse proxy for general economic conditions¹, employ urban population ratio to reflect infrastructures, and use mobile cellular subscription to represent Internet economic conditions (see Table 1 for definitions). Thus, we propose that:

H5: In countries with higher GDP growth, the positive effect of prosocial microlending introduction on (a) perceived opportunity and (b) firm registration will be weaker.

H6: In countries with higher urban population ratio, the positive effect of prosocial microlending introduction on (a) perceived opportunity and (b) firm registration will be stronger.

H7: In countries with more mobile cellular subscriptions, the positive effect of prosocial microlending introduction on (a) perceived opportunity and (b) firm registration will be stronger.

Social institutions refer to recursive practices “that constrain the choice of action and facilitate acceptable and preferred behavior by the members of a society” (Chan et al. 2008, p.1182). Social institutions are found to influence the costs of engaging in business activities in a country (Chan et al. 2008). High-quality social institutions are characterized by enhanced trust, democracy, beliefs about the basis of productivity, productive capacity, and management dynamics (Chan et al. 2008). Thus, in an emerging economy with

¹ In emerging economies, the higher the GDP growth is, the lower the starting point of a country’s economic conditions will be.
higher-quality social institutions, entrepreneurs are more encouraged by the shared cognitive understanding to tap on the financial capital as well as the social support provided by prosocial microlending to increase entrepreneurial activities. Thus, the positive effect of prosocial microlending introduction on entrepreneurial activities will be stronger in countries with higher-quality social institutions. In particular, following prior research (Chan et al. 2008), we examine two dimensions of social institutions: justice and corruption in government. We employ tertiary education ratio as a proxy of justice, and use Corruption Perceptions Index to inversely reflect corruption in government (see Table 1 for definitions). Thus, we propose that:

**H8:** In countries with higher tertiary education ratio, the positive effect of prosocial microlending introduction on (a) perceived opportunity and (b) firm registration will be stronger.

**H9:** In countries with higher Corruption Perceptions Index, the positive effect of prosocial microlending introduction on (a) perceived opportunity and (b) firm registration will be stronger.

**Data**

We base our study on Kiva, the world’s largest prosocial microlending platform. Kiva posts solicitations for microloans from individuals in emerging economies (Kiva 2017). We collect data from five separate sources, namely, Kiva, Global Entrepreneurship Monitor (GEM), World Bank, Economy Watch, and Center for Systemic Peace (CSP). We construct a panel dataset that details the entrepreneurial activities and institutional characteristics of 40 countries, spanning 13 years from 2002 to 2014. This panel data is further combined with data on Kiva’s entry, measured by the first instance it was used in a country. With this data, we constructed a binary entry indicator for a country for a given year, Kiva entry. Table 1 presents variable definitions and data sources of our sample.

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Variable Code</th>
<th>Definition</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived opportunity</td>
<td>perceive_oppp</td>
<td>Percentage of 18-64 population who see good opportunities to start a firm per calendar year in a country.</td>
<td>Global Entrepreneurship Monitor’s (GEM) Adult Population Survey</td>
</tr>
<tr>
<td>Firm registration (ln)</td>
<td>firm_register</td>
<td>Number of newly registered companies with limited liability (or its equivalent), per calendar year in a country, with ln taken.</td>
<td>World Bank’s Entrepreneurship Project</td>
</tr>
<tr>
<td>Kiva entry</td>
<td>Kiva_entry</td>
<td>A binary indicator of Kiva entry for a country for a given year.</td>
<td>Kiva.org</td>
</tr>
<tr>
<td>Worldwide Governance Indicator</td>
<td>wgi</td>
<td>An aggregated indicator of six dimensions of governance indicators for countries and territories per calendar year.</td>
<td>World Bank’s Worldwide Governance Indicators (WGI) project</td>
</tr>
<tr>
<td>Days to start a business (ln)</td>
<td>Indays</td>
<td>Time required to start a business is the number of calendar days needed to complete the procedures to legally operate a business for a country for a given year, with ln taken.</td>
<td>World Bank’s Doing Business project</td>
</tr>
<tr>
<td>Civil event</td>
<td>civil_event</td>
<td>Total summed magnitude of all societal major episodes of political violence, per calendar year in a country. A major episode involves at least 500 directly-related fatalities and reaches a level of intensity in which political violence is both systematic and sustained.</td>
<td>Center for Systemic Peace’s (CSP) Polity IV Database</td>
</tr>
<tr>
<td>GDP growth</td>
<td>GDPGrowth</td>
<td>Annual percentage growth rate of GDP at market prices based on constant local currency.</td>
<td>World Bank’s National Accounts Data</td>
</tr>
<tr>
<td>Urban population ratio</td>
<td>urban</td>
<td>Ratio of people living in urban areas as defined by national statistical offices, per calendar year in a country</td>
<td>World Bank’s United Nations, World Urbanization Prospects</td>
</tr>
<tr>
<td>Mobile cellular subscriptions</td>
<td>mobile</td>
<td>Mobile cellular telephone subscriptions per 100 people, per calendar year in a country.</td>
<td>World Bank’s International Telecommunication Union, World Telecommunication / ICT Development Report and database</td>
</tr>
<tr>
<td>Tertiary education ratio</td>
<td>ter_edu</td>
<td>Total enrollment in tertiary education, expressed as a percentage of the total population of the five-year age group following on from secondary school leaving, per calendar year in a country.</td>
<td>World Bank’s UNESCO Institute for Statistics</td>
</tr>
</tbody>
</table>
Corruption Perceptions Index
corruption
Ranking of countries by their perceived levels of corruption, as determined by expert assessments and opinion surveys, with a scale from 0 (highly corrupt) to 10 (very clean).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
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<tr>
<td>GDP per capital</td>
<td>GDPpc Gross domestic product divided by midyear population, per calendar year in a country.</td>
<td>World Bank’s National Accounts Data</td>
</tr>
<tr>
<td>Inflation</td>
<td>inflation Annual growth rate of the GDP implicit deflator, per calendar year in a country.</td>
<td>World Bank’s National Accounts Data</td>
</tr>
<tr>
<td>Sanitation facilities</td>
<td>sanitation Percentage of the population using improved sanitation facilities, per calendar year in a country.</td>
<td>World Bank’s WHO/UNICEF Joint Monitoring Program (JMP) for Water Supply and Sanitation</td>
</tr>
<tr>
<td>Primary enrollment ratio</td>
<td>primary_edu Total enrollment in primary education, expressed as a percentage of the population of official primary education age, per calendar year in a country.</td>
<td>World Bank’s UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>Unemployment ratio</td>
<td>unemployment Share of the labor force that is without work but available for and seeking employment, per calendar year in a country.</td>
<td>World Bank’s International Labor Organization, ILOSTAT database</td>
</tr>
<tr>
<td>Openness to trade</td>
<td>trade_open The sum of merchandise exports and imports divided by the value of GDP, per calendar year in a country.</td>
<td>World Bank’s World Trade Organization, and World Bank GDP estimates</td>
</tr>
</tbody>
</table>

Table 1. Variable Definition and Data Source

**Empirical Methodology and Preliminary Results**

**Main Effect Analysis**

The entry of Kiva into different country in different years forms a natural experiment setting⁵ that allows comparing the difference in entrepreneurial activity before and after Kiva entry for a country to the same difference for entrepreneurial activity in countries without Kiva entry (Chan and Ghose 2014). To test the impact of Kiva entry on entrepreneurial activity, the equation is:

\[ y_{ct} = A_c + B_t + \alpha * C_{ct} + \beta * D_{ct} + e_{ct} \]

where c stands for countries and t refers to time, t=2001,…,2015; \( y_{ct} \) is the entrepreneurial activity for country c at time t; \( A_c \) is the vector of country fixed effects; \( B_t \) is the vector of time fixed effects; \( C_{ct} \) is a vector of moderators and controls. \( D_{ct} \) is the binary indicator for Kiva entry. \( D_{ct} = 1 \) when Kiva gave the first loan to a focal country in a particular year, after which year \( D_{ct} = 1 \); otherwise \( D_{ct} = 0 \). The \( e_{ct} \) is the error item. The \( \beta \) is the difference-in-difference estimate of the impact of Kiva entry.

Table 2 presents the results of fixed effects model. Models (1) to (7) report the results predicting perceived opportunity. Model (1) only included controls. Model (2) added the main effect of Kiva entry. The results of Model (2) show that Kiva entry has a significant positive effect on perceived opportunity (\( \beta = 6.119, p<0.05 \)), supporting H1a. To further control for possible time-varying impact that may affect entrepreneurial activity, we included the interactions between controls and year parameters in Model (3), and the results continue to indicate a positive and significant effect of Kiva entry. Moreover, if Kiva entry takes place in the later months of a year, a binary year indicator for Kiva entry may not capture the presence of Kiva adequately. To account for this possibility, Model (4) treated an entry in the last quarter of the year as an entry in the following year, and Model (5) regarded an entry in the last two quarters of the year as an entry in the following year. Their results did not differ qualitatively. On top of the binary entry variable, we also employed two continuous measures to reflect the magnitude of Kiva funding – the number of projects funded (\( \text{funded}_\text{projects} \), with ln taken), and the amount of funding (\( \text{funded}_\text{amount} \), with ln taken) in Models (6) and (7) respectively, and obtained highly consistent results. Models (8) to (14) report the results predicting the number of new registered firms, confirming H1b.

⁵ As Allison et al. (2013) and Kiva (2012) documented, Kiva does not choose the entry of countries or the timing of entry according to countries’ prior entrepreneurship level. Rather, Kiva strongly emphasizes on social impact in terms of poverty alleviation. Therefore, the entry timing into each country is exogenous to entrepreneurial activities, and the setting of natural experiment is secured.
DV: perceive_opp

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
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<tr>
<td>Control</td>
<td>Main effect</td>
<td>Control*time</td>
<td>Last quarter</td>
<td>Last 2 quarters</td>
<td>IV measure: Funded projects</td>
<td>IV measure: Funded amount</td>
<td></td>
</tr>
<tr>
<td>Kiva_entry</td>
<td>6.119*</td>
<td>6.325+</td>
<td>6.723*</td>
<td>8.655**</td>
<td>1.009*</td>
<td>0.570*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.747)</td>
<td>(3.752)</td>
<td>(3.034)</td>
<td>(2.732)</td>
<td>(0.466)</td>
<td>(0.233)</td>
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<tr>
<td>R-squared</td>
<td>0.361</td>
<td>0.386</td>
<td>0.434</td>
<td>0.391</td>
<td>0.412</td>
<td>0.381</td>
<td>0.392</td>
</tr>
<tr>
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<td>43</td>
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<tr>
<td>No. of obs.</td>
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</table>

DV: firm_register

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<th>(8)</th>
<th>(9)</th>
<th>(10)</th>
<th>(11)</th>
<th>(12)</th>
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<tr>
<td>Control</td>
<td>Main effect</td>
<td>Control*time</td>
<td>Last quarter</td>
<td>Last 2 quarters</td>
<td>IV measure: Funded projects</td>
<td>IV measure: Funded amount</td>
<td></td>
</tr>
<tr>
<td>Kiva_entry</td>
<td>0.185*</td>
<td>0.164*</td>
<td>0.239*</td>
<td>0.243*</td>
<td>0.034*</td>
<td>0.017*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.075)</td>
<td>(0.074)</td>
<td>(0.101)</td>
<td>(0.101)</td>
<td>(0.014)</td>
<td>(0.007)</td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>0.562</td>
<td>0.578</td>
<td>0.601</td>
<td>0.587</td>
<td>0.588</td>
<td>0.582</td>
<td>0.583</td>
</tr>
<tr>
<td>No. of countries</td>
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<td>40</td>
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<tr>
<td>No. of obs.</td>
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</table>

Robust standard errors are reported in parentheses below coefficients. All control variables are included. All models include country and year fixed effects. Complete results are available upon request. +p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001.

Table 2. Results of Main Effects

A series of robustness checks were conducted to rule out alternative explanations. Firstly, since our assumption is that Kiva provides additional financial resources to invoke people’s entrepreneurial activity, for those people who have to do entrepreneurial activity by necessity (i.e., having no better choice for work), Kiva entry should not affect their choice. Thus, we employed necessity-based entrepreneurial activity as the dependent variable, defined by GEM as the percentage of individuals involved in early-stage entrepreneurial activity who claim to be driven by necessity as opposed to opportunity. The results show that Kiva entry has no significant impact on necessity-based early-stage entrepreneurial activity, therefore confirming our assumption. Secondly, to assess whether the increase in entrepreneurial activity due to pre-entry events overlaps with the period of Kiva entry at various countries, we included two years of pre-entry year dummies along with four years of post-entry year dummies as placebos to capture potential inter-temporal entry effects predicting perceived opportunity and predicting firm registration. Both of their results suggest that the positive effect of Kiva entry is unlikely to be an artifact effect that generated from years prior to Kiva entry, but at least two years following Kiva entry. Thirdly, we randomized Kiva’s entry year predicting perceived opportunity and predicting firm registration. Both of their results suggest that randomized Kiva entry has no significant effect, therefore corroborating our prediction. Lastly, to further control for endogeneity, we performed 2SLS estimation predicting perceived opportunity and predicting firm registration. The instrumental variable is the number of countries in the same continent that Kiva has entered in the same year as the focal country, and its validity was confirmed by Cragg-Donald Wald F test and Sargan test. The results remained consistent.

Moderating Effect Analysis

Models (1) to (6) in Table 3 report the results of moderating effects regarding the three political moderators. The results of Model (1) show that in countries with higher Worldwide Governance Indicator, the positive effect of Kiva entry on perceived opportunity will be stronger, supporting H2a. The results of Model (2) show that in countries with longer days to start a business, the positive effect of Kiva entry on perceived opportunity will be weaker, supporting H3a. The results of Model (3) show that in countries with more civil events (i.e., greater political instability), the positive effect of Kiva entry on perceived opportunity will be weaker, confirming H4a.

Models (7) to (12) report the results of moderating effects regarding three economic moderators. The results of Model (7) show that in countries with higher GDP growth, the positive effect of Kiva entry on perceived opportunity will be weaker, supporting H5a. The results of Model (8) show that in countries with higher urban population ratio, the positive effect of Kiva entry on perceived opportunity will be...
stronger, supporting H6a. The results of Model (9) and (12) show that in countries with more mobile cellular subscriptions, the positive effect of Kiva entry on perceived opportunity or firm registration will be stronger, confirming H7a and H7b respectively.

Models (13) to (16) reports the results of moderating effects regarding the two social moderators. The results of Model (13) and (15) show that in countries with higher tertiary education ratio, the positive effect of Kiva entry on perceived opportunity or firm registration will be stronger, supporting H8a and H8b respectively. The results of Model (14) and (16) show that in countries with higher Corruption Perceptions Index (i.e., less corrupt), the positive effect of Kiva entry on perceived opportunity or firm registration will be stronger, confirming H9a and H9b respectively.

<table>
<thead>
<tr>
<th>DV: firm_register</th>
<th>DV: firm_register</th>
<th>DV: firm_register</th>
</tr>
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<tbody>
<tr>
<td>Kiva_entry × GDPgrowth</td>
<td>0.003 (0.013)</td>
<td>Kiva_entry × ter_edu</td>
</tr>
<tr>
<td>Kiva_entry × urban</td>
<td>0.003 (0.004)</td>
<td>Kiva-entry × corruption</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.602 0.617 0.585</td>
<td>R-squared</td>
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<tr>
<td>No. of countries</td>
<td>40 40 40</td>
<td>No. of countries</td>
</tr>
<tr>
<td>No. of obs.</td>
<td>413 382 413</td>
<td>No. of obs.</td>
</tr>
</tbody>
</table>

All variables in Table 2 are included. Complete results are available upon request. +p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001.

**Table 3. Results of Moderating Effects**

**Discussion and Conclusion**

This study analyzes the impact of prosocial microlending on entrepreneurship in emerging economies using an international dataset. Through employing a DID specification, the results suggest that the introduction of prosocial microlending (i.e., Kiva.org) into emerging economies increases entrepreneurial activity. More interestingly, this relationship is contingent on socioeconomic institutions.

Our study makes valuable theoretical and practical contributions. Specifically, we focus on the effect of prosocial microlending on entrepreneurial activities in emerging economies. It not only enriches the literature on microfinance, but also reveals the business and social value of online microfinance in less developed countries. In addition, by investigating the distinct moderating effects of three aspects of socioeconomic institutions (i.e., political, economic, and social), this study indicates heterogeneous effects of online microfinance on entrepreneurship in different institutional contexts. By doing so, we also reconcile the conflicting findings on the relationship between microfinance and entrepreneurship in the previous literature. Practically, we provide insights for policy makers in emerging economies to maximize the utility of this new form of microfinance by considering different socioeconomic institutional contexts. Moreover, the operators of online microfinance platforms can also benefit from this research by taking different strategies when they are entering emerging economies with distinct socioeconomic contexts.
REFERENCES


