

The purpose-driven crowdfunding and the growing potential of the Prosocial lending-based model¹

Received
27th February 2024

Revised
18th July 2024

Accepted
26th July 2024

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Abstract

Frame of the research: Crowdfunding has emerged as a transformative fintech solution, significantly changing the financing of new projects. Among the various forms of crowdfunding, purpose-driven platforms like Kiva transcend traditional financial transactions by emphasizing social and economic empowerment. Despite its potential, there remains a gap in understanding how borrowers' narratives influence lenders' decisions, particularly in contexts where social motivations are paramount. This research aims to bridge this gap by analyzing the narratives used by borrowers to describe their projects on the Kiva platform.

Purpose of the paper: This study seeks to explore and classify the different types of narratives employed by borrowers on Kiva to attract funding. By doing so, it aims to uncover the socio-economic impacts of these loans and the role of crowdfunding as a driver for social and economic empowerment. The research focuses on linking the intrinsic motivations of lenders and the narratives presented by borrowers.

Method: This study employs a topic modeling approach to analyze a dataset of Kiva-funded projects, focusing on borrowers' narratives. The methodology includes data cleaning, visualization, and topic modeling using Latent Dirichlet Allocation (LDA) applied to text from the "use" and "description" sections of Kiva projects' pages from 2005 to 2021.

Results: Our analysis uncovered eight distinct loan narratives, each associated with various types of entrepreneurial projects. These narratives range from agricultural advancements to educational pursuits, highlighting the diverse aspirations of borrowers. This diversity not only demonstrates the broad spectrum of entrepreneurial projects supported by crowdfunding, but also emphasizes the nature of these loans in meeting the specific needs and goals of individuals across different regions and sectors.

Limits: Our study's scope is limited to data from the Kiva platform, affecting the extent of our conclusions. Future research should expand to include multiple crowdfunding sources to enhance the diversity and applicability of findings.

Practical implications: By comprehending the diverse entrepreneurial initiatives facilitated by Kiva loans, stakeholders can customize financial products and support services to better align with the requirements of borrowers. This insight is crucial for enhancing the efficacy of microfinance in fostering economic development and empowering underserved communities.

Originality of the paper: Through the identification of specific borrowers' narratives, this research contributes to the broader discourse on financial inclusion,

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economic empowerment, and the role of crowdfunding in facilitating access to capital for underserved communities. This study not only provides a deeper understanding of the narratives that drive purpose-driven crowdfunding but also highlights the importance of aligning financial support with the socio-economic goals of borrowers to foster sustainable development and inclusive growth.

Key words: *lending-based prosocial crowdfunding; purpose-driven crowdfunding; microlending; Kiva*

1. Introduction

This research, utilizing topic modeling of Kiva project descriptions, aims to explore and classify different types of narratives used by borrowers to attract funders. This exploration reveals crowdfunding's role not just as a financing mechanism but as a driver for social and economic empowerment, highlighting its significance in addressing personal aspirations and overcoming economic challenges as a way to describe and justify the purpose of the investment.

Relevant contributions in the literature provide a foundational understanding of the role of crowdfunding, and in particular narratives in this context. George *et al.* (2021) address the concept of purpose in organizational contexts, focusing on duty-based purpose that is tightly aligned with the values and identities inherent inside the company. In the realm of crowdfunding, this approach is captured by purpose-driven crowdfunding, which focuses on social aims and lenders' intrinsic motivations triggered by the narratives communicating such aims. This type of crowdfunding is clearly distinct from commercial crowdfunding, which primarily seeks financial returns. Purpose-driven crowdfunding combines philanthropic support with entrepreneurial development to create both economic and social value simultaneously (Figuerola-Armijos and Berns, 2022). Furthermore, the role of narratives in crowdfunding, as discussed by Tajvarpour and Pujari (2022), underscores the importance of storytelling in engaging potential lenders and conveying the significance of the projects.

Despite these significant contributions, there remains a gap in understanding what project narratives borrowers believe are relevant in a context where the social motivations of lenders matter the most. This gap is crucial because the narratives borrowers use to describe their projects can influence lenders' perceptions and decisions, particularly in purpose-driven crowdfunding where intrinsic and extrinsic motivations are connected. To address this gap, our research question (RQ) is: "How do borrowers narrate their projects in purpose-driven crowdfunding platforms?" This question is relevant for both academics and managers. For academics, it provides insights into the intersection of narrative studies and crowdfunding, and more broadly the discourse on financial inclusion and socio-economic development. For managers and practitioners within crowdfunding platforms, understanding these narratives can inform the design of more effective campaigns and financial instruments tailored to support entrepreneurial growth.

We aim to fill this gap by capturing the types of narratives provided by loan seekers on the Kiva platform. Using topic modeling, an increasingly popular analytical method, we identify and classify the different types of project narratives in purpose-driven crowdfunding. This approach enables us to create typologies of project descriptions, shedding light on how borrowers articulate their needs and aspirations, and how these narratives can effectively engage lenders motivated by intrinsic drive toward social impact.

2. Theoretical background

2.1 From Crowdfunding to Purpose-driven Crowdfunding

Crowdfunding has emerged as a novel fintech solution (Belleflamme *et al.*, 2014), significantly innovating the landscape of financing by facilitating capital acquisition for a wide range of projects and ventures (Leboeuf and Schwiendbacher, 2018; Vulkan *et al.*, 2016). Classified into four main types - equity, lending, reward, and donation - each form of crowdfunding targets different stakeholder needs and expectations. Equity crowdfunding (Cumming *et al.*, 2021; Johan and Zhang, 2022) allows investors to acquire equity shares in ventures, aligning their financial returns with the venture's success. Lending-based models (dos Santos Felipe *et al.*, 2022; Jiang *et al.*, 2021) enable individuals to lend money to projects with the expectation of future repayment. Reward-based crowdfunding (Cappa *et al.*, 2021; Crosetto and Regner, 2018; Felipe *et al.*, 2022; Jiang *et al.*, 2021) involves backers funding projects in exchange for tangible items or services, while donation-based models (Alegre and Moleskis, 2021; Robiady *et al.*, 2021) operate on a philanthropic basis, with contributors supporting causes without expecting financial or material returns. All these models are motivated by a blend of intrinsic and extrinsic motivations: intrinsic motivations (Allison *et al.*, 2015; Cappa *et al.*, 2023; Maiolini *et al.*, 2024) are driven by personal satisfaction or altruistic desires, whereas extrinsic motivations (Zhang and Chen, 2019) are influenced by the anticipation of tangible rewards or financial gains.

Within this broad variety of crowdfunding, it is crucial to delineate the role of a distinct category known as “lending-based prosocial platforms,” (Berns *et al.*, 2020) where the social impact of investments takes precedence. Unlike conventional crowdfunding models that often lean towards financial or material returns, these platforms emphasize the social dimension of investments (Figueroa-Armijos and Berns, 2022), connotating these types of fundraising for socially impactful projects as *purpose-driven crowdfunding*, where the mix of philanthropic support with entrepreneurial development can create both economic and social values at the same time (Santos, 2012). This perspective on crowdfunding aligns particularly well with what George *et al.* (2021) define as *duty-based purpose*, meaning an organizational purpose that is not simply specific to the organization (such as goal-based purpose, expressed typically in mission and vision statements) but derived by values and identities deeply

rooted in the organizational culture and background. As such, purpose-driven crowdfunding emerges as a crucial link between the financial goals of individuals in the Global South and lenders in the Global North, transcending traditional financial transactions with its lending approach based on the solution of long-seated social issues.

2.2 Purpose-driven crowdfunding as a tool for development

With its duty-based purpose, purpose-driven crowdfunding aligns closely with the principles of microfinance rather than with other financial schemes upon which crowdfunding is usually based, such as equity and pure investment (Allison *et al.*, 2015; Anglin *et al.*, 2020; Berns *et al.*, 2020). Platforms offering purpose-driven crowdfunding emphasize the role of philanthropy and finance in promoting sustainable development and economic empowerment worldwide, facilitating investments driven by the desire to improve society. Microfinance has become an important business that supports microenterprises, helps them develop, and benefits families and communities (Diekman *et al.*, 2007). Some platforms, like Zidisha, operate peer-to-peer lending, whereas others work with local partners. Kiva collaborates with microfinance institutions (MFIs) to distribute and collect loans.

Indeed, Kiva itself has been the focus of a stream of research on prosocial crowdfunding (as recently used by Maiolini *et al.*, 2024). A series of studies have delved into the competition among MFIs operating in conjunction with it (Ly and Mason, 2012), into its philosophy (Bajde, 2013), and its poverty alleviation impact (Schwittay, 2014). Other studies examined lenders' decision-making (Burtch *et al.*, 2014); social distance (Galak *et al.*, 2011), and motivation and costs (Meer and Rigbi, 2013). In the larger realm of commercial peer-to-peer (P2P) lending, research by Gonzalez and McAleer (2011) and Bachmann *et al.* (2011) have provided significant insights into credit default factors, while other studies focused on aspects like financial intermediation (Liu *et al.*, 2012), social networks (Herzenstein *et al.*, 2011) and on how borrowers' appearance influences lending, finding that loan terms and amounts work as key credit risk factors (Jenq, *et al.*, 2015).

This perspective sparks a debate regarding purpose-driven crowdfunding as an alternative economic growth tool, especially in countries with institutional voids (Getachew, 2018). Chakrabarty and Erin Bass (2015) underline the need to research how crowdfunding might cover these voids and provide new economic empowerment and development pathways when traditional finance institutions fail.

However -and surprisingly- despite the compelling point made by Kanter (1991, P. 10), i.e., "Money should never be separated from mission. It is an instrument, not an end," the dynamics of purpose-driven crowdfunding, particularly its potential to provide credit access to marginalized borrowers, remains underexplored. Studying purpose-driven crowdfunding as a model that drives social and economic empowerment offers a comprehensive framework that enhances our understanding of crowdfunding's role in the modern financial landscape by linking

motivations with socioeconomic dynamics to support entrepreneurial activities boosted by intrinsic motivation (Cappa *et al.*, 2023; Allison *et al.*, 2015), social capital (Cai *et al.*, 2021), and resilience in the face of economic challenges. Precisely this key role of intrinsic motivation brings to the forefront the role of personal characteristics of borrowers (Berger and Gleisner, 2009; Pope and Sydnor, 2011), and especially that of entrepreneurial narratives (Liu *et al.*, 2012) that can trigger -or vice versa switch off- lenders' interest for the project (Cappa *et al.*, 2021; Pandit and Tamhane, 2017), stimulating their intrinsic motivation such as personal fulfillment or altruism (Allison *et al.*, 2015; Cappa *et al.*, 2023), or failing to do so.

2.3 Intrinsic motivation and narratives

In the crowdfunding universe, narratives are relevant because information asymmetry makes lenders' investment decisions unpredictable, affecting their willingness to support projects. The knowledge asymmetry that characterizes crowdfunding is especially evident in lending-based prosocial projects directed to entrepreneurs in the Global South. While access to credit for entrepreneurs in emerging economies has improved, Yoshikawa *et al.* (2007) and Yiu *et al.* (2013) note that borrowers' lack of trustworthy and credible information remains a major obstacle in this area of the world. The Institutional voids make these undertakings more complicated and emphasize their specific issues. It also makes lending investment decisions harder.

Given these limitations in information gathering, even simple project descriptions help reduce information asymmetry and improve micro-lending platforms' support for entrepreneurship and economic development in the Global South (Yiu *et al.*, 2013). In donation-based crowdfunding (Robiady *et al.*, 2021) storytelling has been proven vital (Tajvarpour and Pujari, 2022). Indeed, lenders may use storytelling to understand how borrowers will use the cash and how they will assist the entrepreneurial venture's economic and social goals. Storytelling with cognitive, linguistic, and conative components allows for a complete effect study (Basu and Palazzo, 2008). It defines a direction that guides loan choices, helping supporters understand their contributions in the context of social and economic progress.

We contribute to this line of inquiry by evaluating how borrowers narrate their projects on a purpose-driven crowdfunding platform, specifically when asked to describe it and flash out the use they would make of the money. In this way, we can understand much of what is going on "behind the scenes", understanding what project features borrowers believe are relevant in a context where intrinsic prosocial motivations of lenders matter the most, a topic still under-investigated in the literature. In that sense, we can conceptualize the language and implications of prosocial lending-based projects. This allows us to then identify patterns in project descriptions, providing insights into borrowers' motivations and actions as proposed rationales for the purpose of the loan. Our contribution, thus, moves from the research question: *How do borrowers narrate their projects in purpose-driven crowdfunding platforms?*

3. Empirical setting

Kiva, established in 2005 in San Francisco, is a notable crowdfunding platform serving over 1.7 billion individuals in countries of the Global South with limited financial access. It aids borrowers aiming to improve their living conditions, start businesses, or enhance their small enterprises. Operating in over 80 countries, Kiva connects 2.2 million lenders with 4.9 million borrowers, backed by 450 volunteers, and more than 4 thousand field partners, and trustees. These field partners, including microfinance institutions, schools, and NGOs, manage the loan process, while trustees endorse direct loans. Lenders on Kiva can invest as little as \$25 in various projects, with an option for additional financing. The platform's operations are funded through field partner fees and donations from supporters. Kiva's sustainable model has facilitated 2.3 million loans, with a total of \$2 billion in loans funded, and 5 million people reached. Kiva's approach benefits entrepreneurs and communities, creating jobs and improving living standards. The organization ensures effectiveness through stringent due diligence, enabling lenders to assess risks. Loan repayments vary by region and demographics and are mostly managed by local partners in over 80 countries. In South America, direct loans have higher default rates, but Kiva remains effective in reaching underserved populations. Kiva's impact has been recognized by awards such as the Wall Street Journal Financial Inclusion Challenge in 2015 and Google's Global Impact Award.

4. Methodology

Our study utilizes a topic modeling methodology of a sample of projects funded on Kiva, which involves identifying and analyzing the borrowers' narratives with their backgrounds and their relationship to their specific loan aims. In particular, the methodology of this research is structured into four main phases: data cleaning, data visualization, topic modeling, and pattern recognition.

In the data cleaning phase, a comprehensive dataset comprising observations covering the years 2005-2021 was compiled using Jupyter Notebook and Python, which consolidates 36,000 projects captured along 46 features. In the topic modeling phase, we focused on the narratives used by borrowers to describe their projects and the use they would do of the gathered financial support. Specifically, we considered the text borrowers wrote in the sections "Use" and "Description" of their project profile on the Kiva platform and created two string variables called the Use variable and the Description variable. The data underwent preprocessing, including frequency cut-off, coherence assessment using the "elbow method", and sensitivity analysis. Latent Dirichlet Allocation (LDA) was employed to extract meaningful topics from the data². This comprehensive dataset

² The Kiva dataset we could access was segmented into various components: (a) a CSV file (2005- 2010) with 219,337 entries and 26 variables, together with four XLSX files, detailing the "Use" and "Description" sections for each project; (b) a set of yearly CSV files (post-2010) each containing 26 variables,

structure facilitated a thorough examination of Kiva’s microlending data, offering significant insights into the evolving characteristics of borrowers, lenders, and loans, together with related trends over the years. Topic modeling, as defined by Blei (2012), is a clustering technique for identifying primary themes in textual data, widely applied in diverse fields like social sciences, economics, and social networks. Its adoption has significantly increased over the past decade, becoming a primary method for textual data analysis (Savin *et al.*, 2023). As Kim and Ju (2019) note, it may become pivotal in uncovering key concepts and tackling specific issues. In environmental studies, for example, topic modeling has been instrumental in exploring public views on climate change and pollution (Tvinnereim, *et al.*, 2017). We use it here precisely to uncover what borrowers decided to present their projects to potential lenders, making the topics they use to compose their narratives emerge directly from the texts they wrote. In this sense, topic modeling proves to be particularly suitable as a methodology for our purposes, as it is data-driven and does not impose any before the emerging topics, thus allowing us to capture the underlying narratives of the borrowers. We started our study by removing stopwords to define a word cloud to visualize the most common words in the Use variable. This visual representation highlighted terms like “buy”, “purchase”, “sell”, “business”, “fertilizer”, “pay”, “family”, “canned”, and “good”. The prevalence of these words suggested that the loans primarily support activities such as buying and selling goods, meeting family needs, and investing in agriculture or retail sectors (Figure 1, right panel). Unfortunately, the word cloud for the Description variable came out not as informative, as syntax formatting elements heavily influenced the identification of the most recurrent terms. Nonetheless, some emerging topics can still be identified, such as “business”, “loan”, “family”, “purchase”, “married”, “help”, “live”, and “future” (Figure 1, left panel). After this step, tokenization and lemmatization were also applied to both variables.

Fig. 1: Word Cloud for the Description variable (left) and Use variable (right)



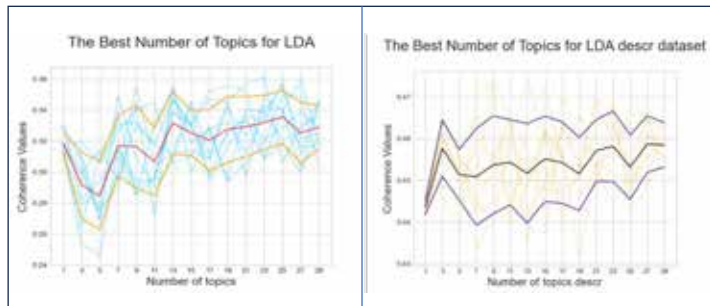
Source: our elaboration

with observations ranging from 100,000 to 230,000, supplemented by two to four XLSX files for the Use variable and Description variable. For instance, the 2011 dataset has 109,334 observations, split into two XLSX files. Finally, (c) we retrieved five XLSX files, covering Partners, Trustees, Activities, Sectors, and Countries. The Partners file has 563 entries and 18 variables; Trustees encompass 1511 entries and 2 variables. The Activities file includes 163 entries across 2 columns; the Sector file has 15 entries with 2 variables; and the Countries file showcases 98 entries with 2 variables.

Keeping in mind this difference, we employed various text preprocessing techniques to refine the data for applying topic modeling. First, we create a document-term matrix indicating the frequency of each word within the documents of interest. At this point, feature selection was a crucial step to improve the topic model's effectiveness by filtering out unique terms with low frequencies and common words that could obscure meaningful topic identification. Two approaches were evaluated: term frequency-inverse document frequency (TF-IDF) and frequency cutoff. The latter, modified to fit the data's characteristics (Jacobi *et al.*, 2018), seemed to be best suited for our purposes.

This simplified the Use variable analysis by omitting phrases exceeding 5000 in frequency, such as "buy", "purchase", and "sell", and those under 5000 but lacking contextual relevance, such as "etc", "will", and "additional". This approach improved the word list and created the dictionary and the corpus for model training. For the Description variable, the complexity increased due to the extensive textual data, the presence of personal and city names, and irrelevant adverbs, adjectives, and verbs. As implementing a frequency cut-off here was doomed to lead to imprecise results, modifications included removing short words (words less than three characters in length such as "him", "his", and "its") and adverbs. We employed the coherence method for both variables to evaluate the semantic consistency in the model (Gan, Qi, 2021). A line plot showed mean coherence values from 10 trials in a data frame. The 'elbow method' was used to identify the best number of topics, pinpointing where the coherence curve formed an elbow (Maithya *et al.*, 2022; Gurdiel, 2021). Figure 2's left panel displays the Use variable's outcome, while the right panel shows the Description graph.

Fig. 2: The Coherence Plot for the Use variable and the Description variable



Source: our elaboration

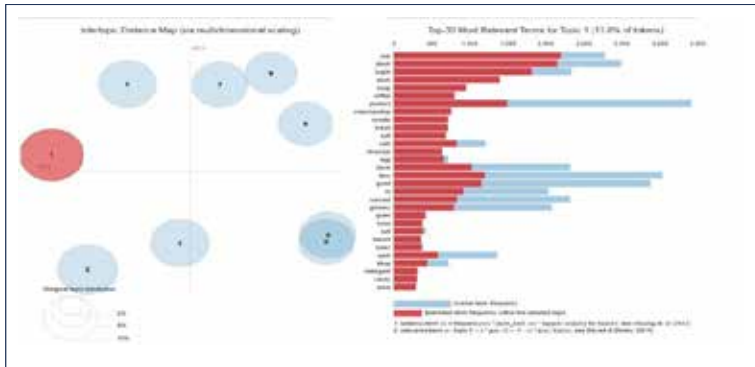
5. Results

Since the Description variable may include 3, 11, 15, 17, or 23 topics, we ran a sensitivity analysis to evaluate model results with varying topic counts. Sensitivity analysis helps understand how model parameters affect outcomes without concentrating on assumptions (Saltelli *et al.*, 2019). We used Latent Dirichlet Allocation (LDAvis) to identify document themes

using word co-occurrence patterns (Jacobi *et al.*, 2018), emphasizing on word patterns across topic counts. Topic consistency was crucial, including phrases that often co-occur and are related to the same subject (Chang *et al.*, 2009). Ideal lambda values were 0.6, which gave a 70% likelihood of recognizing topic-relevant phrases (Sievert and Shirley, 2014)³.

The sensitivity analysis we run, mixing evaluation of Consistency and human interpretation of resulting topics, led us to think that the optimal number of topics for the Use variable should be set at 9: 1-purchase, 2-farming, 3-investment, 4- trading, 5-family_expenses, 6-family_needs, 7-business, 8-improvement, 9- personal_activity. This organization of data provided a clear and structured understanding of the different themes present in the Use variable text. As an example, Figure 3 reports the results relative to topic 1 in terms of its inter-topic distance map with respect to the other topics (on the left) and the estimated frequency of words composing it (on the right).

Fig. 3: Inter-topic distance map and Top-30 most relevant terms for topic 1 - Use variable



Source: our elaboration

Addressing the same issue for the Description variable presented, however, interpretability challenges due to similar word frequencies and extensive textual content, a problem we intuitively anticipated in the preliminary investigation when picturing the word clouds⁴. We run a

³ However, the mathematical determination of topic numbers might not align with human interpretation, especially with a larger number of topics, as the algorithm might identify semantically irrelevant terms (Chang *et al.*, 2009). Despite setting a random state parameter, LDA's inherent randomness could shift words between topics across runs, impacting topic numbering. To ensure reproducibility, we saved multiple LDA model outputs using the "Joblib" library once parameters were set.

⁴ To overcome this, we leveraged the fact that loans not fully funded within 30 days on the website were considered expired. This information was used to identify the number of topics leading to topics' patterns with the highest explanatory power for determining a project's funding status. The intuition was that topics' patterns able to predict with the highest precision if a loan was finally funded or not were also those more meaningful to retain, given the aim of our study.

logit model to determine the risk of a project getting “expired” using loan status (financed or expired) as a dependent variable and possible subject combinations from the Use and Description variables as independent variables. The Use variable was fixed at 9 subjects, as per the analysis above, while the Description variable was decided using Coherence and the Elbow technique (3, 11, 15, 17, 23). Status and topic contributions from Use and Description variables were added to a data frame. For every subject number in the Description variable, the logit model was run five times in order to determine contributions. Given randomization, results from various models were stored using the “Joblib” package for repeatability. Table 1 shows that 15 was the optimal number of topics for the Description variable, with an R-squared of 0.04 and nine out of fifteen coefficients for Description and six out of nine for Use having p-values around or below 0.05 (Tab. 1).

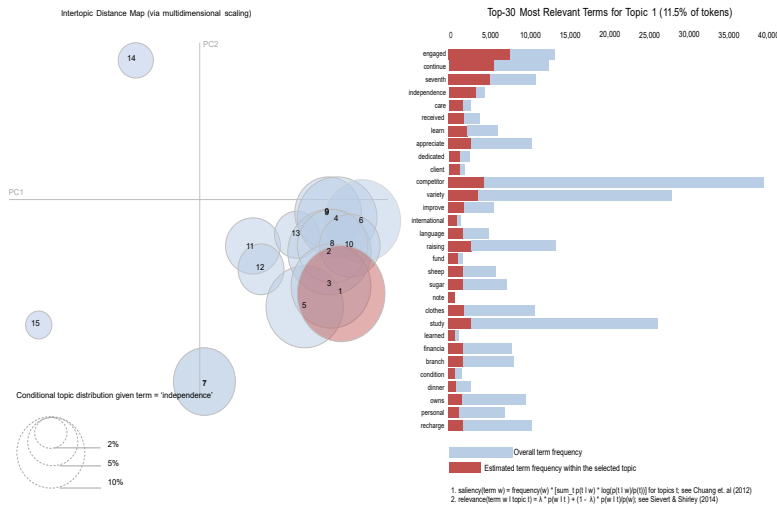
Tab. 1: Logit Model with 9 topics for Use and 15 topics for Description

Dep. Variable:	status	No. Observations:	36000
Model:	Logit	Df Residuals:	35975
Method:	MLE	Df Model:	24
Date:	Sun, 22 Jan 2023	Pseudo R-squ:	0,04083
Time:	20:13:51	Log-Likelihood:	-5959,7
converged:	True	LL-Null:	-6213,4
Covariance Type:	nonrobust	LLR p-value:	4,828e -92

	coef	std err	z	P> z	[0,025	0,975]
Const	0,8385	0,910	0,921	0,357	-0,945	2,622
topic_contribution_use_0	1,3953	0,868	1,608	0,108	-0,306	3,413
topic_contribution_use_1	1,7014	0,873	1,949	0,051	-0,010	3,413
topic_contribution_use_2	1,7890	0,879	2,036	0,042	0,067	3,511
topic_contribution_use_3	2,1727	0,877	2,479	0,013	0,455	3,891
topic_contribution_use_4	1,7888	0,882	2,028	0,043	0,060	3,517
topic_contribution_use_5	2,1264	0,878	2,422	0,015	0,406	3,847
topic_contribution_use_6	2,1315	0,874	2,438	0,015	0,418	3,845
topic_contribution_use_7	1,4489	0,873	1,659	0,097	-0,263	3,161
topic_contribution_use_8	1,0368	0,876	1,183	0,237	-0,681	2,754
topic_contribution_descr_0	0,6062	0,330	1,837	0,066	-0,041	1,253
topic_contribution_descr_1	2,4942	0,629	3,966	0,000	1,262	3,727
topic_contribution_descr_2	0,5913	0,322	1,833	0,067	-0,041	1,223
topic_contribution_descr_3	2,2876	0,345	6,637	0,000	1,612	2,963
topic_contribution_descr_4	1,2521	0,400	3,129	0,002	0,468	2,036
topic_contribution_descr_5	0,3183	0,335	0,951	0,342	-0,338	0,974
topic_contribution_descr_6	1,0946	0,343	3,189	0,001	0,422	1,767
topic_contribution_descr_7	5,1938	0,837	6,206	0,000	3,553	6,834
topic_contribution_descr_8	-0,0323	0,320	-0,101	0,920	-0,659	0,595
topic_contribution_descr_9	-0,1268	0,344	-0,369	0,712	-0,801	0,547
topic_contribution_descr_10	0,6859	0,440	1,558	0,119	-0,177	1,549
topic_contribution_descr_11	0,6029	0,332	1,818	0,069	-0,047	1,253
topic_contribution_descr_12	-0,2597	0,323	-0,804	0,421	-0,893	0,374
topic_contribution_descr_13	0,1311	0,333	0,393	0,694	-0,522	0,784
topic_contribution_descr_14	0,7101	0,408	1,742	0,082	-0,089	1,509

Consequently, the LDA model we implemented had 15 topics for the Description variable. To enhance interpretability and gain insights into the borrowers' backgrounds, the words within each topic bubble were manually identified in the original textual data. Observations with higher topic contributions were given more importance. Therefore, the assigned titles for each topic in the Description variable were: 1-face_difficulties, 2-entrepreneurship, 3-causes, 4-asking_for_loan, 5- retail, 6-progress, 7-borrowers_situation, 8-women_reasons, 9-financial_resources, 10-job, 11-procurement, 12-growth, 13-local_activity, 14-poverty, and 15- loyal_borrowers. Figure 4 depicts topic 1 providing (on the left) its inter-topic distance map with respect to the other topics and (on the right) the words composing it and their estimated frequency.

Fig. 4: Inter-topic distance map and Top-30 most relevant terms for topic 1 - Description variable



Source: our elaboration

Eventually, in order to address our research question, we moved to a final step and looked at the correlation between the 9 topics of the Use variable and the 15 topics of the Description variable as presented in the correlation matrix in Tables 2a, 2b, 2c, 2d and 2e.

As shown, the correlation matrix shows strong variable correlations. The literature study revealed links between certain themes, but these results also provide new insights. The highest correlations (greater than 0.2) were found in the section of the correlation matrix that shows the intersection between Use and Description. In the next section, we make sense of each of these Use-Description relationships, starting with those with the greatest connection. To interpret the correlated topics, we also reverted to the list of keywords linked with each theme.

Tab. 2a: Correlation Matrix between the 9 topics of the Use variable (in Italics) and the 15 topics of the Description variable (in Bold) - part 1

	Status	Purchase	Farming	Investment	Trading
status	1,00				
purchase	(-0,00)	1,00			
farming	0,01	(-0,14)	1,00		
investment	0,01	(-0,14)	(-0,13)	1,00	
trading	0,00	(-0,14)	(-0,12)	(-0,13)	1,00
<i>family_expenses</i>	(-0,01)	(-0,10)	(-0,08)	(-0,09)	(-0,11)
<i>family_needs</i>	0,01	(-0,15)	(-0,13)	(-0,16)	(-0,08)
<i>business</i>	0,02	(-0,15)	(-0,12)	(-0,09)	(-0,10)
<i>improvement</i>	(-0,01)	(-0,14)	(-0,15)	(-0,10)	(-0,14)
<i>personal_activity</i>	(-0,03)	(-0,15)	(-0,13)	(-0,13)	(-0,06)
<i>face_difficulties</i>	(-0,00)	(-0,10)	(-0,01)	0,19	0,05
<i>entrepreneurship</i>	0,02	(-0,07)	(-0,03)	(-0,07)	(-0,03)
<i>causes</i>	(-0,01)	0,05	0,04	(-0,01)	(-0,08)
<i>asking_for_loan</i>	0,06	0,22	0,15	(-0,11)	(-0,13)
<i>retail</i>	0,01	0,02	(-0,03)	(-0,03)	0,02
<i>progress</i>	(-0,02)	0,27	(-0,10)	(-0,10)	(-0,09)
<i>borrowers_situation</i>	0,02	(-0,11)	(-0,14)	0,46	(-0,11)
<i>women_reasons</i>	0,03	(-0,08)	(-0,08)	(-0,01)	(-0,06)
<i>financial_resources</i>	(-0,04)	(-0,08)	(-0,08)	0,01	(-0,03)
<i>job</i>	(-0,03)	(-0,07)	0,06	(-0,06)	0,07
<i>procurement</i>	0,00	(-0,08)	(-0,07)	(-0,04)	0,30
<i>growth</i>	(-0,01)	0,08	0,01	(-0,02)	0,11
<i>local_activity</i>	(-0,05)	(-0,13)	(-0,12)	(-0,12)	0,22
<i>poverty</i>	(-0,02)	(-0,10)	0,21	(-0,11)	(-0,02)
<i>loyal_borrowers</i>	0,00	(-0,07)	0,08	(-0,05)	0,04

Tab. 2b: Correlation Matrix between the 9 topics of the Use variable (in Italics) and the 15 topics of the Description variable (in Bold) - part 2

	Family expenses	Family needs	Business	Improvement	Personal activity
<i>family_expenses</i>	1,00				
<i>family_needs</i>	(-0,12)	1,00			
<i>business</i>	(-0,12)	(-0,14)	1,00		
<i>improvement</i>	(-0,16)	(-0,17)	(-0,11)	1,00	
<i>personal_activity</i>	(-0,12)	(-0,08)	(-0,11)	(-0,16)	1,00
<i>face_difficulties</i>	(-0,04)	(-0,08)	0,06	0,01	(-0,06)
<i>entrepreneurship</i>	(-0,07)	0,43	(-0,07)	(-0,07)	(-0,04)
<i>causes</i>	0,21	(-0,02)	(-0,07)	(-0,08)	(-0,02)
<i>asking_for_loan</i>	(-0,14)	(-0,09)	0,10	0,07	(-0,13)
<i>retail</i>	(-0,04)	0,03	0,08	(-0,03)	(-0,00)
<i>progress</i>	0,39	(-0,06)	(-0,09)	(-0,13)	(-0,09)
<i>borrowers_situation</i>	(-0,06)	(-0,13)	0,05	0,14	(-0,11)
<i>women_reasons</i>	(-0,07)	(-0,05)	(-0,08)	(-0,08)	0,53
<i>financial_resources</i>	(-0,11)	(-0,12)	0,06	0,40	(-0,10)
<i>job</i>	0,16	(-0,00)	0,01	(-0,08)	(-0,06)
<i>procurement</i>	(-0,05)	(-0,01)	0,05	(-0,05)	(-0,02)
<i>growth</i>	0,05	(-0,08)	(-0,07)	(-0,04)	(-0,04)
<i>local_activity</i>	(-0,09)	0,14	(-0,08)	(-0,13)	0,37
<i>poverty</i>	(-0,05)	0,31	(-0,07)	(-0,12)	(-0,06)
<i>loyal_borrowers</i>	(-0,05)	(-0,03)	0,09	(-0,04)	0,04

Tab. 2c: Correlation Matrix between the 9 topics of the Use variable (in Italics) and the 15 topics of the Description variable (in Bold) - part 3

	Face difficulties	Entrepreneurship	Causes	Asking For loan	Retail
face_difficulties	1,00				
entrepreneurship	(-0,05)	1,00			
causes	(-0,11)	(-0,06)	1,00		
asking_for_loan	(-0,17)	(-0,07)	(-0,17)	1,00	
retail	(-0,04)	(-0,04)	(-0,06)	(-0,08)	1,00
progress	(-0,09)	(-0,05)	0,01	(-0,12)	(-0,05)
borrowers_situation	(-0,06)	(-0,07)	(-0,10)	(-0,15)	(-0,05)
women_reasons	(-0,06)	(-0,02)	(-0,07)	(-0,08)	(-0,04)
financial_resources	(-0,05)	(-0,06)	(-0,15)	(-0,16)	(-0,05)
job	(-0,04)	(-0,05)	(-0,06)	(-0,14)	(-0,04)
procurement	0,00	(-0,02)	(-0,07)	(-0,10)	(-0,02)
growth	(-0,08)	(-0,06)	(-0,09)	(-0,18)	(-0,06)
local_activity	(-0,08)	(-0,05)	(-0,09)	(-0,16)	(-0,04)
poverty	(-0,09)	(-0,01)	(-0,06)	(-0,15)	(-0,05)
loyal_borrowers	(-0,03)	(-0,01)	(-0,09)	(-0,10)	(-0,04)

Tab. 2d: Correlation Matrix between the 9 topics of the Use variable and the 15 topics of the Description variable (progress - job) - part 4

	Progress	Borrowers Situation	Women reasons	Financial Resources	Job
progress	1,00				
borrowers_situation	(-0,10)	1,00			
women_reasons	(-0,04)	(-0,02)	1,00		
financial_resources	(-0,13)	(-0,04)	(-0,08)	1,00	
job	(-0,04)	(-0,09)	(-0,06)	(-0,07)	1,00
procurement	(-0,07)	(-0,05)	(-0,04)	(-0,04)	0,06
growth	(-0,04)	(-0,07)	(-0,07)	(-0,06)	(-0,03)
local_activity	(-0,11)	(-0,13)	(-0,05)	(-0,10)	(-0,05)
poverty	(-0,08)	(-0,12)	(-0,07)	(-0,11)	0,02
loyal_borrowers	(-0,05)	(-0,07)	0,02	0,01	(-0,04)

Tab. 2e: Correlation Matrix between the 9 topics of the Use variable and the 15 topics of the Description variable (progress - job) - part 5

	Procurement	Growth	Local activity	Poverty	Loyal Borrowers
procurement	1,00				
growth	(-0,02)	1,00			
local_activity	0,01	(-0,06)	1,00		
poverty	(-0,05)	(-0,02)	(-0,07)	1,00	
loyal_borrowers	(-0,02)	(-0,00)	(-0,02)	(-0,05)	1,00

5.1 Description of the topics

Overall, our findings provide valuable insights to explore and understand the narratives behind each project. In the next paragraphs, we examine how these connections combine these different elements into specific narratives.

5.1.1 The link between women entrepreneurs and personal reasons for engaging in business activities

The correlation between the topics “women_reasons” - “personal_activity” is the highest in the whole matrix in Table 2 (0,53). This may be because women seek microloans for personal business operations, demonstrating their yearning for freedom. In the Global South, microloans boost women economically, making this development significant. Microloans help women to establish or grow businesses and achieve economic independence. Effective microfinance programs must recognize this tendency to provide services to women entrepreneurs. Women’s micro-entrepreneurship has substantial socioeconomic impacts. Empowered women boost their finances and local economies. Their business success may provide jobs and communities. Women prefer microloans for personal use, highlighting the need for gender-responsive financial services. We can foster a more inclusive and sustainable Global South economy by supporting women-led enterprises and advancing social and economic progress.

5.1.2 Borrowers’ institutional factors and their influence on investment decisions

Borrowers in crowdfunding campaigns understand the importance of effective communication, crucial to attract investors’ attention and support (represented by the correlation between the topics “borrowers_situation” - “investment” - value 0,46). This involves creating a narrative about their entrepreneurial path, financial condition, and future goals to demonstrate their businesses’ sustainability and potential. These businesses know that in the competitive crowdfunding market, project differentiation is crucial. They give a clear value proposition to supporters, portraying their firm as an appealing investment that matches their beliefs. Effective communication entails communicating a vision and generating investor trust, not merely project information. Borrowers openly discuss risks and issues and provide solutions. This proactive approach to identifying possible difficulties and solutions develops investor confidence, which is crucial for crowdfunding campaign success.

5.1.3 The impact of financial resources on business improvement initiatives among borrowers

The focus of certain borrowers on allocating financial resources towards improving their products or services (identified by the nexus “financial_resources - improvement” - value 0,40) exposes the crucial role of incremental improvement in entrepreneurship. These borrowers know they must update their products to satisfy changing client demands to stay competitive. This shows an entrepreneurial attitude that prioritizes company improvement and innovation. Continuous improvement and adaptability represent a fundamental entrepreneurial principle: success derives from learning and strategic development. The priority of financial

resources for product or service enhancement shows entrepreneurial techniques and mentality. Understanding and supporting these aims helps microfinance ecosystem stakeholders promote entrepreneurial enterprises, boosting economic and social success.

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5.1.4 The influence of family responsibilities on business ventures

The study reveals a strong link between starting businesses and meeting family needs (as identified by the couple “entrepreneurship - family needs” - value 0,43), showing the deep connection between family and entrepreneurial activities in microenterprises, especially in the Global South. This relationship may represent cultural values of family and communal well-being. Business money typically supports education, healthcare, and housing, improving family quality of life. Entrepreneurship combined with family needs can break poverty cycles and generate opportunity. Microfinance stakeholders need this comprehensive approach to entrepreneurship that integrates personal ambitions with family and community development. Recognizing borrowers’ family-oriented aims allows microfinance organizations to customize financial assistance to life goals, including family well- being.

5.1.5 Relationship between family expenses and entrepreneurial progress

The study finds that borrowers prioritize family expenses to improve living conditions, reflecting a commitment to enhancing their families’ well-being (tagged as “family_expenses - progress” - value 0,39). Microloans help borrowers satisfy basic requirements and invest in quality of life. Here, education may be a considerable investment. Borrowers often finance tuition and educational resources because they know education will change their children’s lives. This education investment promotes long-term family development, increasing wages and social mobility. Human capital investment is crucial to socioeconomic growth and eliminating community inequality. Borrowers’ family spending shows their commitment to ending poverty and improving their families’ futures. Family costs and job investments are also linked. Borrowers value income and job development for family support. Small company investments and productivity resources seek to safeguard the family’s financial future.

5.1.6 The influence of business advancement on procurement and trading in local activities

We find that borrowers often use loans to purchase goods, reflecting a strategic approach to business development and market demand (identified by the couple “progress - purchase” - value 0,27; “procurement - trading” - value 0,30). This product’s investment improves operations and meets consumer requirements. Buying items replenishes inventory, helping borrowers reach more customers and grow market share. This increases sales and competition. It also lets borrowers explore new markets and diversify income to respond to market movements and growth

prospects. In trading, loan money is utilized to buy and sell items, showing business and market understanding. This method increases revenue and profit. Borrowers see purchasing items as a critical stage in company growth. New or enhanced items boost offers and growth. The borrowers' entrepreneurial attitude, responsiveness to market needs, and devotion to business potential are essential for their success as micro-entrepreneurs in their communities.

5.1.7 The impact of socioeconomic constraints on household well-being

Our results highlight the profound impact of poverty on family needs in developing countries, where high poverty rates hinder access to basic resources (identified as “poverty - family_needs” - value 0,31). Microloans support borrowers to meet basic necessities and avoid poverty. Loans are utilized for housing, clean water, sanitation, education, and healthcare to enhance family life. Poverty includes financial hardship and social and economic barriers including limited education, healthcare, and employment. Microloans ease these limits. Microfinance institutions are very important for helping people who can't get financial services from normal banks. Microloans help people pay for basic needs, start businesses that make money, and get ahead financially. These programs contribute to community development and poverty alleviation. This category highlights the relationship between poverty and family needs and microloans' role in helping borrowers overcome current obstacles and improve their future.

5.1.8 The interplay between economic hardship and agricultural livelihoods

The study highlights the critical role of agriculture in impoverished communities, where it is often the main source of income and way to make a living (we refer here to the “poverty-farming” correlation - value 0,21). Farmers in these situations suffer capital and technical constraints that reduce their production and capacity to overcome poverty. These communities need targeted help like finance access and sustainable agricultural training to enable farmers to boost production and well-being. Agriculture investments boost food security, employment creation, economic development, and environmental sustainability. In developing nations, smallholder farmers make up a substantial percentage of the agricultural labor, thus their demands must be met. Customized financial services, technological assistance, and market access boost productivity and quality of life. Agricultural entrepreneurship, innovation, technology adoption, and value-added activities are crucial. These measures assist subsistence farmers become profitable farmers, enhancing income and resistance to economic challenges.

6. Discussion

Analyzing the eight categories of loan purposes provided, we can recognize a few key elements that offer valuable insights into the

characterization of purpose-driven crowdfunding from a theoretical perspective. These elements highlight the intricate relationships between borrowers' narratives, socioeconomic factors, and their entrepreneurial activities. By examining these categories, we can outline the following critical dimensions for discussion:

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6.1 Narratives based on the interplay between personal motivations and entrepreneurial activities

This first category of narratives focuses on the relationship between entrepreneurs and their personal reasons for starting a business, as well as the impact of family responsibilities on business ventures, emphasizing the deeply personal nature of entrepreneurial motivations in the context of purpose-driven crowdfunding. The relationship between women entrepreneurs' personal motives for starting a firm and their family responsibilities highlights the importance of the family, but also of the emancipatory role entrepreneurship can have for women, allowing them to pursue also their personal goals and not only be relegated within the boundaries of family responsibilities. This conclusion is consistent with the theoretical viewpoints of narratives as able to link borrowers and lenders on the basis of the personal situations of the former, thus triggering empathy -and thus intrinsic motivation (Tajvarpour and Pujari, 2022; Cappa *et al.*, 2021)- on the side of the latter, stressing the emancipatory role of entrepreneurship. Purpose-driven crowdfunding arises from the recognition that personal situations of borrowers and support by lenders are critical components of entrepreneurial initiatives.

6.2 Socioeconomic factors influencing entrepreneurial activities

Categories such as the impact of financial resources on business success and the effect of socioeconomic limitations on family well-being highlight the importance of external economic factors in affecting entrepreneurial activity. From a theoretical aspect, this stimulates debates on the resource-based view (RBV) and dependency theory, with an emphasis on how access to financial resources and current socioeconomic circumstances promote or impede entrepreneurial development and innovation. These narratives leverage the sense of duty of lenders (linked to the duty-based purpose defined by George *et al.*, 2023), who may decide to finance these projects triggered by the gap between their accessibility to resources and the lack of it on the side of the borrowers. So, purpose-driven crowdfunding becomes an important way for entrepreneurs to get the money they need, especially in places where there is economic inequality and limited access to traditional financing sources, which makes the gap between lenders' and borrowers' resources bigger.

6.3 Resilience and adaptation in the face of economic poverty.

The categories describing the link between economic hardship and agricultural livelihoods, as well as the influence of family spending and

financial commitments on company development, highlight entrepreneurs' resilience and adaptive ways for managing hurdles. This is theoretically related to the notions of entrepreneurial resilience and adaptive capacity, which investigate how people and firms deal with economic constraints and adversity. This component of purpose-driven crowdfunding mirrors a larger narrative of empowerment, in which crowdfunding is used not just as a financial instrument, but also as a method of social and economic resilience, supported by lenders' intrinsic motivations (Tajvarpour and Pujari, 2022; Cappa *et al.*, 2023) and social mission (Berns *et al.*, 2020).

Summarizing, purpose-driven crowdfunding is a crowdfunding model that links personal motivations with socioeconomic dynamics to foster entrepreneurial activities, emphasizing intrinsic motivation, social capital, and resilience against economic challenges. Based on the empirical identification of three principal categories that characterize the linguistic description of projects, our analysis reflects how borrowers narrate their ideas to the lenders, giving depth to this model serving as a catalyst for social and economic empowerment.

7. Conclusion and implications

Throughout the study, we have seen that purpose-driven crowdfunding such as Kiva can create an enabling environment that fosters entrepreneurship, supports individual aspirations, drives business improvement, recognizes the role of the family, promotes strategic approaches, addresses socioeconomic constraints, and supports agricultural initiatives. These actions have the potential to foster inclusive growth, reduce poverty, and contribute to sustainable development in various contexts, ultimately benefiting individuals, communities, and society as a whole.

As discussed in the previous section, our findings related to the narratives used in purpose-driven crowdfunding contribute to the literature by providing some theoretical implications. In particular, narratives (Tajvarpour and Pujari, 2022; Cappa *et al.*, 2021) used in purpose-driven crowdfunding prove to be key for mobilizing lenders leveraging their empathy for the personal situations of borrowers, or their sense of duty (George *et al.*, 2021) in the face of borrowers' lack of resources and need for resilience. This capability of narratives shows that in purpose-driven crowdfunding intrinsic motivations (Allison *et al.*, 2015; Cappa *et al.*, 2023) of lenders are not simply one among many motivations, but implies that scholars need to consider them more carefully, investigating the antecedents not only on the lenders' side, but in connection with the borrowers and the way the latter convey their situations by their projects' narratives. Our work provides also some managerial implications. Indeed, understanding the narratives behind purpose-driven crowdfunding enables the crafting of more effective campaign designs, the development of storytelling strategies, and the creation of financial instruments tailored to boost entrepreneurial growth by stimulating the intrinsic motivations of lenders. This insight not only enhances the engagement and success rates

of crowdfunding initiatives but also ensures the alignment of financial support with the deeper socioeconomic objectives of entrepreneurs, thereby fostering a more inclusive and impactful ecosystem for innovation and development.

Finally, this work also has contributed on the discussion on Grand Challenges (Nambisan and George, 2024), as it has placed at the center of the stage the nexus between innovative methods of solutions to long-seated problems, such as social finance and social innovation, with purpose-driven business, highlighting the key role of intrinsic motivations and thus the relevance of what George *et al.* (2021) call “duty-based purpose” for tackling societal issues. We presented a picture in which narratives create bonds between lenders and borrowers, stimulating the former’s willingness to finance social projects that can alleviate problems such as poverty, inequality and environmental protection. In other words, the importance of narratives as triggers that can stimulate lenders’ intrinsic motivations can generate a multiplier that supports virtuous solutions to long-seated problems such as purpose-driven crowdfunding. Keeping this in mind can help to imagine new ways to design and conceive platform based social innovations, adding a new tool to the toolbox mobilized to solve the most pressing social issues.

This paper, while providing valuable insights into purpose-driven crowdfunding, is subject to several limitations. Primarily, our analysis is restrained to data from a single platform, which underlines the need for future research to conduct comparative analyses across multiple platforms. As a second step, it is essential to measure the impact of identified characteristics of purpose-driven crowdfunding on the amount invested and other relevant variables commonly used in literature to gauge campaign success. Such activities will not only enrich our understanding of the dynamics of purpose-driven crowdfunding but also contribute to the development of more effective strategies for campaign design and execution.

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italian journal of management

ISSN print 0393-5108
ISSN online 2785-549X
DOI 10.7433/s126.2025.06
pp. 121-143

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