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Empathy in action: unravelling crowdfunding dynamics for female refugee entrepreneurs in Lebanon, Jordan, and Palestine

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ABSTRACT

Crowdfunding has become a vital tool for bridging funding gaps, particularly for marginalised groups such as women and refugee entrepreneurs. This study aims to investigate the impact of entrepreneur gender and sectorial dominance on crowdfunding outcomes for female and male refugees, using the lens of sector studies and Role Congruity Theory. To empirically test our hypotheses, we gathered data about refugee entrepreneurs who seek capital for their business ventures on the Kiva crowdfunded microfinance platform. Our research highlights the unique challenges faced by female refugee entrepreneurs, including discriminatory financing practices and lack of formal documentation. However, crowdfunding platforms like Kiva offer crucial financial access, outperforming traditional financial institutions. We found that female refugee entrepreneurs often outperform their male counterparts in crowdfunding, especially in male-dominated activities. Moreover, campaigns located in refugee camps show positive crowdfunding outcomes, emphasising the value of these settings for women-led initiatives. Overall, crowdfunding offers a promising alternative for female refugees, overcoming significant barriers to entrepreneurship in both refugee camps and broader contexts, as well as providing implications for enhancing financial inclusion and supporting gender equity in entrepreneurial spaces.

1. Introduction

The global refugee crisis has displaced over 37.9 million people, highlighting an urgent need for inclusive poverty-alleviation strategies (UNHCR, 2024a). Periods of war, famine, and political instability often force individuals to flee, becoming refugees—defined as people unable to return to their country due to persecution, conflict, or violence (UNHCR, n.d.). For many, entrepreneurship becomes a necessity-driven pathway for survival and socio-economic integration (Backman, Lopez, & Rowe, 2021; Al-Dajani et al., 2019). In low-income settings, microfinance, both traditional and crowdfunded, has emerged as a vital tool to support such entrepreneurial activities (Bruton et al., 2015; Doering & Wry, 2022). While microfinance is often celebrated for its role in empowering marginalized entrepreneurs, particularly women (Braná, 2013; Ault, 2016), research shows mixed results. Traditional microfinance and crowdfunded microfinance provide initial capital, but crowdfunding campaigns often generate only modest funding and limited long-term sustainability (Embiricos, 2020). Furthermore, the

literature has yet to fully capture how refugees, especially women, finance ventures in contexts where access to capital is severely constrained (Greenberg, 2019; Parhankangas & Colbourne, 2023).

Gender dynamics are central to this discussion. Crowdfunded microfinance has been shown to benefit women disproportionately in some contexts (Figueroa-Armijos & Berns, 2022), reflecting long-standing efforts to advance female entrepreneurship in the face of financing barriers (Cumming et al., 2021; Kabeer, 2001). Yet, female refugee entrepreneurs face unique constraints. Studies reveal that they are less likely to be fully funded than non-refugee women (Emanuel-Correia et al., 2022), suggesting that the intersection of gender and refugee status creates additional barriers to financial inclusion. This discrepancy exposes a persistent gap in understanding the mechanisms that shape female refugees' entrepreneurial financing opportunities (Desai et al., 2021).

Despite growing interest in crowdfunding and refugee entrepreneurship, key gaps remain. First, most research focuses on aggregate gender differences in fundraising outcomes (Parhankangas &

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Colbourne, 2023) without considering how the nature of the entrepreneurial activity, such as whether it belongs to a male- or female-dominated sector, shapes performance. Research in organizational psychology suggests that women in male-dominated sectors face greater bias and stress (Gardiner & Tiggemann, 1999), but its implications for crowdfunding remain largely unexplored (Micelotta, Washington, & Docekalova, 2018). Second, geographic location, while central to refugee entrepreneurship, has been largely overlooked in online microfinance studies. Although Agrawal (2011) found that physical distance may not affect crowdfunding investments, the role of refugee camp locations in moderating gendered financing outcomes has not been systematically examined (Kachkar, 2019; Shepherd et al., 2020). These gaps perpetuate the decontextualization of entrepreneurship studies in fragile and conflict-affected settings (Al-Dajani, 2022).

This study addresses these gaps by investigating how gender, sectorial dominance (male- vs. female-dominated activities), and refugee camp location interact to shape crowdfunding outcomes for refugee entrepreneurs. Drawing on Role Congruity Theory and sector studies in entrepreneurship and crowdfunding (De Massis et al., 2018), we examine four key outcomes: funding success, total amount funded, funding speed, and the number of backers. We also test whether gender moderates the relationship between sectorial dominance and crowdfunding outcomes and explore how refugee camp locations influence gender-based disparities in entrepreneurial financing.

Our contribution is threefold. First, we provide the first empirical analysis of gendered sector dynamics in refugee crowdfunding, revealing potential hidden discrimination in online microfinance platforms. Second, we integrate geographic context into the study of refugee entrepreneurship, responding to calls for a more spatially aware approach. Finally, our research contributes to policy and practice by highlighting how crowdfunding platforms can better serve female refugee entrepreneurs, particularly those in camp settings, by addressing sector- and location-based inequities. By doing so, we advance the literature on refugee entrepreneurship, gendered finance, and alternative microfinance while informing strategies to promote financial inclusion for some of the world's most marginalized entrepreneurs.

The following sections begin with a review of the literature on crowdfunding and gendered entrepreneurship, where we also develop our hypotheses. We then describe our methodology and data collection procedures, followed by the presentation and discussion of our results. Finally, we conclude with a summary of our findings, acknowledge the study's limitations, and propose avenues for future research.

2. Theoretical background and hypotheses development

2.1. Crowdfunded microfinance and gendered entrepreneurship

Recent conflicts, including the invasions of Ukraine and Palestine, have generated one of the largest forced displacements since World War II, uprooting nearly twelve million individuals from their homes (UNHCR, 2024b). Women and girls constitute approximately half of the global refugee population (UNHCR, 2020), yet they remain disproportionately vulnerable to marginalisation, violence, and exclusion across education, healthcare, employment, and decision-making spheres (UN Women, 2020). Within these constrained environments, entrepreneurship has been framed as a pathway to economic empowerment and social resilience for refugee women, enabling income generation and some degree of autonomy (Al-Dajani et al., 2019; Al-Dajani et al., 2015; Alkhaled & Sasaki, 2022; Gultekin et al., 2024; Junaid & Jurado, 2024). However, the gendered experiences of refugee entrepreneurs remain underexplored, particularly regarding their financial constraints, use of crowdfunding, and specific entrepreneurial needs (Adeeko & Treanor, 2022; Senthana et al., 2021; Desai et al., 2021).

Feminist entrepreneurship literature critiques the systemic inequalities that constrain women's access to finance, illustrating how entrenched gender norms and institutional biases reproduce exclusion

(Treanor & Marlow, 2025). For refugee women, these barriers are compounded by intersectional disadvantage: entrepreneurship is shaped not only by gendered discrimination but also by the legal precarity and economic marginalisation associated with forced displacement (Adeeko & Treanor, 2022; Al-Dajani et al., 2019). The COVID-19 pandemic further deepened this intersectional disadvantages. It magnified pre-existing gender inequalities, disproportionately affected informal employment on which refugee women rely, and restricted access to in-person support and financial services (Abuhussein, 2023). At the same time, it accelerated the shift toward digital entrepreneurship and online microfinance, making crowdfunding platforms an increasingly critical—yet unevenly accessible—mechanism for survival and recovery (Bertoni et al., 2021; Kacer et al., 2025). Fisch et al. (2022) propose “financial democracy” as a principle to promote equitable access to finance for underrepresented entrepreneurs. Yet, in practice, this remains more aspirational than actual, as access to finance, even via alternative mechanisms, continues to privilege those with pre-existing social, digital, and cultural capital (Calic et al., 2024; Li et al., 2025).

Microfinance as a sector has historically been biased in favour of female borrowers, based on evidence that women tend to repay loans more reliably and are perceived as lower risk by lenders, which has influenced targeted lending programs and shaped gender dynamics in financing (D'Espallier, Guérin, & Mersland, 2011; Agier & Szafarz, 2013). This structural bias frames the context in which crowdfunded microfinance operates and must be considered when evaluating gender differences in crowdfunding outcomes. Crowdfunding is often celebrated as a democratising tool that can lower entry barriers, reduce fundraising costs, and connect entrepreneurs with diverse and socially motivated investors (Butticè & Vismara, 2022; Cumming et al., 2021). Some studies suggest that female entrepreneurs can benefit from the meritocratic aspects of crowdfunding, where engagement with a broad investor base can mitigate gender bias and encourage female participation both as funders and founders (Greenberg & Mollick, 2017; Johnson et al., 2018; Gafni et al., 2021). Evidence from crowdfunded microfinance further highlights a “female advantage”, with women's loan campaigns achieving higher success rates, faster funding, and better repayment performance than those of men (Chen et al., 2017; Figueroa-Armijos & Berns, 2022; Gafni et al., 2021,). Platforms like Kiva exemplify this dynamic, having facilitated over US\$1 billion in loans to women over the past fifteen years (Kiva, 2023).

Yet, the gendered story of crowdfunded microfinance is not unequivocally empowering. Female entrepreneurs, including refugees, often secure smaller loan amounts than men (Quigley & Patel, 2022), reflecting persistent credit discrimination and structural inequalities echoed in traditional microfinance. As D'Espallier, Guerin, and Mersland (2011) note, women “pay better but cost more” (p. 590), partly due to smaller loan sizes, differing credit conditions, and higher administrative costs for lenders. Although women's higher repayment rates and lower mobility reduce risk for lenders (D'Espallier et al., 2011), these same gendered conditions perpetuate their confinement to micro-scale financing rather than facilitating scalable, growth-oriented entrepreneurship (Agier & Szafarz, 2013). In refugee contexts, these dynamics are intensified and, post-COVID, increasingly mediated by digital divides: women face compounded exclusion from both mainstream finance and digital crowdfunding ecosystems, where visibility, trust-building, and narrative appeal are critical for success (Saluja, 2024; Wang et al., 2023). This suggests that crowdfunded microfinance, while potentially gender-inclusive, may also replicate offline inequalities in digital form. Given the limited research on the entrepreneurial and financial needs of refugee women (Desai et al., 2021), this study seeks to critically examine how gendered dynamics shape their access to and outcomes in crowdfunded microfinance.

2.2. MFIs focused on refugees

Microfinance Institutions (MFIs) focused on refugees are typically

defined as organizations that design financial products and outreach specifically for refugees or forcibly displaced populations, aiming to facilitate their economic inclusion and resilience (Desai et al., 2021). These MFIs often adapt their lending strategies, risk assessment, and non-financial services to address the unique circumstances of refugee clients who may lack traditional collateral, legal residency, or credit history (Kachkar, 2019; de la Chaux & Haugh, 2020).

Refugee entrepreneurs face distinct challenges compared to non-refugee entrepreneurs. Unlike many local microentrepreneurs, they are systematically excluded from traditional financial institutions due to documentation requirements (e.g., lack of recognised ID, proof of residency, credit history), regulatory obstacles (such as Know Your Customer-KYC compliance), and risk profiling that treats refugee status itself as inherently high-risk (Migration Policy Institute, 2024; AFI Global, 2024). Entrepreneurship for refugees, therefore, often occurs within a constrained immigration context, where legal, regulatory, and institutional barriers limit full economic and social integration, resulting in what Refai, Lever and Haloub (2024) describe as *liminal integration*, a state of “in-between” belonging that reflects economic, social, and psychological dimensions of displacement.

Microfinance represents one of the few viable formal channels for refugee entrepreneurs to access capital for business formation and livelihood diversification (Abebe, 2023; Newman et al., 2024). Yet the refugee context is heterogeneous, and access to credit varies greatly across populations and settings. In some refugee contexts, particularly in Muslim-majority displacement environments, MFIs employ Islamic finance mechanisms such as *waqf*-based collateral-free lending¹—Islamic endowments for charitable purposes—to extend microfinance to refugee microentrepreneurs (Pericoli, 2025). These mechanisms not only reduce financial risk but also align with cultural and religious practices, thereby contributing to both social and economic resilience (Kachkar, 2017). Empirical research also indicates that support from MFIs helps overcome language barriers and bureaucratic obstacles, fostering social inclusion and self-reliance among refugee entrepreneurs (Embricos, 2020). In Bangladesh, the Rohingya refugee crisis exemplifies a scenario less defined by microfinance innovation and more by a persistent paradox: long-standing struggles with failed repatriation efforts and contested relocation initiatives. Empirical evidence reveals that most Rohingyas prioritize dignified return, seeking legal recognition and social safety over local economic programs (Uddin, 2024).

Despite these interventions, access to credit remains uneven across refugee populations. Women often encounter additional barriers, including discriminatory lending criteria and a lack of collateral, which restrict their ability to obtain loans (Al-Dajani et al., 2015; Bhagat and Roderick, 2020). These challenges are further complicated by gendered expectations, social norms, and the need to navigate both home- and host-country institutional pressures (Althalathini & Abdul-Rahman, 2025). Geography also plays a critical role, as refugees in camp-based settings experience greater exclusion than those in urban environments, due both to limited institutional presence and risk-averse lending practices (Shepherd et al., 2020). Nationality and legal status further shape access, with Palestinian and Syrian refugees in Lebanon and Jordan facing differentiated legal and institutional barriers that affect their creditworthiness and engagement with formal microfinance (Bhagat & Roderick, 2020; Zighan, 2021).

Furthermore, the capacity of MFIs is often constrained by limited resources, regulatory uncertainties, and insufficient market knowledge, which collectively hinder effective service delivery to refugees (Bhagat & Roderick, 2020). To address these gaps, alternative financing mechanisms have emerged. Community-based lending circles, such as

Rotating Savings and Credit Associations (ROSCAs), leverage refugee social networks and ethnic ties to extend collateral-free credit outside formal financial systems, providing a vital safety net for those unable to access traditional banking services (Easton-Calabria & Hakiza, 2021). Informal money transfer mechanisms such as the hawala system remain widely used by refugees and migrants due to accessibility, affordability, and reliability in remittance transfers, despite their potential misuse (UNODC, 2023). Additionally, hybrid models supported by international NGOs, combining grants, business training, and MFI partnerships, offer tailored support in protracted refugee settings, bolstering financial resilience (AFI Global, 2024). Lastly, digital crowdfunding platforms, such as Kiva, have gained prominence by mobilizing global micro-investors motivated by prosocial motives. These platforms provide refugees, particularly those in camps with limited formal institutional access, with a vital avenue to obtain capital while sidestepping infrastructure and regulatory barriers endemic to host country systems (Gama et al., 2023; Parhankangas & Colbourne, 2023).

This study examines crowdfunded microfinance as a critical alternative financing channel addressing institutional gaps where traditional MFIs and informal credit sources prove insufficient. By leveraging global lender networks motivated by prosocial objectives, crowdfunding platforms can provide refugee entrepreneurs with financial access while circumventing the barriers that systematically exclude them from conventional finance.

2.3. Hypothesis 1: Female refugee campaign performance in crowdfunded microfinance

Crowdfunding has been positioned as a mechanism that can mitigate systemic bias in entrepreneurial finance and expand access for under-represented groups (Younkin and Kuppuswamy, 2018). Unlike traditional finance, where women frequently face structural barriers—including smaller loan sizes, higher collateral requirements, and implicit discrimination (Agier & Szafarz, 2013; D’Espallier et al., 2011), crowdfunding engages dispersed funders whose decisions are often shaped by prosocial motives, empathy, and social identification with marginalized entrepreneurs. Empirical evidence from rewards-based crowdfunding shows a consistent female advantage, where women achieve higher campaign success rates, particularly for socially oriented and community-focused ventures (Allison et al., 2017; Cowden et al., 2021; Greenberg and Mollick, 2017).

Crowdfunded microfinance platforms, such as Kiva, extend this dynamic to loan-based models. Female borrowers often experience higher funding rates and faster campaign completion times than men, reflecting funders’ perceptions of women as trustworthy, reliable, and lower-risk borrowers (Gafni et al., 2021; D’Espallier et al., 2011). For refugee women, these gendered dynamics may be amplified by the intersectionality of gender and displacement status, which can elicit heightened empathy and prosocial support from funders (Kuppuswamy and Bayus, 2017). In the context of COVID-accelerated digitalisation, where visibility and storytelling are critical to online finance, this intersection may strengthen female refugee entrepreneurs’ relative appeal to micro-investors (Alva et al., 2023; Saluja, 2024).

While female refugee entrepreneurs remain excluded from formal finance, crowdfunded microfinance offers a comparatively more equitable and opportunity-enhancing environment. Building on prior research on gendered financing and prosocial lending, we therefore hypothesise that:

H1: Female refugee campaigns perform better in terms of crowdfunding outcomes than male campaigns.

2.4. Hypothesis 2: gender-specific sectoral dominance in crowdfunded microfinance

Entrepreneurial sectors are deeply gendered. Women are often

¹ Waqf (Arabic: وقف) is an Islamic endowment of property for religious or charitable purposes, functioning as a form of social finance in Muslim communities (Kachkar, 2017).

concentrated in traditional or female-dominated activities with low entry barriers, such as handicrafts, retail, or caregiving services, while men more likely to operate in high-growth or male-dominated industries (Althalathini and Tlaiss, 2023; Carter et al., 2015; Wang & Warn, 2018). For refugee women, these structural disparities are amplified by displacement, limited access to host-country labour markets, and constrained resources, often confining them to low-growth, survival-oriented activities (Adeeko & Treanor, 2022; Al-Dajani et al., 2019).

Role Congruity Theory provides a useful lens for understanding how these gendered sectoral dynamics may influence crowdfunding outcomes. The theory posits that individuals are evaluated more favourably when their behaviours align with societal expectations for their gender (Eagly, 1987; Eagly & Karau, 2002). Entrepreneurship is historically associated with masculine traits such as agency, risk-taking, and assertiveness (Althalathini et al., 2025; Jennings & Brush, 2013). As a result, ventures in male-dominated industries may appear more legitimate or viable to backers, reinforcing the gendered perception of entrepreneurship as a masculine domain. Crowdfunding studies support this logic: female entrepreneurs who signal masculine attributes or operate in male-dominated sectors tend to attract more funders (Wang et al., 2023), while campaigns in modern or non-traditional activities outperform those in traditional female-dominated sectors (Gama et al., 2021).

In the context of crowdfunded microfinance for refugee entrepreneurs, these dynamics suggest that gendered sectoral roles may continue to shape backer behaviour, even on platforms designed to promote inclusion. Campaigns associated with male-dominated activities may be perceived as more legitimate, better aligned with entrepreneurial stereotypes, and therefore more likely to succeed. Building on this reasoning, we hypothesise that:

H2: Campaigns in male-dominated activities perform better in terms of crowdfunding outcomes than campaigns in female-dominated activities.

2.5. Hypotheses 3: gendered sectoral incongruity and crowdfunding outcomes

Organisational and entrepreneurship research consistently shows that women face disadvantages in male-dominated domains. They encounter higher scrutiny, elevated stress, and discriminatory evaluations compared to both men and women in female-dominated environments (Gardiner & Tiggemann, 1999). Role Congruity Theory explains this phenomenon by arguing that individuals are evaluated based on the alignment—or misalignment—between their gender and the perceived requirements of a role (Eagly & Karau, 2002). Entrepreneurship and business leadership are historically coded as masculine, privileging traits such as assertiveness and risk-taking (Ahl, 2006; Jennings & Brush, 2013). When women operate in male-dominated industries, this incongruity can trigger prejudice and a “double bind”, where they are penalised for failing to align with traditional gender roles yet judged more harshly when adopting masculine behaviours (Heilman, 2001).

In the context of crowdfunded microfinance, these gendered dynamics may extend into digital funding decisions. Despite its reputation for inclusivity, crowdfunding is not immune to offline biases; funders may subconsciously favour campaigns that align with stereotypical gender-role expectations (Johnson et al., 2018; Eagly & Wood, 2011). The COVID-19 pandemic further intensified these dynamics by accelerating the shift to digital platforms, increasing refugee women’s visibility gaps and heightening the penalties of role incongruity. Reduced physical market access and increased care responsibilities limited women’s ability to signal legitimacy online, potentially exacerbating the double disadvantage faced in male-dominated activities.

For refugee women entrepreneurs, this intersection of gender, displacement, and pandemic-induced digital reliance compounds structural barriers. Female refugees entering male-dominated sectors

may thus experience a dual penalty, gender-role incongruity combined with refugee stigma, reducing their likelihood of crowdfunding success relative to male refugees in the same sectors.

H3: The relationship between gendered sectoral dominance and crowdfunding outcomes is moderated by gender, such that female refugees in male-dominated activities achieve worse crowdfunding outcomes than male refugees in those activities.

2.6. Hypotheses 4: gender, spatial context and crowdfunding outcomes

Under this hypothesis, refugee camps serve as the entrepreneurial context. Refugee camps represent unique entrepreneurial environments shaped by spatial, legal, and socio-economic exclusion. They are often designed as temporary settlements in response to mass displacement yet evolve into long-term spaces of restricted mobility, limited economic participation, and constrained access to formal markets (Turner, 2016; Agier, 2020; Peteet, 2016). Camps operate under complex humanitarian governance structures, producing institutional and spatial exclusion that curtails business growth and sustains economic precarity (Werker, 2007; Trapp, 2018).

Despite these constraints, entrepreneurial activity frequently emerges in refugee camps as a form of necessity-driven or survival entrepreneurship. Camp markets, characterised by micro-trading, services, and small-scale production, facilitate basic income generation, often leveraging informal networks and social capital rather than formal institutions (Ranalli, 2014; de la Chaux & Haugh, 2020). However, business growth is typically restricted by structural barriers, including regulatory restrictions, a lack of collateral, and minimal access to formal credit (Refai et al., 2018; Zighan, 2021). Access to crowdfunding and digital financial tools in refugee camps remains limited but potentially transformative. Platforms such as Kiva and other peer-to-peer lending networks enable entrepreneurs in camps to seek microloans from international backers, bypassing some of the regulatory and institutional barriers of host-country finance (Emanuel-Correia et al., 2022). COVID-19 further underscored the importance of digital financial tools: market closures and mobility restrictions heightened dependence on online platforms, where visibility and funder empathy became critical for survival. Evidence suggests that crowdfunding success in these contexts may hinge on funders’ prosocial motivations and perceptions of refugee vulnerability or resilience, highlighting the importance of gender and narrative appeal in digital finance (Al-Dajani et al., 2019; Betts et al., 2020; Gama et al., 2024).

The three focal countries of this study, Jordan, Lebanon, and Palestine, illustrate the persistence and diversity of camp-based refugee entrepreneurship. Jordan hosts major camps such as Za'atari and Azraq, which accommodate large segments of the country’s, around 560,000 registered refugees, with roughly 18 % residing in camps (United Nations High Commissioner for Refugees., 2025). These camps operate as semi-autonomous spaces with humanitarian market systems but limited integration into the national economy. In Lebanon, refugees account for more than 25 % of the population, with about one-fifth residing in informal camps. Dispersed urban and rural settlements dominate due to legal restrictions on formal camps, and entrepreneurship is largely informal and survival-driven (Shepherd et al., 2020). In Palestine, refugees constitute over 40 % of the population (Palestinian Central Bureau of Statistics, 2024), many living in long-established camps where displacement has become intergenerational. Entrepreneurship here is constrained by both structural exclusion and, in Gaza, severe mobility and trade restrictions (Althalathini et al., 2020).

This context underscores the importance of considering spatial dimensions in refugee entrepreneurship and crowdfunding research. Camps represent both sites of exclusion and potential nodes of digital financial inclusion through crowdfunded microfinance, where gender and social perception may critically shape entrepreneurial outcomes.

Refugee camps are high-density, exclusionary spaces that restrict

mobility, market access, and formal financial inclusion, creating highly constrained entrepreneurial ecosystems (Agier, 2020; Refai et al., 2018). Digital crowdfunding platforms offer an alternative route for camp-based entrepreneurs to access resources beyond local markets, yet funding outcomes are likely shaped by the intersection of gender and spatial context. Female refugees in camps may attract greater support in crowdfunding settings due to heightened funder empathy and the visibility of resilience narratives (Al-Dajani et al., 2019). Social cohesion and women's informal networks within camps can also foster perceived trustworthiness, further enhancing crowdfunding appeal (Emanuel-Correia et al., 2022). Conversely, male refugees may elicit less prosocial support in the same environments, as they are less aligned with narratives of vulnerability and communal solidarity.

H4: The relationship between refugee camp location and crowdfunding outcomes is moderated by gender, such that female refugees in camps achieve better crowdfunding outcomes than male refugees in camps.

These hypotheses aim to capture the complex dynamics of gender, sector dominance, and geographical context in shaping crowdfunding outcomes for refugee entrepreneurs, contributing to a more nuanced understanding of the challenges and opportunities they face.

3. Research methods

3.1. Data and sample collection

To empirically test our hypotheses, we gathered data about refugee entrepreneurs who seek capital for their business ventures on the Kiva crowdfunded microfinance platform. We utilised the World Bank (WB) as a secondary data source to control for female remuneration equality at a country level and to classify countries by income level. Our initial dataset comprises 15,211 refugee loan campaigns tagged with #Refugee, spanning from 2013 to September 2021, which marks the last snapshot of Kiva's data. From this initial dataset, we filtered for campaigns that included field partner data (i.e., microfinance institutions – MFIs), resulting in 13,656 observations. We excluded campaigns lacking MFI ratings or those with ratings below 1 (e.g. Galak et al., 2011) as well as campaigns without information on key MFI variables, those without funded status (such as ongoing fundraising), and those lacking borrower gender information. Additionally, we removed groups of borrowers with equal numbers of women and men, as well as campaigns from activities exhibiting no variability in funding success, yielding a refined total of 13,462 observations. Given our focus on low- and middle-income countries, we excluded 5 campaigns from high-income countries (specifically the United States and Israel), and 9 campaigns from countries lacking relevant WB data. Furthermore, this study emphasizes refugee entrepreneurship and gender-specific activities; and thus, we excluded 4,275 personal-loan campaigns, based on prior activity classification (e.g. Gama et al., 2021). We concentrated solely on entrepreneurial campaigns, as personal and humanitarian needs differ significantly from business needs in funding crowdfunded-microfinance campaigns (Gafni et al., 2021; Moleskis et al., 2019). Ultimately, our selected sample consists of 9173 refugee-based loan campaigns across 42 low- and middle-income countries, involving 65 MFI, and is representative of the refugee entrepreneurship niche within Kiva.²

3.2. Dependent variable

In alignment with prior research (e.g., Ahlers et al., 2015), this study

² The female refugee and female-majority refugee groups are 42,6% of all available campaigns (15,211 observations), compared with 45,3% on our final sample of 9,173 entrepreneurial campaigns.

employs four dependent variables to assess crowdfunding performance outcomes: funding *Success*, *Funded* amount, funding *Speed*, and number of *Backers*. First, funding *Success* is defined as a dichotomous variable, where a value of 1 indicates that the loan campaign is fully funded, and 0 otherwise. This operationalization is consistent with Kiva's "all-or-nothing" crowdfunding model. Second, *Funded* amount is operationalized as the total amount funded in fully funded campaigns, plus one, and is expressed in logarithmic form, in line with prior studies (e.g., Duan et al., 2020). Third, Funding *Speed* is calculated as 1000 divided by the number of days taken for a campaign to achieve funding success, also presented in logarithmic form. This variable effectively "measures how fast a loan can be funded" (Dorfleitner et al., 2021p. 10), with non-funded loan campaigns assigned a value of zero. Finally, numbers of *Backers* is operationalized as the total number of backers in fully funded campaigns, plus one, and is similarly expressed in logarithmic form, following established crowdfunding research (e.g., Duan et al., 2020).³

3.3. Independent variables

The primary independent variables in this study are related to gender-based activities and the context of the campaigns. The variable *Female* is defined as a dichotomous variable, where a value of 1 indicates that the entrepreneurs are female or that the group is a female-majority group and 0 otherwise (e.g., Gafni et al., 2021, Galak et al., 2011). It is important to note that male-dominated and female-dominated activities are not explicitly categorized within the Kiva crowdfunding platform. To identify the variable *male activities*, one independent researcher with a PhD and one of the authors classify each activity, following standard practices (e.g. Oo et al., 2019). The activities that were subject to differing classifications were thoroughly discussed and reclassified in accordance with standard practices to arrive at a final classification of activities (e.g., Gama et al., 2021). The process involved the following steps: 1) Initial Coding: Each activity listed in the Kiva campaign descriptions was independently classified by two researchers: one independent researcher with a PhD and one of the authors. The classification was based on widely recognized sectoral gender norms, drawing from existing literature and sectoral databases (e.g., International Labour Organization sectoral gender statistics, World Bank gender and employment reports). 2) Discrepancy Resolution: Activities for which the initial classifications differed were discussed in detail. The researchers reviewed the campaign descriptions, sectoral context, and relevant literature to reach a consensus. This iterative process ensured that classifications were not arbitrary but grounded in both empirical evidence and sectoral norms. 3) Final Classification: The final classification was operationalized as a dichotomous variable, where a value of 1 indicates that the campaign is associated with male-dominated activities, and 0 otherwise. This approach aligns with standard practices in the literature, where sectoral gender norms are used to categorize activities (Oo et al., 2019; Gama et al., 2021).

The variable *Male activities* is operationalized as a dichotomous variable, where a value of 1 indicates that the campaign is associated with male-dominated activities, and 0 otherwise.

Additionally, the variable *Refugee camps* is included as a dichotomous variable only in the testing of hypothesis H4, where a value of 1 signifies that the town of the campaign is a refugee camp, and 0 otherwise. This variable aims to capture the specific context in which the crowdfunding campaign is situated. Due to data limitations, our database identifies locations only at the town level and does not record refugee camps explicitly. However, an emerging body of literature recognizes that many long-term refugee camps develop complex social, economic, and administrative structures, making them functionally similar to towns or small cities (Betts et al., 2017; Sanyal, 2014).

³ All continuous variables in this study are winsorized at the 1st and 99th percentiles (e.g., Duan et al., 2020).

Protracted displacement has led to the establishment of local markets, education systems, and community governance, which reflect core urban characteristics within these settings (Betts et al., 2017; Ramadan, 2013). Case studies, particularly from Kenya and Lebanon, demonstrate that such camps host vibrant economic activity, infrastructural development, and diverse social networks, paralleling the organization of formal municipalities (Betts et al., 2017; Ramadan, 2013; Sanyal, 2014). As such, we use town as a proxy for the refugee camp. Refugee camps as town-like entities are firmly grounded in evidence; these environments often evolve into dynamic and relatively durable urban spaces rather than serving merely as temporary shelters (Betts et al., 2017; Sanyal, 2014). This approach justifies our use of town as a proxy for refugee camps for the purpose of variable construction in our analyses. Our sample includes 15 major refugee camps across Lebanon, Gaza Strip, Jordan, and the West Bank. These camps were established from 1948 to the late 1960s in response to successive waves of displacement (see Table 1). Each camp reflects distinct historical origins, population traits, and economic activities, shaping both the entrepreneurial opportunities and credit access available to refugees residing within them. The table presents the number and proportion of observations, year of establishment, and location for each camp included in the analysis.

For this study, a refugee entrepreneur is defined as a forcibly displaced individual who undertakes entrepreneurial activity within or adjacent to a refugee camp or host-country community, as verified by field partner organizations (AFI Global, 2024). Refugee entrepreneurs differ from host-country entrepreneurs in several fundamental respects: they often face legal barriers to formal business registration, are restricted in their ability to access mainstream banking, and must rely more heavily on microfinance, informal credit, and community support (de la Chaux & Haugh, 2020; Easton-Calabria & Hakiza, 2021). Their ventures are frequently confined to survival-oriented activities and informal markets due to regulatory and mobility constraints, while host-country entrepreneurs typically enjoy more diverse opportunities, established networks, and easier access to capital (Bhagat & Roderick, 2020). Refugee entrepreneurs in these camps are supported through partnerships between Kiva and locally embedded field partners, typically microfinance institutions and non-governmental organizations. These field partners are responsible for identifying eligible borrowers, assisting them in preparing their business profiles, and facilitating the creation of Kiva lending campaigns. Kiva's model ensures that loan capital is crowd-lent by global individual lenders, with repayment administered locally through trusted partners (Kiva, 2025; Gama et al., 2023).

Table 1
Distribution of Refugee Camps in the Sample.

Refugee Camp	Obs	%	Founded	Location
Ain Al Helwi Camp	362	17.6 %	1948	Lebanon
Rafah Camp	340	16.5 %	1949	Gaza Strip
Khanyounis Camp	303	14.7 %	1948	Gaza Strip
Dier Al-Balah Camp	168	8.1 %	1948	Gaza Strip
Baqaa Camp	162	7.9 %	1968	Jordan
Irbid Camp	97	4.7 %	1951	Jordan
Zarqa Camp	97	4.7 %	1949	Jordan
Jabalia Camp	103	5.0 %	1948	Gaza Strip
Marka Camp	83	4.0 %	1968	Jordan
Tulkarem Camp	79	3.8 %	1950	West Bank
Jabal Alhussein Camp	62	3.0 %	1952	Jordan
Jarash Camp	60	2.9 %	1968	Jordan
Wihdat Camp	58	2.8 %	1955	Jordan
Jenin Camp	79	3.8 %	1953	West Bank
Qalqilia Camp	9	0.4 %	n.a.	West Bank
Total	2,062	100.0 %		

Source: authors' elaboration. n.a. – not available

3.4. Control variables

Following established crowdfunding literature, we include control variables that capture four theoretically relevant dimensions affecting campaign outcomes: (1) loan characteristics that signal credit risk and capital needs, (2) campaign features that influence visibility and perceived legitimacy, (3) MFI characteristics reflecting institutional quality and intermediary credibility, and (4) country-level factors shaping regulatory and economic contexts. Each control variable addresses potential confounding factors that could bias our estimates of the gender-refugee-sector relationships central to our hypotheses.

The control variables in this study encompass characteristics related to loans, campaigns, MFIs, and country-specific factors. We control for loan-specific features that signal campaign risk and capital requirements to potential funders: *Size* (the loan amount requested in US dollars, expressed in logarithmic form), *Maturity* (the loan term in months, also in logarithmic form), *Repayment* (a binary variable where 1 indicates monthly repayment and 0 otherwise), and *Group* (a binary variable where 1 indicates a group loan and 0 otherwise) (e.g., Galak et al., 2011; Ly & Mason, 2012; Anglin et al., 2020). In terms of campaign characteristics, the variables include *Past Experience* (a binary variable where 1 indicates that the entrepreneurs are repeated borrowers with prior campaign experience on Kiva, and 0 otherwise) (e.g., Emanuel-Correia et al., 2022; Duan et al., 2020), *Campaign Time* (the duration in days between the planned end date and the posted date) (e.g., Gama et al., 2023; Taescher et al., 2021), and *Favorite* (a binary variable where 1 indicates that the campaign has received more than one favorite tag from lenders, and 0 otherwise).

For MFI characteristics, the study controls for the following variables: *ALSpC* (the MFI's average loan size adjusted by its country's gross national income per capita, multiplied by 100), *Portfolio Yield* (the MFI's portfolio yield calculated as financial earnings divided by its average outstanding loan portfolio), *Default Rate* (the percentage of funded loans that were unrepaid on Kiva), *Profitability* (the MFI's return on assets), (e.g., Anglin et al., 2020). We also added *Rating* (the rating assigned to the MFI by Kiva, ranging from 1, indicating high risk, to 5, indicating low risk) (e.g., Allison et al., 2013, Moss et al., 2015). Finally, country-specific features included as controls are *Legal Equality* (a binary variable where 1 indicates that the law mandates equal remuneration for females and males for work of equal value, and 0 otherwise) and *Low-Income Countries* (a binary variable where 1 indicates that the campaign originates from a low-income country, and 0 otherwise).

3.5. Estimation techniques

Prior studies on crowdfunding have employed various estimation techniques depending on the nature of the dependent variable. Logit models are standard for binary funding success outcomes (Berns et al., 2020; Moleskis et al., 2019), while ordinary least squares (OLS) regression is commonly used for continuous variables such as funding amount, speed, and number of backers (Duan et al., 2020; Gama et al., 2023). Given that only 10.44 % of campaigns were successfully funded, OLS estimations may yield biased results and create left-censored data (Dorfleitner et al., 2021; Gama et al., 2023). To address this issue, we conduct Tobit estimations (see Appendix A, Table A3. Tobit estimation results on crowdfunding performance), which are consistent with the main results obtained from OLS estimations. Consequently, we present the primary results from both logit and OLS regression models (e.g., Duan et al., 2020).

3.6. Descriptive statistics and univariate analysis

Table 2 presents a comprehensive overview of the success rates of crowdfunding campaigns across various countries and years. In Panel A, Lebanon, Jordan, and Palestine emerge as the top three countries in terms of total campaigns. Lebanon leads with 2331 successful campaigns

Table 2
Success metrics by country and by year.

Panel A: Sample distribution by country					
#	Country	Success campaigns	Success rate	Total campaigns	Total %
1	Albania	8	88.89 %	9	0.10 %
2	Armenia	9	100.00 %	9	0.10 %
3	Bolivia	1	100.00 %	1	0.01 %
4	Brazil	17	100.00 %	17	0.19 %
5	Burkina Faso	1	100.00 %	1	0.01 %
6	Cameroon	1	100.00 %	1	0.01 %
7	Colombia	712	82.03 %	868	9.46 %
8	Congo	11	100.00 %	11	0.12 %
9	Costa Rica	2	66.67 %	3	0.03 %
10	Dominican Republic	25	96.15 %	26	0.28 %
11	Ecuador	334	95.16 %	351	3.83 %
12	Egypt	1	100.00 %	1	0.01 %
13	El Salvador	18	94.74 %	19	0.21 %
14	Georgia	27	96.43 %	28	0.31 %
15	Guatemala	2	100.00 %	2	0.02 %
16	Indonesia	1	100.00 %	1	0.01 %
17	Jordan	2,046	85.86 %	2,383	25.98 %
18	Kenya	256	99.22 %	258	2.81 %
19	Kosovo	11	100.00 %	11	0.12 %
20	Kyrgyzstan	2	100.00 %	2	0.02 %
21	Lebanon	2,331	91.13 %	2,558	27.89 %
22	Liberia	3	100.00 %	3	0.03 %
23	Madagascar	2	100.00 %	2	0.02 %
24	Malawi	1	100.00 %	1	0.01 %
25	Mexico	2	100.00 %	2	0.02 %
26	Moldova	1	100.00 %	1	0.01 %
27	Myanmar (Burma)	1	100.00 %	1	0.01 %
28	Nepal	1	100.00 %	1	0.01 %
29	Nicaragua	3	100.00 %	3	0.03 %
30	Pakistan	89	100.00 %	89	0.97 %
31	Palestine	1,618	89.39 %	1,810	19.73 %
32	Peru	4	100.00 %	4	0.04 %
33	Philippines	22	100.00 %	22	0.24 %
34	Rwanda	473	95.94 %	493	5.37 %
35	Tajikistan	5	100.00 %	5	0.05 %
36	Tanzania	1	100.00 %	1	0.01 %
37	Thailand	1	100.00 %	1	0.01 %
38	Togo	2	100.00 %	2	0.02 %
39	Turkey	6	100.00 %	6	0.07 %
40	Uganda	161	98.77 %	163	1.78 %
41	Vietnam	1	100.00 %	1	0.01 %
42	Zimbabwe	2	100.00 %	2	0.02 %
	Total	8215	89.56 %	9,173	100 %

Panel B: Sample distribution by year					
Campaign's year	Success campaigns	Success rate	Total campaigns	Total %	
2013	50	81.97 %	61	0.66 %	
2014	190	95.00 %	200	2.18 %	
2015	280	90.32 %	310	3.38 %	
2016	595	84.16 %	707	7.71 %	
2017	1,685	90.64 %	1,859	20.27 %	
2018	2,496	85.30 %	2,926	31.90 %	
2019	1,485	90.33 %	1,644	17.92 %	
2020	845	97.58 %	866	9.44 %	
2021	589	98.17 %	600	6.54 %	
Total	8,215	89.56 %	9,173	100.00 %	

and a success rate of 91.13 %, followed by Jordan with 2,046 successful campaigns and an 85.86 % success rate. Palestine ranks third with 1618 successful campaigns and a success rate of 89.39 %. Collectively, these three countries account for 73.6 % of the total campaigns, with an average success rate of 88.79 %. The total success rate across all countries stands at 89.56 %. Panel B highlights the success rates by year, showing a peak in 2018 with 2496 successful campaigns and a success rate of 85.30 %. The overall trend indicates a robust performance in crowdfunding, particularly in the years 2020 and 2021, where success rates exceeded 97 %, with one potential explanation being that the COVID-19 pandemic occurred during this period.

Table 3 summarises the descriptive statistics and correlation of the independent and control variables. Notably, the sample reveals a

minority of female entrepreneurs, accounting for only 45 % of campaigns within the refugee niche. This contrasts with the traditional majority of female-led campaigns observed in crowdfunded micro-finance studies utilizing Kiva (e.g., Berns, Shahriar, & Unda, 2021; Figueroa-Armijos and Berns 2022). The correlation analysis indicates no covariates exceed a correlation coefficient of 0.8. Additionally, the variance inflation factors (VIF)⁴ show a maximum VIF of 6.17 and an average VIF of 2.57 both well below the reference threshold of 10 (Kennedy, 2008). Therefore, multicollinearity issues are not anticipated in the estimation results.

⁴ The VIF are not tabulate here, but available upon request.

Table 3
Descriptive statistics and correlations of explanatory variables.

Variables	Mean	S.D.	VIF	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) female	0.45	0.50	1.46	1.00																
(2) male activities	0.60	0.49	1.3	-0.45*	1.00															
(3) Refugee camps	0.35	0.48	1.35	-0.07*	0.03*	1.00														
(4) Size	6.97	6.63	2.2	-0.06*	0.04*	0.24*	1.00													
(5) Maturity	2.89	0.36	3.57	0.02	-0.04*	0.30*	1.00													
(6) Repayment	0.96	0.20	1.1	0.02	-0.02	0.00	-0.17*	1.00												
(7) Group	0.04	0.21	1.36	0.19*	-0.13*	0.06*	0.11*	-0.25*	0.00	1.00										
(8) Past experience	0.15	0.35	1.13	0.01	0.06*	-0.09*	0.02	-0.15*	0.04*	0.00	1.00									
(9) Campaign time	36.61	10.13	1.07	-0.04*	0.05*	-0.08*	-0.07*	-0.12*	-0.11*	-0.01	0.05*	1.00								
(10) Favorites	0.34	0.48	1.1	-0.14*	0.12*	0.05*	0.22*	0.06*	-0.03*	-0.02	0.02*	-0.04*	1.00							
(11) ALSpc	35.62	49.71	5.05	-0.16*	0.07*	0.23*	0.34*	0.59*	-0.22*	-0.11*	-0.19*	-0.01	0.01	1.00						
(12) Portfolio yield	25.55	11.76	2.95	0.16*	-0.15*	0.04*	-0.04*	-0.05*	0.15*	0.07*	-0.07*	-0.16*	0.03*	0.45*	1.00					
(13) Default rate	1.40	2.34	1.65	-0.08*	0.05*	-0.32*	-0.43*	-0.19*	0.02	-0.09*	0.13*	0.06*	-0.13*	-0.17*	-0.10*	1.00				
(14) Profitability	9.91	12.93	4.24	-0.05*	0.11*	-0.16*	-0.24*	-0.51*	0.10*	-0.02	0.25*	0.14*	-0.03*	-0.42*	-0.40*	0.17*	1.00			
(15) Rating	3.00	0.91	5.48	0.22*	-0.16*	0.08*	0.02	0.49*	-0.03*	-0.21*	-0.18*	-0.12*	-0.03*	0.31*	0.09*	-0.12*	-0.29*	1.00		
(16) Legal equality	0.40	0.49	6.17	0.22*	-0.11*	-0.14*	-0.26*	-0.24*	0.14*	-0.15*	0.06*	0.02	-0.01	-0.37*	0.09*	-0.09*	0.46*	0.46*	1.00	
(17) Low income	0.07	0.26	2.46	-0.09*	0.12*	-0.21*	-0.23*	-0.40*	0.02*	-0.03*	0.19*	0.18*	-0.03*	-0.04*	-0.35*	0.17*	0.54*	-0.25*	0.33*	1.00

Note: VIF, variance inflation factor. * p < 0.05.

Table 4 provides the results of a univariate analysis comparing crowdfunding outcomes across key demographic groups: female versus male entrepreneurs, male-dominated versus female-dominated activities, and the presence versus absence of refugee camps (*female-male activities* and *refugee camps*). This analysis provides insights into how female refugees differ from their male counterparts and how crowdfunding outcomes vary between gendered activities and contexts with and without refugee camps.

In the refugee context, female entrepreneurs are significantly more likely to achieve full funding compared to their male counterparts. Female-led campaigns demonstrate superior performance in terms of total amount *funded*, *funding speed*, and *backers* supporting the campaigns. This suggests that female entrepreneurs may possess unique advantages in crowdfunding scenarios, potentially due to factors such as female borrowers being more reliable (D’Espallier et al., 2011), which can enhance their attractiveness to potential backers. Framing entrepreneurs as female can highlight individual vulnerability, which may elicit greater support from funders (Figueroa-Armijos & Berns, 2022). Research indicates that women tend to be funded faster for basic needs loans (Gafni et al., 2021). The gender effect is notably stronger for entrepreneurial projects compared to humanitarian ones (Moleskis et al., 2019). This superior performance is further supported by specific evidence regarding female refugee entrepreneurs (Gama et al., 2023). Moreover, female refugees are also less likely to engage in a male-dominated activity, compared with their male counterparts, indicating a tendency to pursue traditional roles or activities typically associated with women when seeking crowdfunding.

In contrast, campaigns categorised as male-dominated activities tend to secure funding at a faster rate than those led by females. However, it is noteworthy that there are no statistically significant differences in funding success rates, total amounts funded, or the number of backers between male and female activities. This finding implies that the crowdfunding community does not exhibit a clear preference for either gender’s activities on platforms like Kiva, at least within the context of our refugee sample.

It is important to note that this univariate analysis does not account for the simultaneous effects of independent and control variables, as would be assessed in an Ordinary Least Squares (OLS) regression framework (e.g., Ahlers et al., 2015), which is addressed next.

4. Results

Table 5 reports the results for logit and OLS estimations for the four crowdfunding performance variables showing individual interactions. Specifically, it presents the logit model for *success* (column 1), and its respective average marginal effects (AME) (2), and OLS regression models for *funded* (3), *speed* (4) and *backers* (5) with the Female × Male activities interaction. Additional specifications for *success* (column 6), its AME (7), and OLS regression models for *funded* (8), *speed* (9) and *backers* (10). Table 6 reports the results of both interactions combined for *success* (1), its AME (2), and OLS regression models for *funded* (3), *speed* (4) and *backers* (5).

The positive coefficients for the female variable, statistically significant at the 1 % level (p < 0.01), in specifications 1–4 indicates that female entrepreneurs, as well as the subgroup of majority female entrepreneurs, exhibit superior crowdfunding performance across all metrics of *success*, *funded*, *speed* and *backers*. These findings provide support for H1. Regarding hypothesis H2, the results reveal that campaigns situated in male-dominated activities outperform those in female-dominated activities regarding crowdfunding outcomes. The *male activities* coefficients are positive and statistically significant across all the dependent variables (p < 0.01), thereby confirming H2. Furthermore, our third hypothesis stated that gender would moderate the effect of male activities on crowdfunding performance. The coefficients for the interaction terms between *female* and *male activities* is negative and statistically significant for specifications (3) *funded* ($\beta =$

Table 4
Mean difference *t*-test by groups of interest.

	Female			Male activities			Refugee camps		
	Mean (No)	Mean (Yes)	Difference	Mean (No)	Mean (Yes)	Difference	Mean (No)	Mean (Yes)	Difference
Success	0.86	0.94	-0.09***	0.89	0.90	-0.01	0.91	0.86	0.04***
Funded	5.96	6.53	-0.57***	6.22	6.21	0.00	6.22	6.21	0.01
Speed	3.58	4.42	-0.84***	3.87	4.11	-0.23***	4.03	3.75	0.27***
Backers	2.95	3.18	-0.24***	3.07	3.03	0.04	3.03	3.14	-0.11***
Female				0.27	0.73	-0.46***	0.48	0.37	0.10***
Male activities	0.81	0.36	-0.44***				0.60	0.63	-0.03**
Refugee camps	0.38	0.31	0.06***	0.36	0.33	-0.03**			
Size	7.01	6.93	0.08***	6.99	6.94	0.05***	6.90	7.23	-0.33***
Maturity	2.88	2.89	-0.01*	2.88	2.90	-0.03***	2.81	3.14	-0.32***
Repayment	0.95	0.96	-0.01*	0.96	0.96	-0.01	0.96	0.95	0.01**
Group	0.01	0.09	-0.08***	0.02	0.08	-0.06***	0.06	0.00	0.05***
Past experience	0.15	0.15	0.00	0.17	0.12	0.04***	0.16	0.09	0.07***
Campaign time	36.98	36.15	0.83***	37.04	35.94	1.11***	37.00	35.25	1.75***
Favorites	0.40	0.27	0.13***	0.39	0.27	0.12***	0.34	0.36	-0.03**
ALSpC	42.95	26.78	16.16***	38.51	31.22	7.29***	24.69	73.31	-48.62***
Portfolio yield	23.80	27.66	-3.86***	24.10	27.77	-3.67***	26.40	22.62	3.79***
Default rate	1.58	1.20	0.38***	1.50	1.25	0.25***	1.71	0.36	1.35***
Profitability	10.50	9.21	1.28***	11.11	8.08	3.03***	10.96	6.30	4.67***
Rating	2.82	3.21	-0.39***	2.88	3.17	-0.29***	2.88	3.39	-0.50***
Legal equality	0.31	0.52	-0.22***	0.36	0.47	-0.11***	0.10	0.00	0.10***
Low income	0.10	0.05	0.05***	0.10	0.04	0.06***	0.91	0.86	0.04***
Observations	5,017	4,156		3,632	5,541		7,111	2,062	

****p* value < 0.01, ***p*-value < 0.05, **p*-value < 0.1. Note: Differences in values due to rounding.

-0.430, $p < 0.01$), (4) *speed* ($\beta = -0.319$, $p < 0.01$), and (5) *backers* ($\beta = -0.216$, $p < 0.01$). For example, in specifications (3) and (4) show that crowdfunding campaigns initiated by female entrepreneurs are funded with greater amount and significantly more rapidly than male entrepreneurs assuming no male activities, as indicated by the associated coefficients (β Female = 1.081, $p < 0.01$ and β Female = 1.040, $p < 0.01$). This suggests that female entrepreneurs benefit from a comparative advantage in terms of amount funded and funding speed in female-activity campaigns (see Table 6).

Furthermore, taking specification (4) as example, when examining the interaction between female entrepreneurs and male activities, we find that the coefficient for female entrepreneurs involved in male-activity loans (β male activities = 0.345 + β Female = 1.040 + β Female*Male activities = -0.319) indicates that these campaigns are funded more rapidly than male borrowers involved in male activities (β Male activities = 0.345). The comparative advantage of female entrepreneurs is less pronounced, as evidenced by the negative and significant coefficient associated with the interaction variable (β Female*Male activities = -0.319). However, they still maintain a higher funding speed compared to male borrowers in male activities. This negative interaction term indicates that the advantage female entrepreneurs have is somewhat diminished when they are involved in male activities, but it does not completely negate their overall higher funding speed.

In summary, the results indicate that female entrepreneurs in refugee camps not only experience a significant advantage in terms of funding speed but also demonstrate a notable comparative advantage when engaging in male-dominated activities. This suggests that the relationship between gendered-sectorial dominance and crowdfunding outcomes is moderated by gender, indicating that the comparative advantage of female entrepreneurs is stronger when they are involved in female-dominated activities compared with male-dominated activities since the interaction coefficient is negative (β Female*Male activities = -0.319). While the interaction coefficient in specification 1 is not significant, it is important to note that the interaction effect in nonlinear models, such as the logit model, does not necessarily reflect the average marginal effect of the interaction term. This can lead to potential inaccuracies in both the signs and significance levels (Ai & Norton, 2003). To properly address this, we employ `inteff` command in Stata 15.1, and the observations are illustrated in Fig. 1, which presents the z-statistics of

the interaction effect. This graphical representation demonstrates that, despite the lack of statistical significance of the interaction in specification 1, the overall interaction effect is negative and significant for many observations. Consequently, the overall results lend support to Hypothesis H3.

Additionally, we explore the interaction effects of female entrepreneurs in relation to the presence of refugee camps, as indicated by the dummy variable for campaigns located in cities with refugee camps. The results reveal that female entrepreneurs demonstrate a positive and statistically significant relationship with all crowdfunding performance variables, indicating that their campaigns are more likely to succeed, attract funding, and garner backers when situated in these contexts aligned with previous findings regarding female refugees in entrepreneurial context (e.g., Gama et al. 2023). Specifically, the presence of refugee camps also shows a positive and significant impact on crowdfunding outcomes, although the significance levels vary across different performance metrics. For the *success* and *funding speed*, the significance is observed at the 10 % level, while the amount *funded* and number of *backers* achieve both stronger significance at the 5 % level and 1 % level, respectively.

Our Hypothesis H4 stated that gender would moderate the effect of refugee camps on crowdfunding performance. The coefficients for the interaction terms between *female* and *refugee camps* are positive and statistically significant for specifications (3) *funded* ($\beta = 0.472$, $p < 0.05$), (4) *speed* ($\beta = 0.547$, $p < 0.05$), and (5) *backers* ($\beta = 0.285$, $p < 0.05$). Taking specification (9) as an example, it shows that crowdfunding campaigns initiated by female entrepreneurs are funded significantly more rapidly than male entrepreneurs assuming no refugee camps for the campaigns, as indicated by the coefficient (β Female = 0.843, $p < 0.01$). This suggests that female entrepreneurs benefit from a comparative advantage in terms of funding speed in refugee-camp campaigns.

Furthermore, when examining the interaction between female entrepreneurs and refugee camps, we find that the coefficient for female entrepreneurs involved in refugee-camp campaigns (β refugee camps = -0.367 + β Female = 0.843 + β Female*Refugee camps = 0.547) indicates that these campaigns are funded more rapidly than male borrowers involved in non-refugee-camp campaigns (β refugee camps = -0.367). The comparative advantage of female entrepreneurs is more pronounced, as evidenced by the positive and significant coefficient

Table 5

Estimation results on crowdfunding performance: Individual interactions: Female*Male activities interaction and Female*Refugee camps interaction.

	Female*Male activities					Female*Refugee camps				
	(1) Success	(2) AME	(3) Funded	(4) Speed	(5) Backers	(6) Success	(7) AME	(8) Funded	(9) Speed	(10) Backers
Female	1.810*** (0.332)	0.128*** (0.018)	1.192*** (0.206)	1.170*** (0.209)	0.599*** (0.112)	1.663*** (0.227)	0.127*** (0.017)	0.814*** (0.120)	0.843*** (0.095)	0.397*** (0.066)
Male activities	0.522*** (0.127)	0.040*** (0.007)	0.472*** (0.123)	0.345*** (0.093)	0.241*** (0.066)	0.491*** (0.080)	0.039*** (0.006)	0.237*** (0.060)	0.171** (0.072)	0.123*** (0.033)
Female*Male activities	-0.116 (0.262)		-0.439** (0.182)	-0.329** (0.146)	-0.222** (0.093)					
Refugee camps	-0.297* (0.166)	-0.024* (0.014)	-0.163 (0.104)	-0.137 (0.168)	-0.107* (0.058)	-0.401* (0.241)	-0.024** (0.012)	-0.363** (0.153)	-0.367* (0.217)	-0.227** (0.087)
Female*Refugee camps						0.372 (0.396)		0.472** (0.195)	0.547** (0.216)	0.285** (0.119)
Size	-1.644*** (0.164)	-0.126*** (0.011)	0.258 (0.177)	-0.673*** (0.133)	0.511*** (0.089)	-1.657*** (0.158)	-0.127*** (0.011)	0.235 (0.178)	-0.696*** (0.131)	0.498*** (0.089)
Maturity	-1.658*** (0.278)	-0.127*** (0.021)	-0.935*** (0.182)	-0.653** (0.275)	-0.423*** (0.069)	-1.634*** (0.285)	-0.125*** (0.021)	-0.887*** (0.187)	-0.611** (0.286)	-0.397*** (0.071)
Repayment	-1.411*** (0.174)	-0.108*** (0.014)	-0.604*** (0.092)	-0.634*** (0.121)	-0.358*** (0.044)	-1.404*** (0.175)	-0.108*** (0.014)	-0.588*** (0.088)	-0.621*** (0.123)	-0.350*** (0.040)
Group	1.712*** (0.654)	0.131*** (0.048)	0.151 (0.146)	0.533*** (0.165)	0.077 (0.073)	1.755*** (0.671)	0.135*** (0.049)	0.218 (0.136)	0.606*** (0.142)	0.117* (0.064)
Past experience	0.294** (0.134)	0.023** (0.010)	0.232** (0.091)	0.128* (0.068)	0.127*** (0.046)	0.293** (0.135)	0.022** (0.010)	0.232** (0.088)	0.129* (0.066)	0.127*** (0.044)
Campaign time	0.037*** (0.013)	0.003*** (0.001)	0.010*** (0.004)	-0.026*** (0.005)	0.004** (0.002)	0.037*** (0.013)	0.003*** (0.001)	0.010** (0.004)	-0.026*** (0.004)	0.004** (0.002)
Favorite	1.058*** (0.127)	0.081*** (0.011)	0.618*** (0.124)	0.135 (0.108)	0.402*** (0.067)	1.059*** (0.128)	0.081*** (0.011)	0.617*** (0.123)	0.133 (0.107)	0.401*** (0.067)
ALSpC	0.008** (0.004)	0.001** (0.000)	0.004*** (0.001)	0.004 (0.002)	0.002*** (0.001)	0.008** (0.004)	0.001** (0.000)	0.004*** (0.001)	0.003 (0.003)	0.002*** (0.001)
Portfolio yield	-0.046*** (0.009)	-0.003*** (0.001)	-0.019*** (0.003)	-0.029*** (0.009)	-0.012*** (0.001)	-0.047*** (0.009)	-0.004*** (0.001)	-0.021*** (0.003)	-0.030*** (0.010)	-0.013*** (0.001)
Default rate	-0.230*** (0.035)	-0.018*** (0.002)	-0.121*** (0.022)	-0.139*** (0.026)	-0.049*** (0.010)	-0.234*** (0.033)	-0.018*** (0.002)	-0.129*** (0.021)	-0.147*** (0.026)	-0.054*** (0.009)
Profitability	-0.007 (0.009)	-0.001 (0.001)	-0.010** (0.004)	-0.011 (0.011)	-0.007*** (0.002)	-0.008 (0.008)	-0.001 (0.001)	-0.011*** (0.004)	-0.013 (0.011)	-0.008*** (0.002)
Rating	-0.175 (0.276)	-0.013 (0.021)	-0.064 (0.104)	-0.212 (0.149)	-0.057 (0.051)	-0.167 (0.274)	-0.013 (0.021)	-0.062 (0.101)	-0.206 (0.148)	-0.055 (0.049)
Legal equality	-0.120 (0.517)	-0.009 (0.040)	-0.197 (0.184)	0.222 (0.303)	-0.025 (0.093)	-0.126 (0.516)	-0.010 (0.040)	-0.197 (0.186)	0.219 (0.308)	-0.026 (0.094)
Low income	0.051 (0.601)	0.004 (0.046)	-0.151 (0.126)	0.064 (0.196)	-0.111 (0.072)	0.060 (0.603)	0.005 (0.046)	-0.157 (0.128)	0.061 (0.194)	-0.114 (0.073)
Constant	19.408*** (1.200)		7.207*** (1.138)	12.953*** (1.007)	0.924 (0.557)	19.521*** (1.131)		7.528*** (1.080)	13.260*** (0.936)	1.102** (0.518)
Monthly Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,173	9,173	9,173	9,173	9,173	9,173	9,173	9,173	9,173	9,173
χ^2 test/F-test	2001425.67		5943.19	8529.80	20514.06	1339602.61		13542.65	9778.67	37077.80
p-value	0.00		0.00	0.00	0.00	0.00		0.00	0.00	0.00
Pseudo R ² /Adjusted R ²	0.22		0.12	0.23	0.20	0.22		0.12	0.23	0.20

Estimation results for logit regression model column (1), and OLS regressions columns (3), (4) and (5). MFI clustered robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1. Note: AME: Average marginal effects.

associated with the interaction variable ($\beta_{\text{Female*Refugee camps}} = 0.547$).

This indicates that female entrepreneurs in refugee camp settings not only benefit from the general positive effects associated with being female but also experience enhanced crowdfunding outcomes when their campaigns are in these specific environments. We employ again the *inteff* command in Stata 15.1, and the observations are illustrated in Fig. 2, which presents the z-statistics of the interaction effect Female*Refugee camps. This graphical representation demonstrates that, despite the lack of statistical significance of the interactions in specification 6, the overall interaction effect is positive and significant for many observations. Therefore, the overall results lend support to Hypothesis H4. Our additional controls of borrowers with past experience on Kiva, campaign time and being tagged as multiple favourites by the backers have positive impacts on crowdfunding performance. We found that campaigns which have MFI partners with better ALSpc, lower default rate and lower portfolio yield, in line with prosocial mission of this type of crowdfunding platforms, have better crowdfunding

performance outcomes. Finally, the rating of the MFI and the country controls (legal equality and low-income countries) are not statistically significant.

5. Additional analyses

5.1. Controlling the impact of “Refugee Camp” mentions

The inclusion of “refugee camp” mentions in crowdfunding campaigns reveals interesting dynamics in donor behaviour (Table 7). While projects associated with refugee camps generally show lower performance across all metrics (success, funding, speed, and backers), the explicit mention of “refugee camp” in the campaign description appears to partially mitigate these negative effects. This suggests that transparency about the project’s connection to refugee camps may resonate positively with potential donors. Notably, female project creators continue to outperform their male counterparts across all metrics, even when controlling for refugee camp associations. The interaction

Table 6
 Estimation results on crowdfunding performance: Female*male activities & Female*refugee camps interactions.

	(1) Success	(2) AME	(3) Funded	(4) Speed	(5) Backers
Female	1.711*** (0.281)	0.127*** (0.017)	1.081*** (0.174)	1.040*** (0.155)	0.531*** (0.091)
Male Activities	0.523*** (0.127)	0.040*** (0.007)	0.472*** (0.119)	0.345*** (0.089)	0.241*** (0.064)
Female*Male Activities	-0.109 (0.266)		-0.430** (0.177)	-0.319** (0.143)	-0.216** (0.089)
Refugee camps	-0.401* (0.241)	-0.024** (0.012)	-0.365** (0.150)	-0.361* (0.215)	-0.223** (0.085)
Female*Refugee camps	0.369 (0.398)		0.462** (0.194)	0.540** (0.216)	0.280** (0.119)
Size	-1.655*** (0.161)	-0.127*** (0.011)	0.242 (0.176)	-0.691*** (0.130)	0.502*** (0.088)
Maturity	-1.635*** (0.286)	-0.125*** (0.021)	-0.919*** (0.180)	-0.635** (0.275)	-0.413*** (0.067)
Repayment	-1.404*** (0.175)	-0.108*** (0.014)	-0.600*** (0.089)	-0.629*** (0.121)	-0.356*** (0.041)
Group	1.757*** (0.664)	0.135*** (0.048)	0.206 (0.143)	0.598*** (0.145)	0.111 (0.069)
Past experience	0.292** (0.135)	0.022** (0.010)	0.234** (0.089)	0.130* (0.066)	0.128*** (0.044)
Campaign time	0.037*** (0.013)	0.003*** (0.001)	0.010*** (0.004)	-0.026*** (0.004)	0.004** (0.002)
Favorite	1.058*** (0.128)	0.081*** (0.011)	0.616*** (0.123)	0.133 (0.106)	0.401*** (0.066)
ALSpC	0.008** (0.004)	0.001** (0.000)	0.004*** (0.001)	0.003 (0.002)	0.002*** (0.001)
Portfolio yield	-0.047*** (0.009)	-0.004*** (0.001)	-0.021*** (0.003)	-0.030*** (0.009)	-0.013*** (0.001)
Default rate	-0.233*** (0.034)	-0.018*** (0.002)	-0.125*** (0.021)	-0.144*** (0.025)	-0.052*** (0.010)
Profitability	-0.008 (0.008)	-0.001 (0.001)	-0.011*** (0.004)	-0.013 (0.011)	-0.008*** (0.002)
Rating	-0.168 (0.274)	-0.013 (0.021)	-0.056 (0.100)	-0.202 (0.147)	-0.052 (0.048)
Legal equality	-0.126 (0.516)	-0.010 (0.040)	-0.205 (0.179)	0.213 (0.300)	-0.030 (0.090)
Low income	0.060 (0.602)	0.005 (0.046)	-0.148 (0.121)	0.067 (0.194)	-0.109 (0.069)
Constant	19.487*** (1.170)		7.368*** (1.078)	13.141*** (0.931)	1.021* (0.519)
Monthly Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	9,173	9,173	9,173	9,173	9,173
χ^2 test/F-test	5095538.00		10732.08	13228.95	30565.11
p-value	0.00		0.00	0.00	0.00
Pseudo R ² /Adjusted R ²	0.22		0.12	0.24	0.20

Estimation results for logit regression model column (1), and OLS regressions columns (3), (4) and (5). MFI clustered robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1. Note: AME: Average marginal effects.

Robustness test:

between female creators and refugee camp projects shows a positive effect, indicating that women-led initiatives in refugee contexts may be particularly appealing to backers.

5.2. Controlling the influence of refugee search trends

The study also accounts for *search trend* on refugees (score by week of the news search on refugee’s topic worldwide in Google trends, scaled from 0 to 100; Table 8). As noted by Brodeur et al. (2021), the use of Google Trends data offers valuable insights into public sentiment and behaviour, allowing researchers to capture the dynamics of interest in specific topics over time.

The inclusion of this data provides a broader context for understanding how public interest in refugee issues may influence crowdfunding performance. However, contrary to expectations, the refugee search trend variable does not exhibit a statistically significant impact on any of the crowdfunding performance metrics analysed. This finding suggests that general public interest in refugee issues, as captured by search trends, may not directly translate into increased support for

refugee-related crowdfunding initiatives.

The consistency of other findings—such as the superior performance of female-led projects and the negative main effect associated with refugee camp affiliation—reinforces the robustness of these trends across various model specifications. The absence of a significant effect from search trends may indicate that crowdfunding donors are more motivated by project-specific factors and personal connections to the causes they support, rather than by broader public discourse surrounding refugee issues. This insight highlights the critical role of effective project presentation and the characteristics of project creators in driving crowdfunding success, even for initiatives addressing prominent humanitarian challenges.

Additionally, in unreported additional analyses, we sought to estimate separate models for individual and group loans using both OLS and logistic regression approaches. However, the group loan subsample presented significant estimation challenges: for OLS, the F-statistic was not reported, thereby precluding formal assessment of overall model significance; for logistic regression, issues of complete separation and perfect prediction made maximum likelihood estimation infeasible,

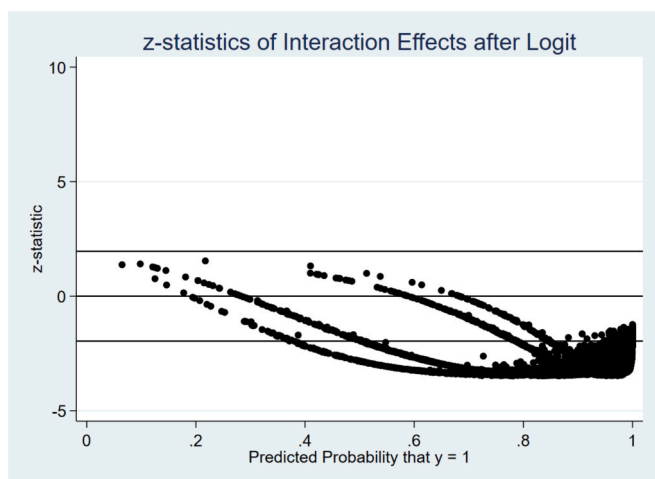


Fig. 1. Z-statistic for the female x male-activities interaction.

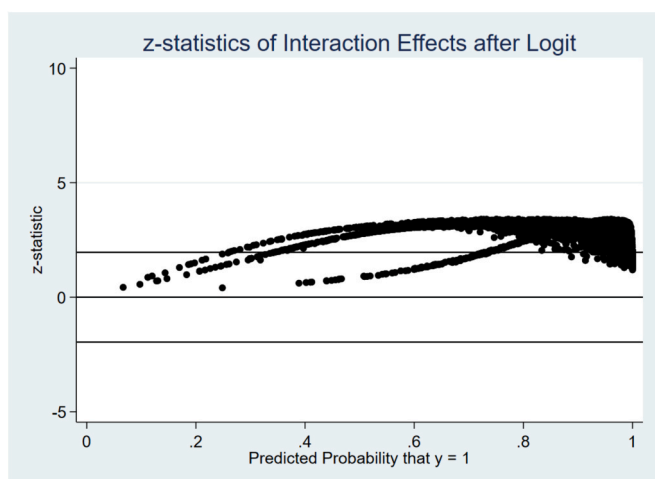


Fig. 2. Z-statistic for the female x refugee camps interaction.

preventing reliable coefficient estimation and meaningful statistical inference, with χ^2 -statistic unreported when running the model. Due to these constraints, the comparison between individual and group loan subsamples was not possible.

5.3. Controlling the COVID-19 period

Drawing from literature, we found it important to examine the impact of the COVID-19 period in the study, as the pandemic has demonstrated heterogenous effects on crowdfunding, influenced by factors such as funding model structure, geographic and demographic context, and campaign adaptation strategies (Wang et al., 2022). Reward-based crowdfunding platforms such as Kickstarter reported increased success rates of backing, funds raised, and number of backers during COVID-19 (Ljumović et al., 2022; Yang and Koh, 2022). Conversely, donation-based crowdfunding platforms like GoFundMe, on the other hand, showed mixed results, with initial surges during earlier days of the pandemic, and declines and increased inequalities in later days of the pandemic (Kenworthy et al., 2023; Daskalakis, 2023).

To examine the impact of the COVID-19 pandemic on crowdfunding performance, we estimated our main models using a dummy variable assuming the value one for the COVID period, defined from March 11, 2020 (the official pandemic declaration) to December 31, 2021, and zero otherwise. This allows us to test whether the core relationships identified in our study persist under the unique and challenging conditions imposed by the global pandemic. It should be noted that we incorporate the COVID control variable not to demonstrate and report its nuanced effects on refugee crowdfunding. Instead, we use the variable to directly test whether the pandemic fundamentally altered the crowdfunding dynamics central to our research questions.

As shown in Table 9, the COVID variable does not exhibit a statistically significant effect on any of the crowdfunding performance metrics analysed—including campaign success, funding amount, speed, and number of backers—within our sample of refugee-related campaigns. This indicates that the pandemic period did not systematically alter fundraising outcomes, thereby reinforcing the robustness of our main findings and suggesting that the determinants of crowdfunding performance for refugee campaigns were largely unaffected by broader pandemic disruptions.

To further contextualize these findings, recent literature highlights

Table 7
Estimation results on crowdfunding performance: “Refugee Camp” mentions.

	(1) Success	(2) AME	(3) Funded	(4) Speed	(5) Backers
Female	1.720*** (0.282)	0.128*** (0.017)	1.079*** (0.178)	1.038*** (0.158)	0.530*** (0.093)
Male Activities	0.525*** (0.138)	0.040*** (0.007)	0.471*** (0.123)	0.344*** (0.091)	0.241*** (0.066)
Female*Male Activities	-0.120 (0.278)		-0.430** (0.180)	-0.319** (0.145)	-0.216** (0.091)
Refugee camps	-0.489** (0.215)	-0.030*** (0.011)	-0.387*** (0.133)	-0.397** (0.196)	-0.239*** (0.077)
Female*Refugee camps	0.421 (0.380)		0.477** (0.184)	0.557*** (0.207)	0.287** (0.115)
“Refugee Camp” mentions	0.523** (0.249)	0.040** (0.020)	0.197 (0.165)	0.225 (0.177)	0.096 (0.084)
Constant	19,530*** (1.126)		7.317*** (1.058)	13.084*** (0.911)	0.997* (0.510)
Control Variables	Yes	Yes	Yes	Yes	Yes
Monthly Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	9,173	9,173	9,173	9,173	9,173
χ^2 test/F-test	19349462.92		14438.46	15446.33	35682.71
p-value	0.00		0.00	0.00	0.00
Pseudo R ² /Adjusted R ²	0.22		0.12	0.24	0.20

Estimation results for logit regression model column (1), and OLS regressions columns (3), (4) and (5). MFI clustered robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1. Note: AME: Average marginal effects.

Table 8
Estimation results on crowdfunding performance: Refugee Search Trend (Google Trends).

	(1) Success	(2) AME	(3) Funded	(4) Speed	(5) Backers
Female	1.716*** (0.279)	0.127*** (0.017)	1.082*** (0.172)	1.041*** (0.153)	0.531*** (0.091)
Male Activities	0.525*** (0.125)	0.040*** (0.007)	0.473*** (0.118)	0.346*** (0.087)	0.241*** (0.064)
Female*Male Activities	-0.113 (0.264)		-0.432** (0.176)	-0.321** (0.142)	-0.217** (0.089)
Refugee camps	-0.384* (0.227)	-0.023** (0.011)	-0.343** (0.137)	-0.345* (0.202)	-0.217*** (0.080)
Female*Refugee camps	0.353 (0.385)		0.453** (0.186)	0.527** (0.208)	0.276** (0.115)
Refugee Search Trend	-0.010 (0.008)	-0.001 (0.001)	-0.006 (0.007)	-0.008 (0.006)	-0.003 (0.003)
Constant	19.635*** (1.074)		7.424*** (1.075)	13.216*** (0.927)	1.048** (0.517)
Control Variables	Yes	Yes	Yes	Yes	Yes
Monthly Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	9,173	9,173	9,173	9,173	9,173
χ^2 test/F-test	4914675.83		10529.35	12885.84	29463.73
p-value	0.00		0.00	0.00	0.00
Pseudo R ² /Adjusted R ²	0.22		0.12	0.24	0.20

Estimation results for logit regression model column (1), and OLS regressions columns (3), (4) and (5). MFI clustered robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1. Note: AME: Average marginal effects.

Table 9
Estimation results on crowdfunding performance: COVID period.

	(1) Success	(2) AME	(3) Funded	(4) Speed	(5) Backers
Female	1.703*** (0.272)	0.126*** (0.016)	1.076*** (0.170)	1.029*** (0.143)	0.529*** (0.089)
Male Activities	0.528*** (0.128)	0.040*** (0.007)	0.473*** (0.118)	0.347*** (0.087)	0.241*** (0.064)
Female*Male Activities	-0.093 (0.266)		-0.428** (0.175)	-0.312** (0.138)	-0.215** (0.089)
Refugee camps	-0.362* (0.210)	-0.021** (0.009)	-0.338** (0.138)	-0.318 (0.196)	-0.217*** (0.080)
Female*Refugee camps	0.359 (0.387)		0.460** (0.194)	0.534** (0.216)	0.279** (0.119)
COVID	1.016 (0.746)	0.078 (0.057)	0.212 (0.205)	0.555 (0.381)	0.085 (0.107)
Constant	19.148*** (1.215)		7.222*** (1.031)	12.759*** (0.826)	0.963* (0.503)
Control Variables	Yes	Yes	Yes	Yes	Yes
Monthly Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	9,173	9,173	9,173	9,173	9,173
χ^2 test/F-test	4914675.83		10529.35	12885.84	29463.73
p-value	0.00		0.00	0.00	0.00
Pseudo R ² /Adjusted R ²	0.22		0.12	0.24	0.20

Note: The COVID dummy variable captures the period from March 11, 2020 (WHO pandemic declaration) until December 31, 2021. Estimation results for logit regression model column (1), and OLS regressions columns (3), (4) and (5). MFI clustered robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1. Note: AME: Average marginal effects.

mixed effects of the COVID-19 crisis on crowdfunding. Gama et al. (2023) found that although the pandemic initially increased the overall success rate for campaigns aiding impoverished entrepreneurs, a surge in daily COVID-19 cases was associated with lower odds of full funding. Similarly, Igra et al. (2021) observed that while crowdfunding activity spiked in response to COVID-19 in the US, outcomes disproportionately favored campaigns from wealthier and better-educated areas, thus widening existing social and financial disparities. Taken together, our results suggest that, unlike some other sectors and campaign types, crowdfunding for refugee-related causes remained relatively stable in its determinants during the pandemic period, underscoring the robustness of our core findings.

5.4. Controlling the influence of the top 3 countries (Lebanon, Jordan, and Palestine)

To further assess the robustness of our findings, we re-estimate our main models introducing a dummy variable exclusively on campaigns originating from the top three countries represented in our sample: Lebanon, Jordan, and Palestine. This approach allows us to verify whether the main results—which highlight the roles of gender composition, refugee camp affiliation, and their interactions—hold within the most prominent country contexts for refugee crowdfunding. As shown in Table 10, the core relationships identified in our full-sample analyses generally persist in this robustness test. Overall, the inclusion of this robustness check suggests that our key insights on crowdfunding

Table 10
Estimation results on crowdfunding performance: Top 3 Countries (Lebanon, Jordan, Palestine).

	(1) Success	(2) AME	(3) Funded	(4) Speed	(5) Backers
Female	1.725*** (0.288)	0.128*** (0.017)	1.062*** (0.177)	0.985*** (0.155)	0.526*** (0.093)
Male Activities	0.526*** (0.128)	0.040*** (0.007)	0.464*** (0.122)	0.321*** (0.093)	0.239*** (0.065)
Female*Male Activities	-0.123 (0.271)		-0.394** (0.186)	-0.213 (0.134)	-0.206** (0.095)
Refugee camps	-0.391 (0.242)	-0.023* (0.012)	-0.372** (0.143)	-0.412** (0.202)	-0.228*** (0.083)
Female*Refugee camps	0.360 (0.398)		0.467** (0.192)	0.555** (0.213)	0.282** (0.119)
Top 3 Countries	-0.254 (0.287)	-0.020 (0.022)	0.270* (0.145)	0.797*** (0.179)	0.077 (0.081)
Constant	19.501*** (1.185)		7.553*** (1.100)	13.688*** (0.865)	1.074* (0.538)
Control Variables	Yes	Yes	Yes	Yes	Yes
Monthly Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	9,173	9,173	9,173	9,173	9,173
χ^2 test/F-test	4108336.86		6506.15	14546.60	40084.30
p-value	0.00		0.00	0.00	0.00
Pseudo R ² /Adjusted R ²	0.22		0.12	0.25	0.20

Estimation results for logit regression model column (1), and OLS regressions columns (3), (4) and (5). MFI clustered robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1. Note: AME: Average marginal effects.

dynamics among refugee populations are not driven by these countries alone, but instead reflect trends consistent across the principal national contexts included in our dataset. This reinforces the credibility and generalizability of our main findings regarding gender effects and the unique challenges associated with refugee camp-linked campaigns.

6. Discussion

Over the past few decades, non-profit, prosocial lending platforms like Kiva have emerged as crucial tools for bridging the funding gap and offering an alternative form of entrepreneurial finance to marginalized groups, with the market projected to reach \$300 billion by 2030 (Fundera, 2023). These platforms are recognised for its potential to democratise access to finance, particularly benefiting disadvantaged groups like women and enterprises in less favourable locations (Cumming et al. 2021; Gafni et al., 2021; Greenberg, 2019; Mohammadi & Shafi 2018; Mollick & Robb 2016). Our research contributes to the contextualisation of entrepreneurship studies (Welter et al., 2019), highlighting how entrepreneurial contexts are often shaped by gender dynamics that disadvantage women compared to men. In particular, our findings contribute by adding insights into the literature on refugee female entrepreneurs, a topic that remains underexplored in existing literature (Senthanaar et al., 2021). For female refugee entrepreneurs, traditional financing options are even more limited due to discriminatory practices that favour male entrepreneurs and non-displaced individuals, as well as barriers such as lack of formal documentation (Al-Dajani, 2022). It is important to acknowledge that the present study's dataset overrepresents certain geographies and refugee populations, while other regions and major refugee groups remain underrepresented or absent, which may limit the generalizability of the findings.

Our findings support our Hypothesis H1, that female refugee entrepreneurs' campaigns outperform those of their male counterparts on non-profit, prosocial lending platforms like Kiva. This result is consistent with research on MFIs which demonstrates a favourable bias towards female borrowers (D'Espallier et al., 2013). As such, we expected such findings to be consistent in crowdfunding platforms with MFI borrowing, consistent with research on such platforms regarding success (Figueroa-Armijos & Berns, 2022), funding time (Gafni et al., 2021; Moss et al., 2015), funding speed (Ly & Mason, 2012), as well as prosocial crowdfunding research in the refugee context (Emanuel-Correia

et al., 2022; Gama et al., 2023). These findings align with evidence that on lending-based, socially motivated platforms, which has demonstrated superior performance for women in terms of backing success (Figueroa-Armijos and Berns, 2022), funding time (Gafni, Hudon, and Périlleux, 2021; Moss, Neubaum, and Meyskens, 2015), and funding speed (Ly and Mason, 2012). Furthermore, these results are consistent with prosocial crowdfunding studies specifically focused on the refugee context (Emanuel-Correia et al., 2022; Gama et al., 2023).

Non-profit, prosocial lending platforms like Kiva have demonstrated significant potential in supporting entrepreneurship among female refugees. These platforms provide crucial access to financial resources necessary for survival and business development, particularly when traditional financing avenues are inaccessible due to refugee status limitations. This approach is especially valuable given the compounded social challenges women generally face, including gender discrimination in a field traditionally dominated by male stereotypes, such as entrepreneurship (Al-Dajani et al., 2019). By leveraging the power of online communities and risk-tolerant lenders, platforms like Kiva offer a viable alternative for female refugee entrepreneurs, and sometimes maybe the *only* alternative to conventional financial institutions, which often perceive refugees and women as high-risk borrowers (Dhawan et al., 2022). Our findings and recommendations are specific to this type of non-profit, prosocial lending platforms, whose missions tend to focus on social and developmental outcomes. Such findings might not apply to other crowdfunding models, such as for-profit lending platforms, who might introduce high financial risks and repayment pressures to refugee borrowers, further entrenching their vulnerabilities.

Our findings also support Hypothesis H2, demonstrating that campaigns in male-dominated activities outperform those in female-dominated activities and also Hypothesis H3, in which female refugees in male-dominated activities were achieving worse crowdfunding outcomes than male refugees in similar activities. This aligns with the assertion that entrepreneurship is a gendered phenomenon (Nguyen, 2021; Eagly & Karau, 2002), portraying it as mainly a stereotypically masculine endeavour (Jennings & Brush, 2013). Furthermore, our findings support Hypothesis H4, revealing that female entrepreneurs in refugee camps not only experience a significant advantage in funding speed but also demonstrate a notable comparative advantage when engaging in male-dominated activities. This suggests that the relationship between gendered-sectorial dominance and crowdfunding

outcomes is moderated by gender, with female entrepreneurs showing a stronger comparative advantage in female-dominated activities compared to male-dominated ones. Drawing on gender role congruity theory, our findings suggest that indeed crowdfunding backers still exhibit gender stereotypes in their financial decisions within crowd-funded microfinance. Backers may perceive an incongruence between women's gender roles and stereotypically masculine roles (Heilman 2001), leading to prejudice against female refugee entrepreneurs in masculine-dominated fields. Finally, regarding control variables, loan-campaign variables regarding size, maturity and repayment are aligned with previous findings (e.g., Emanuel-Correia et al. 2022).

In this study, we have also explored the interaction effects of female entrepreneurs in relation to the presence of refugee camps, as indicated by the dummy variable for campaigns located in cities with refugee camps. The results reveal that female entrepreneurs demonstrate a positive and statistically significant relationship with all crowdfunding performance variables, indicating that their campaigns are more likely to succeed, attract funding, and garner backers when situated in these contexts aligned with previous findings regarding female refugees in entrepreneurial context (e.g., Gama et al. 2023). Specifically, the presence of refugee camps also shows a positive and significant impact on crowdfunding outcomes, although the significance levels vary across different performance metrics. For the *success* and funding *speed*, the significance is observed at the 10 % level, while the amount *funded* and number of *backers* achieve both stronger significance at the 5 % level and 1 % level, respectively.

The implications of these findings suggest that non-profit, prosocial lending platforms such as Kiva must carefully consider how to address persistent gender stereotypes and biases in their lending practices, even as they aim to support female refugee entrepreneurs. While Kiva has made significant strides in providing financial access to women, with over 80 % of their loans going to female borrowers (Kiva, 2023), the platform must go beyond simply increasing the number of women served. Instead, Kiva should focus on institutionalising gender equity and challenging stereotypes about women's roles in entrepreneurship. These recommendations are specific to the mission and operational model of platforms like Kiva and may not be directly applicable to other types of crowdfunding.

One approach Kiva could take is to implement targeted education and awareness campaigns for lenders, highlighting the potential of women in male-dominated activities. This could help counteract unconscious behavioural biases and encourage more equitable funding across all industries. Additionally, Kiva could consider incorporating a Gender Equity Assessment Rating (GEAR) tool to evaluate and improve the gender practices of their lending partners (Kiva, 2024). By assessing whether lending partners offer funding for home-based businesses or provide gender-sensitive products and services, Kiva can work towards transforming the financial ecosystem to better serve women entrepreneurs, particularly those in refugee contexts who face compounded challenges. This approach is especially important given that refugee women entrepreneurs often face intersecting barriers related to their gender, refugee status, and ethnicity. As Adeeko and Treanor (2022, 36) noted, refugee women entrepreneurs encounter "multiple categories of social belonging" that compound their stigma, with gender further exacerbating the challenges associated with refugee status, ethnicity, and nationality. By addressing these intersectional challenges, Kiva can help mitigate the "perpetual struggle" these women face in legitimising their businesses and accessing resources. These efforts would align with Kiva's goal of not just serving more women, but serving them better, and could help address the persistent barriers faced by female refugee entrepreneurs in male-dominated fields.

What is unique about our finding is that we extended existing literature to include the *location* factor as we explored the impact of geographical location, specifically refugee camps, on crowdfunding decisions for refugee entrepreneurs. Our findings for Hypothesis H4 demonstrated that female refugee entrepreneurs in camp settings benefit

from positive effects on their crowdfunding outcomes. These effects are associated with both the perception of being a woman and the identification of their campaigns with specific refugee camp environments. Notably, female business creators consistently outperform their male counterparts across all metrics, even when controlling for refugee camp associations. The interaction between female creators and refugee camp projects shows a positive effect, suggesting that women-led initiatives in refugee contexts may be particularly appealing to backers. This significance of interaction effects may be attributed to different factors, which require further investigation. However, one justification for this could be the strong policy interest in advancing women's economic empowerment and promoting gender equality through entrepreneurship in conflict-affected areas and refugee camps (Althathini et al., 2022). Organisations such as UN Women and various NGOs actively support these efforts (see, for example, UNRWA's initiatives to empower Palestinian female refugee entrepreneurs in Palestine, Lebanon, and Jordan). The socio-economic context of refugee camps may foster solidarity and support for female-led initiatives, encouraging backers to contribute to campaigns that align with values of empowerment and resilience. Furthermore, refugee women can establish "secret" production networks (Al-Dajani et al., 2019) or form cooperatives (UNHCR, 2023) to effectively manage the creation of traditional crafts and empower other women, thereby overcoming the restrictive limitations imposed by their environment, which ultimately encourages backers to support their efforts.

This finding is crucial, as literature has shown that access to financing remains the most significant barrier for refugee camp entrepreneurs (Kachkar, 2019; De la Chaux & Haugh, 2020). Non-profit, prosocial lending platforms like Kiva could potentially assist refugee camp entrepreneurs who currently rely on informal lending and personal networks for funding (De la Chaux & Haugh, 2020), which can be challenging, especially if their networks are also within the camps. Access to finance is vital for refugee camp entrepreneurs, particularly female entrepreneurs who face even greater barriers to funding and entrepreneurship, despite entrepreneurship often being a necessity for survival (Backman, Lopez & Rowe, 2021). The potential for such platforms to serve as a source of financial inclusion for refugees is significant, supporting other literature arguing for microfinance's ability to create equitable access to financial resources for underrepresented groups (Fisch et al., 2022), including refugee entrepreneurs (Emanuel-Correia et al., 2022; Gama et al., 2023). However, these benefits are specific to the lending-based, socially motivated model and may not extend to other forms of crowdfunding.

7. Conclusion

Crowdfunding holds promise for alleviating funding challenges faced by marginalized groups, including female entrepreneurs and refugees (Cumming, Meoli, & Vismara, 2021). Our study offers significant insights into the dynamics of crowdfunding for refugee entrepreneurs, incorporating the focus on the role of gender and geographical location effects, specifically refugee camps. While our findings agree with existing literature on the gender dynamics of entrepreneurship, especially in the funding landscape, the novelty of our findings is in demonstrating the unique gender dynamics in crowdfunding for entrepreneurship in refugee camp locations. Specifically, we have found that female refugee entrepreneurs, especially those in refugee camp settings, consistently outperform their male counterparts across all crowdfunding performance metrics. This success challenges existing gendered stereotypes in entrepreneurship and highlights the resilience and entrepreneurial potential of women in refugee contexts.

The findings reiterate the critical role that crowdfunding platforms can play in addressing the persistent financing gap faced by refugee entrepreneurs, especially women who often encounter substantial barriers when trying to access traditional funding mechanisms. Crowdfunding has the capability of leveraging the power of online

communities and microfinance, creating more equitable access to financial resources for underrepresented groups, especially ones that are often ignored such as refugees in refugee camp locations.

Our study highlights that crowdfunding platforms such as Kiva *should* institutionalise gender equity to actively combat gender biases in their lending practices. This involves actively supporting female entrepreneurs but also challenging and reshaping perceptions about women's roles and biases on what an entrepreneur should look like. Furthermore, our research highlights the value of considering the geographical context in the literature on refugee entrepreneurship, microfinance, and crowdfunding, particularly the unique environment of refugee camps. As the field of crowdfunding through refugee entrepreneurship contexts continues to evolve, these findings provide valuable guidance for policy direction and delivery, crowdfunding platform operations, and academics alike. They point towards a more nuanced understanding where crowdfunding serves as a powerful tool for financial inclusion and economic empowerment by taking into consideration intersectionality and its effects.

This study offers important insights into crowdfunding dynamics for refugee entrepreneurs, while we remain mindful of its limitations. First, our dataset overrepresents certain geographies and refugee populations, which may limit the generalisability of our findings. Future research should aim to include a broader and more diverse range of regions and refugee groups to better capture how gender, culture, and contextual factors influence crowdfunding outcomes, thereby enabling the development of more tailored and equitable financial inclusion strategies. Second, our analysis focuses exclusively on quantitative data from the Kiva crowdfunding platform, using the lens of sector studies and Role Congruity Theory to understand financing outcomes. Although Kiva provides valuable insights, its microfinance lending model may not fully capture the variety of crowdfunding experiences relevant to refugee women entrepreneurs, particularly those in refugee camp settings. Expanding research to consider other crowdfunding models, such as donation and reward-based platforms, would provide a more comprehensive perspective. Third, our reliance on quantitative methods limits the ability to deeply explore the social and structural mechanisms that underpin crowdfunding success. Future studies employing qualitative or mixed-method approaches could offer richer, more nuanced insights. Fourth, we were unable to separately analyze group loans and individual loans due to severe econometric constraints in the group loan subsample. Group lending involves distinct theoretical mechanisms—including joint liability, peer monitoring, and collective reputation effects (e.g., Abbink et al., 2006)—that may interact with gender and refugee status in ways our pooled analysis cannot fully capture. Our attempts to estimate separate models for the group loan subsample ($N = 411$, representing 4.5 % of observations) encountered issues of quasi-complete separation in logistic regressions and insufficient degrees of freedom in OLS models, rendering maximum likelihood estimation infeasible and precluding reliable inference. Consequently, we used a pooled-sample approach with group loan type as a control variable, under these small-subsample constraints (Wooldridge, 2010). Our findings should therefore be interpreted primarily as reflecting individual loan dynamics ($N = 8762$, or 95.5 % of sample), with generalizability to group lending contexts remaining uncertain. Future research with larger, more balanced samples across lending modalities would allow explicit testing of whether our core relationships differ between individual and group loans.

Fifth, temporal heterogeneity in our data presents analytical challenges. Our sample spans 2015–2021, including nearly two years of the

COVID-19 pandemic (March 2020–December 2021). While we control for this period using a COVID dummy variable and find no statistically significant effect on crowdfunding outcomes (Table 9), attempts to estimate separate models exclusively on the COVID-period subsample encountered similar econometric constraints as the group loan analysis: insufficient sample size and degrees of freedom prevented reliable estimation of our full specification with monthly fixed effects and clustered standard errors. The null COVID effect we observe suggests that determinants of refugee crowdfunding success remained relatively stable during the pandemic—contrasting with heterogeneous effects documented in other contexts (Gama et al., 2023; Igra et al., 2021)—but this finding warrants cautious interpretation given potential power limitations in detecting moderating effects. Future research with larger temporal windows or alternative identification strategies (e.g., synthetic control methods, difference-in-differences) could provide more definitive evidence on how crisis periods affect refugee entrepreneurial finance.

Finally, incorporating feminist and marginalisation theories could enhance understanding of the intersectional barriers faced by refugee women entrepreneurs, informing more inclusive policies and platform designs that better address their unique challenges.

8. Data statement

The data that support the findings of this study are available in the Kiva Data Snapshots repository at <https://www.kiva.org/build/data-snapshots>. These data were derived from resources available in the public domain:

Snapshots CSV: https://s3.kiva.org/snapshots/kiva_ds_csv.zip.

Snapshots JSON: https://s3.kiva.org/snapshots/kiva_ds_json.zip.

Additional supporting materials, including replication files, are available from the corresponding author upon reasonable request, in accordance with the journal's guidelines on data transparency and reproducibility.

CRedit authorship contribution statement

Ricardo Emanuel-Correia: Writing – original draft, Visualization, Validation, Software, Resources, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Syahirah Abdul-Rahman:** Writing – review & editing, Writing – original draft, Validation, Methodology, Investigation, Formal analysis, Conceptualization. **Doaa Althalathini:** Writing – review & editing, Writing – original draft, Validation, Methodology, Investigation, Formal analysis, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A

Table A1

List of Male-dominated activities (in alphabetical order).

Animal Sales	Farm Supplies	Phone Accessories
Aquaculture	Farming	Phone Repair
Arts	Fish Selling	Phone Use Sales
Auto Repair	Fishing	Photography
Bakery	Fruits & Vegetables	Pigs
Barber Shop	Fuel/Firewood	Poultry
Beekeeping	Furniture Making	Printing
Beverages	Games	Property
Bicycle Repair	General Store	Pub
Blacksmith	Grocery Store	Quarrying
Bookstore	Hardware	Recycled Materials
Bricks	Hotel	Recycling
Butcher Shop	Internet Cafe	Restaurant
Café	Land Rental	Rickshaw
Carpentry	Laundry	Secretarial Services
Catering	Liquor Store/Off-License	Services
Cattle	Livestock	Shoe Sales
Cement	Machinery Rental	Souvenir Sales
Cereals	Manufacturing	Spare Parts
Charcoal Sales	Metal Shop	Sporting Good Sales
Cobbler	Mobile Phones	Tailoring
Communications	Mobile Transactions	Taxi
Computers	Motorcycle Repair	Technology
Construction	Motorcycle Transport	Timber Sales
Construction Supplies	Music Discs & Tapes	Transportation
Electrical Goods	Musical Instruments	Upholstery
Electrician	Natural Medicines	Utilities
Electronics Repair	Office Supplies	Vehicle Repairs
Electronics Sales	Paper Sales	Veterinary Sales
Entertainment	Party Supplies	Water Distribution

Table A2

List of Female-dominated activities (in alphabetical order).

Agriculture
 Beauty Salon
 Call Center
 Cheese Making
 Child Care
 Cleaning Services
 Cloth & Dressmaking Supplies
 Clothing
 Clothing Sales
 Cosmetics Sales
 Crafts
 Dairy
 Decorations Sales
 Education provider
 Embroidery
 Florist
 Flowers
 Food
 Food Market
 Food Production/Sales
 Food Stall
 Home Products Sales
 Jewelry
 Knitting
 Milk Sales
 Perfumes
 Personal Products Sales
 Pharmacy
 Plastics Sales
 Religious Articles
 Retail
 Sewing
 Textiles
 Traveling Sales
 Used Clothing
 Used Shoes
 Weaving

Table A3

Tobit estimation results on crowdfunding performance: Female*male activities & Female*refugee camps interactions.

	(1) Funded	(2) Speed	(3) Backers
Female	1.081*** (0.173)	1.040*** (0.155)	0.531*** (0.091)
Male Activities	0.472*** (0.119)	0.345*** (0.089)	0.241*** (0.064)
Female*Male Activities	-0.430** (0.176)	-0.319** (0.143)	-0.216** (0.089)
Refugee camps	-0.355** (0.150)	-0.361* (0.215)	-0.223*** (0.085)
Female*Refugee camps	0.462** (0.193)	0.540** (0.216)	0.280** (0.119)
Size	0.242 (0.175)	-0.691*** (0.129)	0.502*** (0.088)
Maturity	-0.919*** (0.179)	-0.635** (0.275)	-0.413*** (0.067)
Repayment	-0.600*** (0.089)	-0.629*** (0.121)	-0.356*** (0.041)
Group	0.206 (0.143)	0.598*** (0.144)	0.111 (0.069)
Past experience	0.234*** (0.089)	0.130** (0.066)	0.128*** (0.044)
Campaign time	0.010*** (0.004)	-0.026*** (0.004)	0.004** (0.002)
Favorite	0.616*** (0.123)	0.133 (0.106)	0.401*** (0.066)
ALSpC	0.004*** (0.001)	0.003 (0.002)	0.002*** (0.001)
Portfolio yield	-0.021*** (0.003)	-0.030*** (0.009)	-0.013*** (0.001)
Default rate	-0.125*** (0.021)	-0.144*** (0.025)	-0.052*** (0.010)
Profitability	-0.011*** (0.004)	-0.013 (0.011)	-0.008*** (0.002)
Rating	-0.056 (0.100)	-0.202 (0.146)	-0.052 (0.048)
Legal equality	-0.205 (0.179)	0.213 (0.300)	-0.030 (0.090)
Low income	-0.148 (0.121)	0.067 (0.193)	-0.109 (0.069)
Constant	7.368*** (1.076)	13.141*** (0.929)	1.021** (0.518)
Monthly Fixed Effects	Yes	Yes	Yes
Observations	9,173	9,173	9,173
F-test	10767.29	13272.36	30665.41
p-value	0.00	0.00	0.00
Pseudo R ²	0.03	0.07	0.07

Estimation results for Tobit regressions columns (3), (4) and (5). MFI clustered robust standard errors in parentheses.

*** p < 0.01, ** p < 0.05, * p < 0.1.

Data availability

Data will be made available on request.

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