The Gender Gaps in Informal Loan Markets*

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Abstract

This paper estimates gender gaps in accessing and using informal loans, along with the prevalence of unethical practices associated with these loans, using unique individual-level survey data from Thailand. The analysis provides three main findings. First, there is no significant overall gender gap in the likelihood of obtaining informal loans, but gender gaps emerge across occupations, with gaps of 6.1 and -4.0 percentage points for private-sector employees and the self-employed, respectively. Women borrow approximately 20 percent less than men and pay 5.4 percentage points higher in interest rates. Second, women are 5.9 percentage points more likely to use informal loans for business investments and 5.0 percentage points less likely to use them for necessary expenses. Third, women are more inclined to borrow from in-area private lenders and loan sharks, facing a 3.4 percentage points higher likelihood of physical threats but a 1.5 percentage points lower likelihood of predatory contracts. These findings highlight the need for greater financial inclusion and address the social challenges of violence within Thailand's informal loan markets.

Keywords: gender gap, informal loans, shadow economy, Thailand, loan sharks
JEL classification numbers: E26, G19, G51, J16, O17

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1 Introduction

Access to credit plays a critical role in economic development, enabling individuals and businesses to invest in opportunities that can improve livelihoods and drive growth. While formal financial markets often serve this purpose, millions of individuals globally, particularly in developing countries, lack access to formal credit due to barriers such as demanding eligibility requirements, lack of collateral, and limited financial literacy. For many of these individuals, informal lending markets—known for their flexibility and lack of regulation—become an essential alternative. However, informal loans frequently carry risks, including predatory contracts, high interest rates, and unethical practices such as threats and violence, which can significantly affect borrower welfare. In Thailand, informal lending is widespread, particularly among lower-income individuals and those in remote areas with limited access to formal banking services.

Despite the economic importance of informal loans, the dynamics of borrower experiences in these markets, especially concerning gender, remain underexplored. Existing literature has shown that women often face distinct challenges in accessing and using financial services, as they tend to be more financially excluded and may face discriminatory practices. Given these factors, understanding whether gender influences access to and the use of informal loans—and the potential social risks associated with these loans—offers valuable insights for promoting equitable financial inclusion.

This paper addresses the knowledge gap in understanding gender gaps in informal loan markets using unique individual-level survey data from the Legal Aid Center for Debtors and Victims of Injustice (LADVIMOJ). This dataset, covering approximately 4,800 individuals across 12 provinces in Thailand, allows for an in-depth analysis of borrowing behavior, loan characteristics, and associated risks among men and women. By focusing on access to informal loans, the amounts of informal loans, the corresponding interest rates, and the reasons for the loans, this study aims to capture a comprehensive picture of gender gaps within informal lending. Furthermore, it investigates the lender types and incidence of unethical practices, such as predatory contracts and physical threats, to assess potential social problems faced by borrowers.

The estimation strategy proceeds in three stages. First, gender gaps in the likelihood of taking out an informal loan, loan amounts, and interest rates are estimated using binary regression models and fixed effects regression. Second, I estimate these gender gaps across subgroups, defined by occupation, household status, and region, capturing potential heterogeneity in informal loan access and usage. Third, the analysis explores gender gaps in borrowing motivations, sources of informal loans, and borrower challenges by applying multinomial Logit models, which account for the categorical nature of these outcomes.

The empirical analysis yields three main findings. First, there is no significant overall gender gap in the likelihood of obtaining informal loans; however, women borrow approximately 20 percent less than men and pay 5.4 percentage points higher in interest rates. The gender gap in interest rates remains robust across various specifications, with estimates consistently falling within a narrow range of 5.3 to 5.6 percentage points. The Blinder-Oaxaca decomposition (Blinder, 1973;

Oaxaca, 1973) suggests that 47.4 percent of the gender gap in loan amounts can be attributed to observable characteristics, while the remaining 52.6 percent remains unexplained. For interest rates, the decomposition identifies a total gap of 5.61 percentage points, with only 0.16 percentage points explained by observable characteristics, leaving the vast majority of the gap unexplained.

Second, the analysis finds that gender gaps vary significantly across occupations, household status, and regions. In the private sector, women are 6.1 percentage points more likely to obtain informal loans than men, yet they borrow 41.9 percent less and face interest rates that are 7.8 percentage points higher per month. Among the self-employed, women are 4.0 percentage points less likely to take out informal loans and borrow 21.3 percent less than their male counterparts. Among household heads and their spouses, women borrow 23.0 percent less than men and pay interest rates that are 5.1 percentage points higher per month.

Regional variations in the gender gap further highlight the role of local contexts in informal lending practices. In Bangkok, the initial gender gap in informal loan access disappears once additional controls are applied, suggesting that other factors may explain the observed differences. In the Northeastern region, however, the gender gap persists: women are more likely than men to obtain informal loans but tend to borrow significantly smaller amounts. The Eastern region shows a negative gender gap in both loan access and loan amounts, indicating that women are less likely to participate in informal lending and, when they do, borrow less than men. In the Central region, women borrow smaller amounts and face higher interest rates compared to men. Finally, in the Northern region, women benefit from notably lower interest rates on informal loans than their male counterparts.

Third, the study examines the reasons for borrowing, sources of informal loans, and social issues encountered by borrowers. Women are 5.9 percentage points more likely to use informal loans for business investments and 5.0 percentage points less likely to borrow for necessary expenses compared to men. In terms of lender choice, women are 8.7 percentage points more likely to borrow from in-area private lenders and 3.2 percentage points more likely to rely on loan sharks, whereas men have a 10.5 percentage point higher likelihood of borrowing from out-of-area lenders. Social challenges further differentiate borrower experiences: women are 3.4 percentage points more likely to face physical threats and 1.9 percentage points less likely to encounter predatory contracts, such as unfair or opaque terms. These findings suggest additional social challenges for women in the informal loan market, such as violence and intimidation. Addressing these gender-specific risks is essential not only for closing the gender gap in credit access but also for mitigating the social challenges stemming from violence and exploitation in informal lending.

This paper contributes to the existing literature by providing empirical evidence on gender gaps within informal loan markets. It bridges the gap between two distinct research branches: gender gaps and informal lending—an underexplored area in financial research. A significant body of literature has focused on various aspects of gender gaps in formal financial markets, including financial inclusion, access to credit, investment behavior, and financial literacy. Empirical studies consistently find that women face greater barriers to accessing credit from formal financial institu-

tions For example, Adegbite and Machethe (2020) document gender gaps in credit access among smallholder farmers in Nigeria, while Alesina et al. (2013) show evidence that in Italy, women pay more for credit than men. Aterido et al. (2013) show unconditional gender gaps in access to finance across Sub-Saharan Africa, and Ghosh and Vinod (2017) highlight similar gaps in access to and usage of financial services in India. Morsy (2020), using data from the World Bank Global Findex database across 141 countries, demonstrates persistent gender gaps in access to finance. Chen et al. (2020) investigate gender gaps in China's online credit market, showing that women face similar barriers even in digital lending. While extensive literature has examined gender gaps in formal financial markets, this study uniquely addresses informal lending—an important source of credit for individuals in developing countries who lack access to formal financial services.

A number of studies consider the effect of the gender of entrepreneur on credit access, such as Andres et al. (2021), Aristei and Gallo (2016), Asiedu et al. (2012), Chundakkadan and Sasidharan (2021), Morazzoni and Sy (2022), Ongena and Popov (2016), Pham and Talavera (2018), Seema et al. (2021), and Wellalage and Thrikawala (2021). Other related studies investigate a gender gap in the stock markets. Almenberg and Dreber (2015) find that women participate less than men in the stock market. Marinelli et al. (2017) compare gender differences in investment behavior. Tinghög et al. (2021) examine the gender gap in financial literacy. This paper contributes to this line of research by complementing the broader financial landscape with evidence on gender gaps in informal loan markets.

There are a number of previous studies on gender gaps in Thailand, but most of them focus on gender wage gaps (e.g., Bui and Permpoonwiwat, 2015; Jithitikulchai, 2018; Khorpetch and Kulkolkarn, 2011; Liao and Paweenawat, 2021; Nakavachara, 2010). Grohmann et al. (2021) study a gender gap in financial literacy among middle-class people in Thailand and conclude that women and men in Thailand have similar levels of financial literacy. None of these works have examined the gender gap in the informal markets.

The second branch of the literature is on the determinants of informal lending. The literature has examined informal lending markets in various contexts. For example, Benvenuti et al. (2021) study informal credit in Italy and conclude that households with access to formal credit are more likely to borrow from relatives or friends, particularly when facing repayment difficulties. Similarly, Guirkinger (2008) studies farm households in Piura, Peru, and finds that many choose informal loans over formal credit despite higher interest rates. This preference is attributed to the lower transaction costs and reduced risk associated with informal lending, as well as its accessibility for borrowers excluded from formal markets. In Egypt, Mohieldin and Wright (2000) explore factors influencing households' use of either formal or informal loans. In terms of informal loans in Thailand, our paper is closely related to those of Siamwalla et al. (1990) and Tanomchat and Sampattavanija (2018). Tanomchat and Sampattavanija (2018) find a correlation between informal interest rates and the degree of the lenders' influence because borrowers with high default risks receive high interest rates, and the only lenders who have influence are willing to lend to these debtors. Karaivanov and Kessler (2018) find that informal loans have a low interest rate (often

lower than those for formal loans) and are preferred for smaller projects with low default risk. Kislat (2015) and Kislat et al. (2017) analyze the informal lending of rural households in Thailand. Kaboski and Townsend (2005) and Pitt and Khandker (1998) examine the benefits of the government's program on informal loans.

While prior studies have analyzed access to informal financial markets and explored the complementarity between formal and informal lending, they have not examined the specific gender gaps within informal markets. This paper addresses this gap by studying gender gaps in informal loan access, loan amounts, interest rates, reasons for borrowing, and exposure to unethical practices.

The remainder of the paper is structured as follows. Section 2 provides background on the informal lending situation in Thailand. Section 3 describes the data and variables and outlines the methodology. Section 4 presents the main results on gender gaps in the likelihood of obtaining an informal loan, amounts borrowed, and interest rates. Section 5 extends the analysis to explore gender gaps across subgroups defined by occupation, household status, and region. Section 6 examines gender gaps in borrowing motivations, sources of informal loans, and challenges faced by borrowers. Section 7 provides policy recommendations. Section 8 concludes the paper. Section A.1 in the appendix explains the data cleaning procedure.

2 Background on Gender Gap in Informal Lending in Thailand

The gender gap in access to informal loans is a phenomenon with significant implications for women's economic and social well-being, particularly in developing economies such as Thailand. Informal loans—typically sourced from private lenders or loan sharks—are essential in providing quick credit access but frequently involve considerable risks. This section explores the underlying causes of the gender gap in informal loan access in Thailand, highlighting the social and economic implications for women.

Informal lending systems operate outside the legal and regulatory frameworks governing formal financial institutions. This lack of oversight allows for flexibility but also increases susceptibility to exploitative practices. Women in Thailand, as in many developing economies, are disproportionately reliant on informal credit channels due to several structural and economic factors. Thailand's labor market sees women overrepresented in informal sectors such as small-scale agriculture, domestic work, and street vending—sectors that provide minimal job security, low wages, and limited access to social protections, including health insurance and pension schemes. These precarious jobs expose women to income volatility, making informal loans an attractive option to bridge consumption gaps during economic shocks or seasonal income fluctuations. Men, conversely, are more likely to hold formal employment, thereby benefiting from greater access to formal credit and an ability to establish credit histories.

The flexibility of informal loans is counterbalanced by the lack of borrower protections. Without regulatory supervision, informal lending markets in Thailand are prone to exploitative prac-

tices that pose particular risks to women. For instance, the absence of formal documentation and transparent terms exposes borrowers to abusive loan conditions. Evidence suggests that informal lenders may resort to aggressive collection tactics, including social harassment or even physical intimidation, to enforce repayment. Such practices amplify the financial and emotional burdens on women, who often face additional pressures from household financial management.

Some informal lenders also exploit legal loopholes through "shadow contracts" designed to bypass Thailand's interest rate caps. For instance, a borrower might receive 150,000 Baht in cash while signing a contract for 200,000 Baht at a superficially legal interest rate of 10 percent. While appearing legitimate, these loans impose an effective interest rate far above legal limits, disadvantaging borrowers—particularly women—who may not have access to alternative credit options.

In Thailand, women typically manage household finances, especially daily consumption needs, which places them under financial pressure. Informal loans, with their quick access and minimal bureaucratic requirements, become a go-to solution for immediate financial needs. However, this reliance can trap women in cycles of debt, with high interest rates and short repayment terms compounding their financial burdens. Men, in contrast, may not face the same pressures to seek informal credit for household needs and often have better access to formal financial services through employment or business networks.

Women's reliance on informal loans places them in a precarious economic position. Informal loans typically carry higher interest rates and shorter repayment periods than formal loans. Women who struggle to meet these repayment terms risk escalating debt, leading to severe consequences such as asset confiscation, physical harassment, or even violence. Without legal protections, women in these informal markets find themselves restricted from investing in long-term income-generating activities, trapped instead in cycles of low-income and high-cost debt.

In response to the social challenges posed by informal lending, the Department of Special Investigation (DSI) within the Ministry of Justice established the Legal Aid Center for Debtors and Victims of Injustice (LADVIMOJ) in 2012. The center provides legal assistance to borrowers trapped in exploitative lending agreements, aiming to address the lack of legal literacy that compounds the risks faced by informal borrowers. By helping borrowers understand their rights and navigate the legal system, the LADVIMOJ seeks to reduce the prevalence of unlawful lending practices and alleviate financial distress.

The gender gap in informal loan access in Thailand reflects a complex web of structural inequities, traditional gender roles, and labor market segmentation that push women toward informal credit markets. While informal loans can provide temporary immediate financial relief, they expose women to high interest rates, debt cycles, and a lack of legal protections. These economic and social consequences hinder women's ability to achieve long-term financial security, reinforcing broader gender inequalities in Thai society.

3 Data and Methodology

3.1 Data Source

This study uses unique individual-level survey data from the LADVIMOJ under the Ministry of Justice of Thailand. The data were collected by the LADVIMOJ in 2014. The dataset consists of individual-level cross-sectional data from 4,868 individuals across 105 districts (Ampour) in 12 provinces, representing all six regions of Thailand. The survey was originally designed to target 4,800 individuals, with 400 participants per province, but exceeded the target, reaching 4,868 respondents. The regions are the Bangkok metropolitan area, the Central region, the Eastern region, the Southern region, the Northern region, and the Northeastern region.

The dataset contains detailed information on individuals and their families, including the amounts and interest rates of both formal and informal loans, types of informal lenders, and the purposes of informal loans. It also includes socio-economic characteristics such as age, gender, income, and education.

The data are recorded in Thai Baht, with an exchange rate of approximately 33–34 Baht per USD at the time of collection. The key variables of interest are loan amounts and interest rates. Informal loans are borrowed from unregistered lenders, such as loan sharks, private lenders, and stores, who operate outside regulatory oversight. The interest rates for informal loans are reported as monthly rates.

After cleaning the data, the sample size was reduced from 4,868 to 4,628 observations, including 2,716 women and 1,912 men. Of these, 1,957 individuals had informal loans—1,171 women and 786 men. This means that 43.1% of women and 41.1% of men in the sample had taken informal loans.

Education is divided into two groups: (1) those without a college degree and (2) those with a college degree or higher. Occupations are grouped into four categories: (1) government employees, (2) private-sector employees, (3) self-employed, and (4) unemployed. Reasons for taking informal loans are classified into four categories: (1) business investment, (2) necessary expenses, (3) debt repayment, and (4) unnecessary expenses.

Informal lenders are grouped into four types: (1) in-area private lenders, (2) out-of-area private lenders, (3) loan sharks, and (4) stores. Private lenders are often influential individuals who lend as a side business, while loan sharks operate as part of organized crime. Stores typically offer credit with a promise of later payment. Social issues encountered with lenders are categorized as follows: (1) predatory contracts (unfair or illegal contracts, and contracts with hidden terms), (2) threats of violence, (3) other issues, and (4) no problems.

Table 1 provides the summary statistics of the main variables.

Researching informal loan markets presents unique challenges, particularly in securing reliable and honest responses from participants who may fear potential legal or social repercussions. However, several factors contribute to the high reliability of the data used in this study, collected by the Legal Aid Center for Debtors and Victims of Injustice (LADVIMOJ), a respected agency under the

Department of Special Investigation (DSI) within Thailand's Ministry of Justice.

The LADVIMOJ has established a strong reputation as an advocate for borrowers, particularly those affected by exploitative lending practices and legal challenges. Known for its role in protecting borrowers' rights, the agency likely fostered trust among respondents, encouraging them to participate honestly. This trust in the agency's advocacy role helps address a common barrier in informal market research, where respondents might otherwise withhold information due to fear of repercussions or stigma.

An additional measure that strengthens the data's reliability is the strict anonymity maintained during data collection. Respondents were assured that their identities would be protected, which was crucial in creating an environment conducive to honest disclosure. The assurance of anonymity minimizes the risk of self-censorship and reduces concerns about potential retribution from lenders or legal consequences, allowing respondents to share details of their financial situations more openly.

While the inherent challenges of surveying participants involved in informal financial activities cannot be entirely eliminated, the involvement of a trusted governmental agency and the strict measures taken to protect respondent anonymity contribute significantly to the dataset's reliability. These precautions likely mitigated biases that commonly arise in such surveys, enhancing the data's robustness for analyzing gender disparities in informal loan access and usage.

In summary, while limitations exist in researching informal financial practices, the data's reliability is reinforced by the LADVIMOJ's reputation and the measures ensuring anonymity. Consequently, the findings presented in this study provide meaningful and credible insights into gender gaps within Thailand's informal loan market.

3.2 Methodology

The analysis consists of three main stages. First, I examine gender gaps in individuals' decisions to take informal loans, the amounts of informal loans and the associated interest rates. Second, I estimate these gender gaps across subgroups, defined by occupation, household status, and region, to capture potential heterogeneity in informal loan access and usage. Third, I use multinomial regressions to explore gender gaps in the reasons for borrowing, types of lenders chosen, and the social issues faced by borrowers.

In the first stage, I estimate the gender gap in the decision to obtain an informal loan with the following model:

$$\text{Prob}\left(\text{informal loan}_i > 0\right) = \beta \text{Female}_i + \boldsymbol{X}_i \boldsymbol{\Theta} + \varepsilon_i, \tag{1}$$

where $\text{Prob}\left(\text{informal loan}_i > 0\right)$ represents the probability that individual i obtains an informal loan. Female_i is a dummy variable, which is equal to one if the individual is identified as a woman and zero otherwise. The vector $\boldsymbol{X}_i$ includes individual i's characteristics such as age, the number of household members, income, savings, a dummy variable for having a formal loan, and

the amount of formal loan (if applicable). ε_i is the error term. All reported standard errors are heteroskedasticity-robust standard errors.The set of fixed effects includes location fixed effects, education fixed effects, occupation fixed effects, household-status fixed effects. The main estimation uses linear probability models. I also report results from probit models and logit models in the robustness checks. Due to the incidental parameter problem, the probit and logit models do not include the fixed effects.

Next, I estimate gender gaps in the amounts of informal loans and interest rates associated with the loans using fixed effect regression models, specified as follows:

$$y_i = \beta \text{Female}_i + \boldsymbol{X}_i \boldsymbol{\Theta} + \varepsilon_i, \tag{2}$$

where y_i represents the outcome variables of interest: either $\log(\text{informal loan}_i)$or the interest rate. The estimated gender gap in loan amounts is converted from the estimated coefficient β to $e^{\beta} - 1$ to interpret it as a percentage difference. Model specifications vary by included control variables $\boldsymbol{X}_i$ and fixed effects.

In the second stage, I analyze the gender gap in the probability of taking out an informal loan, the amount borrowed, and the interest rates on these loans across various subgroups, categorized by occupation, household status, and region.

To capture subgroup-specific gender gaps, I extend the models in equations (1) and (2) by replacing the gender dummy with interactions between the gender dummy and an indicator for each subgroup. This approach allows for estimating gender gaps specific to each subgroup, as specified below:

$$\text{Prob}(\text{informal loan}_i > 0) = \beta_k \sum_{k=1}^{K} \text{Female}_i \times \mathbf{1}\{\text{group}_i = k\} + \boldsymbol{X}_i \boldsymbol{\Theta} + \varepsilon_i, \tag{3}$$

$$y_i = \beta_k \sum_{k=1}^{K} \text{Female}_i \times \mathbf{1}\{\text{group}_i = k\} + \boldsymbol{X}_i \boldsymbol{\Theta} + \varepsilon_i, \tag{4}$$

where $\mathbf{1}\{\text{group}_i = k\}$ is a dummy variable equal to one if observation i belongs to subgroup k and zero otherwise, K represents the number of groups, and y_i represents the outcome variable of interest, either the loan amount or the interest rate.

This approach allows for subgroup-specific estimates of gender gaps, providing insights into how the gender gap varies across occupation, household status, and region.

Each subsection presents two model specifications. The first specification, referred to as Model 1, includes only the interaction terms for the gender gap dummy variable. The estimates can be interpreted as unconditional subgroup-specific gender gaps, serving as a baseline for comparison. The second specification, Model 2, incorporates a comprehensive range of controls—age, the number of household members, income, savings, a dummy variable for formal loan access, and the amount of formal loans—as well as fixed effects for location, education, occupation, and household status.

In the third stage, I explore gender gaps across three dimensions: reasons for borrowing, types of lenders, and social challenges encountered by borrowers. To estimate gaps in these categorical outcomes, I use multinomial logistic regressions, specified as follows:

$$\text{Prob}\left(\text{outcome}_i = j\right) = \beta \text{Female}_i + \boldsymbol{X}_i \boldsymbol{\Theta} + \varepsilon_i, \tag{5}$$

where the dependent variable $\text{Prob}\left(\text{outcome}_i = j\right)$ represents the probability that individual i falls into category j.

To further examine gender gaps in borrowing motivations and lender preferences by occupation, I extend the multinomial logistic model in equations (5) by interacting the gender variable with indicators for each subgroup of interest:

$$\text{Prob}\left(\text{outcome}_i = j\right) = \beta_k \sum_{k=1}^{K} \text{Female}_i \times \mathbf{1}\left\{\text{group}_i = k\right\} + \boldsymbol{X}_i \boldsymbol{\Theta} + \varepsilon_i, \tag{6}$$

where $\mathbf{1}\left\{\text{group}_i = k\right\}$ denotes an indicator function that equals one if observation i belongs to occupation group k and zero otherwise.

4 The Main Empirical Results

This section presents the main results on gender gaps in the likelihood of obtaining an informal loan, the amounts borrowed, and the interest rates on the informal loans.

4.1 The gender gap in the likelihood of obtaining an informal loan

In this subsection, I estimate equation (1) using a linear probability model, with results presented in Table 2. Reported standard errors, shown in parentheses, are heteroskedasticity-robust. For robustness, I complement these results with probit and logit model estimates, available in Tables Tables A.1 and A.2 in the Online Appendix.[1]

In Column (1), I begin with a simple model without control variables, where the marginal effect of Female_i is 0.02 and is not statistically significant. Columns (2) through (5) include fixed effects for location, education, occupation, and household status and progressively add layers of control variables. Specifically, Column (2) includes these fixed effects, resulting in an estimated effect of 0.012, which also remains statistically insignificant.

In Column (3), I further control for age, the number of household members, income, and savings, leading to a marginal effect of 0.008. Column (4) introduces an indicator for formal loan access, with the marginal effect slightly increasing to 0.013. Finally, Column (5) incorporates the amount of informal loans, where the effect remains stable at 0.013.

[1]Given the non-linear specifications of probit and logit models, I report marginal effects to present the sensitivity of informal loan acquisition probability to each explanatory variable.

The results across all specifications consistently indicate no statistically significant gender gap in the likelihood of obtaining an informal loan.

4.2 The gender gap in the amounts of informal loans

To estimate the gender gap in informal loan amounts, I apply the model specifications outlined in equation (2).

Table 3 presents the estimated gender gap in informal loan amounts, with results indicating that women tend to receive smaller loan amounts than men. The estimated gender gap is converted from the estimated coefficient using $e^{\beta} - 1$ to interpret it as a percentage difference.

Columns (1) and (2) show results from the baseline specification. Column (1) includes no fixed effects, while the subsequent columns incorporate fixed effects for location, education, occupation, and household status. The estimate in Column (1) is -0.396, suggesting that women borrow approximately 32.7 percent less than men. When fixed effects for location, education, occupation, and household status are added in Column (2), the coefficient decreases to -0.289, indicating a gender gap of about 25.1 percent between men and women with comparable characteristics.

In Column (3), additional controls for age, the number of household members, income, and savings further reduce the coefficient to -0.219, translating to a 19.7 percent gender gap. Columns (4) and (5), which include additional controls for formal loan status, yield coefficients of -0.222 and -0.228, respectively, indicating gender gaps of -19.9 percent and -20.4 percent.

Overall, the estimates consistently indicate a persistent gender gap in informal loan amounts, with women borrowing approximately 20 percent less than men, even after accounting for a range of socioeconomic factors.

A Blinder-Oaxaca decomposition analysis suggests that the total gap in loan amounts is 32.7 percent, with 15.5 percent attributed to the explained portion and 17.2 percent to the unexplained portion. The explained part, which reflects observable characteristics such as income, age, education, and occupation, accounts for 47.4 percent of the total gap. The remaining 57.3 percent, which is the unexplained portion, reflects factors beyond observable characteristics, such as lender biases or social barriers, that uniquely impact women's access to or negotiation in informal lending.

4.3 The gender gap in the interest rates

The gender gap in the interest rates on informal loans is estimated using the model specifications outlined in equation (2). The estimation results are shown in Table 4 .

The baseline regression in Column (1), which excludes control variables, suggests a positive gender gap, with women paying interest rates approximately 5.6 percentage points higher than those paid by men. Columns (2) through (5) incorporate fixed effects for location, education, occupation, and household status. In Column (2), after introducing fixed effects, this gap narrows slightly to 5.4 percentage points. When additional controls for age, the number of household members, income, savings, and formal loan status are incorporated in Columns (3), (4), and (5), the coefficient stabilizes around 5.4 percentage points.

Across all specifications, the estimates consistently fall within a narrow range of 5.3 to 5.6 percentage points, indicating a robust and persistent positive gender gap in interest rates paid by women, regardless of various model adjustments.

The Blinder-Oaxaca decomposition analysis provides further insight into the gender gap in interest rates. Of the total gender gap of 5.61 percentage points, only a small portion—around 0.16 percentage points—is explained by observable characteristics, including age, income, savings, and access to formal loans. This suggests that these factors play a limited role in accounting for the interest rate difference between men and women.

The remaining 5.45 percentage points represent the substantial unexplained portion. Possible explanations for this gap could include variations in lender types that men and women typically access or differences in bargaining power that may give male borrowers an advantage in negotiating better terms.

5 Gender Gaps by Characteristics

In this section, I use use the regression in equations (3) and (4) to investigate the gender gaps in the likelihood of obtaining an informal loan, the amount borrowed, and the interest rates applied to these loans across different subgroups, categorized by occupation, household status, and region.

Each analysis shows estimates from two model specifications. Model 1 includes only the interaction terms for the gender gap dummy variable. Model 2 includes all control variables—age, the number of household members, income, savings, a dummy variable for formal loan access, and the amount of formal loans—as well as fixed effects for location, education, occupation, and household status.

5.1 The gender gaps by occupations

The empirical findings, presented in Table 5, show gender gaps across occupational groups.

Column (1) shows that self-employed women are 4.7 percentage points less likely to take out informal loans than their male counterparts, while government-employed women are 9.5 percentage points less likely. Conversely, private-sector women are 8.4 percentage points more likely than men in their sector to take an informal loan. After adding controls, the gender gap for government employees narrows to -3.2 percentage points, becoming statistically insignificant, while self-employed and private-sector gaps shift to -4.0 and 6.1 percentage points, respectively.

These estimates suggest that a gender gap in the likelihood of obtaining informal loans may indeed exist and are heterogeneous across occupations. However, when aggregated, the opposing effects across different occupational groups offset one another, creating the misleading impression that no overall gender gap is present.

Column (2) presents the gender gap in the amount of informal loans. Estimates from Model 1 indicate a negative gender gap across private-sector employees, the self-employed, and the unemployed. Specifically, women in the private sector borrow 41.9 percent less than their male counter-

parts, while self-employed women borrow 21.3 percent less than self-employed men. Among the unemployed, women borrow 29.2 percent less than men.

In Model 2, when additional control variables, including income, are incorporated, the gender gap estimates slightly change: the gap for private-sector employees decreases to -26.5 percent, and for self-employed women, it narrows to -16.8 percent. For unemployed individuals, the gender gap shifts from -29.2 percent to 313.3 percent.

Overall, these estimates align closely with the coefficients reported in Table 3, indicating that, on average, the aggregate gender gap across all occupations is approximately -20 percent.

Column (3) presents the gender gap in interest rates on informal loans. Estimates from Model 1 suggest a positive gender gap among private-sector employees, with women in this sector facing interest rates approximately 8.0 percentage points higher per month than men. When all control variables and fixed effects are included, the estimated gap narrows slightly to 7.8 percentage points per month. No statistically significant gender gap is observed in other sectors.

In conclusion, the analysis finds that women in the private sector are 6.1 percentage points more likely to obtain an informal loan, borrow 41.9 percent less in loan amounts, and face interest rates that are 7.8 percentage points higher per month than their male counterparts. For self-employed women, the likelihood of obtaining an informal loan is 4.0 percentage points lower, and they borrow 21.3 percent less in loan amounts compared to self-employed men.

5.2 The gender gaps by status in the household

Household status is categorized into four main groups: (1) the household head and their spouse, (2) children of the household head, (3) parents of the household head, and (4) other family members. The empirical results, presented in Table 6, show gender gaps across these groups.

According to Model 1, among household heads and their spouses, women are 3.0 percentage points more likely to obtain an informal loan, borrow 33.6 percent less in loan amounts, and face a 5.6 percentage points higher monthly interest rate compared to men. Among children of the household head, women are 12.3 percentage points less likely to take out an informal loan and borrow 33.6 percent less in loan amounts than their male counterparts.

In Model 2, which includes all control variables and fixed effects, the only significant gender gap persists among household heads and their spouses, where women borrow 23.0 percent less and pay an interest rate that is 5.1 percentage points higher per month than men.

5.3 The gender gaps by regions

This section examines and compares gender gaps across regions. The estimates are presented in Table 7.

The estimates in Model 1 reveal a significant positive gender gap in the Bangkok and Northeastern regions, where women are 11.5 and 5.3 percentage points more likely, respectively, to take out an informal loan compared to men. In contrast, women in the Eastern region are 17.9 percentage points less likely to obtain an informal loan than their male counterparts. Model 2 estimates

show similar patterns, with women in the Northeastern region remaining more likely to take out an informal loan (4.5 percentage points) and women in the Eastern region less likely to do so (13.3 percentage points).

For the loan amount, Model 1 indicates a substantial negative gender gap in the Bangkok and Northeastern regions. Women in Bangkok borrow 58.2 percent less than men, while in the Northeastern region, they borrow 38.5 percent less. In Model 2, when the control variables and fixed effects are included, the gender gap in Bangkok region disappears, the gender gap in the Northeastern region narrows to -36.7 percent, while the gender gaps in the Central and the Eastern are -26.1 percent and -40.7 percent, respectively.

Column (3) presents the gender gap in interest rates. In the Bangkok area, Model 1 shows a 6.4 percentage point gap, with women paying higher rates than men. However, this gap reduces to 0.8 percentage points in Model 2 and is no longer statistically significant, suggesting that the additional controls in Model 2 explain much of the initial difference. In the Northern region, the gender gap remains negative across both models, with women paying 7.2 percentage points less than men in Model 1 and 7.5 percentage points less in Model 2. The Central region has a substantial positive gap, with women paying 19.2 percentage points higher interest rates than men in Model 1; this increases marginally to 20.2 percentage points in Model 2.

In short, these results reveal significant regional heterogeneity in the gender gap for informal loans. In Bangkok, the initial gender gap in informal loan access disappears once additional controls are included, suggesting that other factors may explain the observed differences. In contrast, the gender gap in the Northeastern region persists: women are more likely than men to obtain an informal loan, though they tend to borrow significantly smaller amounts. The Eastern region displays negative gender gaps both in the likelihood of obtaining an informal loan and in loan amounts, indicating that women are less likely to participate in informal lending and, when they do, borrow less than men. In the Central region, women borrow less than men and face higher interest rates on these loans. Finally, in the Northern region, women benefit from notably lower interest rates compared to men.

6 The Gender Gaps in Other Dimensions

In this section, I examine the gender gaps in obtaining informal loans, the sources of these loans, and the challenges encountered by borrowers. This analysis aims to shed light on the factors contributing to differences in loan amounts between men and women. The estimation uses the multinomial logistic regressions, as specified in equations (5) and (6).

6.1 The gender gaps in reasons for taking out informal loans

Table 8 provides statistics on the reasons individuals choose to obtain informal loans, grouped into four primary categories: investment, necessary expenses, debt repayment, and unnecessary expenses.

The data show similar distributions across loan purposes for men and women. The most frequent reason for taking informal loans is to cover necessary expenses, accounting for 46.6 percent of loans among men and 47.0 percent among women. Investment is the second most common purpose, with 41.2 percent of loans for men and 41.8 percent for women attributed to this category. Debt repayment and unnecessary expenses are less common. Debt repayment accounts for approximately 9.8 percent for men and 9.1 percent for women, and unnecessary expenses comprise 2.4 percent and 2.2 percent for men and women, respectively. This consistency across genders suggests that the primary motivations for informal borrowing—necessary expenses and investment—do not differ significantly between men and women.

I then use multinomial logit models in equation (5) to estimate the gender gap in the reasons for obtaining informal loans. Table 9 presents the estimated marginal effects and their associated standard errors. Model 1 includes only the gender gap variable, while Model 2 adds control variables—age, the number of household members, income, savings, a dummy variable for formal loan access, and the amount of formal loans.

The estimates from Model 1 suggest that there is virtually no gender gap in the reasons for obtaining informal loans, aligning with the statistics in Table 8. However, when control variables are included in Model 2, distinct patterns emerge: a positive gender gap appears for using informal loans for business investment, and a negative gender gap is observed for using informal loans for necessary expenses. On average, women are 5.9 percentage points more likely than men to use informal loans for investment purposes and 5.0 percentage points less likely than men to use them for necessary expenses.

Table 10 presents the estimated gender gaps in borrowing reasons across occupational groups. Among government employees, women are 25.3 percentage points more likely to obtain informal loans for necessary expenses and 23.8 percentage points less likely to use them for business investment compared to men in similar roles. This pattern holds in Model 2, which incorporates additional control variables, with government-employed women showing a 26.7 percentage points higher likelihood of using informal loans for necessary expenses and a 23.9 percentage points lower likelihood of using them for business investment than their male counterparts.

In the private sector, women are 6.9 percent more likely to use informal loans for business investment and 7.5 percentage points less likely to allocate these loans toward existing debt compared to their male counterparts. Model 2, with the inclusion of additional controls, reveals a similar trend: women in the private sector are 11.5 percentage points more likely to use informal loans for business investment and 6.1 percentage points less likely to use them for debt repayment than men in comparable positions.

6.2 The gender gaps in the lenders of informal loans

Table 11 presents the distribution of informal loan sources by gender, categorized into four main lender types: in-area private lenders, out-of-area private lenders, loan sharks, and stores.

Men and women show differing preferences for loan sources. Among men, the most common

sources are out-of-area private lenders (37.7%) and loan sharks (26.8%), followed by in-area private lenders (22.6%) and stores (12.8%). For women, however, loan sharks are a more prominent source, accounting for 32.4% of loans, with in-area private lenders close behind at 30.7%. Out-of-area private lenders and stores are used by 26.8% and 10.2% of women, respectively. Overall, loan sharks are a more frequently used source among women than men, while men are more likely to use out-of-area private lenders.

Table 12 presents the empirical results from multinomial logit models, revealing a gender gap in the choice of informal loan sources. Consistent with the summary statistics, the results show that women have an 8.0 percentage points higher probability of borrowing from in-area private lenders and a 5.3 percentage points higher probability of using loan sharks compared to men. Conversely, women are 10.6 percentage points less likely to borrow from out-of-area private lenders and 2.7 percentage points less likely to borrow from stores.

In Model 2, which includes additional control variables, the gender gap for in-area private lenders rises slightly to 8.7 percentage points, while the gap for out-of-area private lenders remains largely unchanged at -10.5 percentage points. The gender gaps for loan sharks and stores, however, are no longer statistically significant, suggesting that the added controls account for these initial differences. These findings highlight a persistent gender-based divergence in lender choice for informal loans, with in-area private lenders and out-of-area private lenders showing the most robust differences across specifications.

Next, I examine the gender gap in loan sources across occupations by applying the estimation strategy from equation (6) and adjusting the dependent variable to represent lender type. Table 13 presents the marginal effects from multinomial logit models, showing gender gaps in the choice of informal loan sources across occupational categories.

For government employees, Model 1 shows that women are 21.3 percentage points more likely to borrow from out-of-area private lenders, while they have a 36.7 percentage point lower probability of using loan sharks. In Model 2, which includes additional controls, these patterns remain, though the marginal effects adjust slightly to 16.2 and -27.7 percentage points, respectively.

Among private-sector employees, women are less likely to borrow from out-of-area private lenders and more likely to use loan sharks. Model 1 estimates suggest a negative marginal effect of 10.7 percentage points for out-of-area private lenders and a positive 12.5 percentage point effect for loan sharks. Model 2 yields similar results, with a reduced probability of 10.4 percentage points for out-of-area private lenders, and a positive but slightly diminished effect of 6.3 percentage points for loan sharks.

For self-employed individuals, women are significantly more likely to use in-area private lenders, with a 15.8 percentage point increase in Model 1, slightly reduced to 12.9 percentage points in Model 2. The results also show a persistent negative gender gap for out-of-area private lenders, with women's likelihood decreasing by 13.1 percentage points in Model 1 and 12.6 percentage points in Model 2.

Among the unemployed, women have a 23.2 percentage point higher probability of borrowing

from in-area private lenders in Model 1, which declines to 18.3 percentage points in Model 2. Women in this group are less likely to use loan sharks, with a negative marginal effect of 13.9 percentage points in Model 1, widening to 26.0 percentage points in Model 2.

6.3 The gender gaps in problems with informal loans

Table 14 presents the distribution of issues encountered by informal loan borrowers, categorized by gender. The problems are divided into four types: predatory contracts, violent threats, other issues, and no problems reported.

The majority of both men and women report no problems associated with their loans, accounting for 86.0 percent of men and 83.0 percent of women. However, we can observe differences across types of issues encountered. Women are more likely than men to report encountering violent threats, with 10.3 percent of women experiencing this problem compared to 6.9 percent of men. Furthermore, 4.3 percent of women report other unspecified problems, while only 2.9 percent of men do so. Predatory contracts are relatively rare for both genders, though slightly more prevalent among men, affecting 4.2 percent of male borrowers compared to 2.3 percent of female borrowers. Overall, while most borrowers report no issues, women are more likely to experience violent threats and other unspecified problems, while being less likely to encounter predatory contracts.

Table 15 reports the estimated marginal effects from multinomial logit models, examining the gender gap in issues faced by borrowers, including predatory contracts, violent threats, other unspecified problems, and instances of no reported issues.

The estimated marginal effects align closely with the statistics in Table 14. In Model 1, which excludes control variables, the estimates indicate gender gaps in the types of problems faced by borrowers. Female borrowers are 3.1 percentage points less likely than male borrowers to report no issues with their loans, suggesting a higher overall likelihood of encountering challenges. Women are 3.6 percentage points more likely to report violent threats and 1.9 percentage points less likely to experience predatory contracts compared to men. Although the gender gap for unspecified issues is not statistically significant, women show a slight tendency toward reporting problems in this category.

The estimation results from Model 2, which incorporates additional control variables, remain largely consistent with those from Model 1. The likelihood of reporting no issues with informal loans remains lower for women, with an estimated marginal effect of -3.4 percentage points. Women are 3.4 percentage points more likely than men to experience violent threats and 1.5 percentage points less likely to encounter predatory contracts. The gender gap in reporting unspecified issues becomes statistically significant in this model, with women 1.6 percentage points more likely to report problems in this category.

7 Policy Implications

The findings of this study highlight significant gender gaps in the informal loan market in Thailand, pointing to the need for targeted policy interventions that align with both national priorities and global frameworks such as the United Nations Sustainable Development Goals (SDGs). The most relevant goal is SDG 5, which aims to achieve gender equality and empower women. Addressing the issues uncovered in this study—gaps in loan amounts, interest rates, and access—demands gender-sensitive financial policies and protections against exploitative practices in the informal financial sector.

SDG 5 advocates for ending discrimination and violence against women, ensuring equal access to economic resources, and promoting women's full participation in decision-making processes. In Thailand, women face distinct economic disadvantages within the informal loan market, which limits their capacity for economic advancement and long-term financial security. This study's results illustrate the structural barriers women encounter, and they point to the need for policies that expand women's access to formal financial services, promote financial literacy, and protect against exploitative lending.

Policies aimed at achieving gender parity in financial inclusion can bridge the divide between informal and formal markets, enabling women to invest in education, entrepreneurship, and household well-being. This effort would require cooperation between government bodies such as the Ministry of Finance and local organizations to design microloan and small business loan programs that reduce women's dependency on informal credit sources. Financial literacy programs tailored to the specific needs of women in informal sectors—such as small-scale agriculture and household-based businesses—would empower women to make informed decisions, thereby enabling them to navigate both formal and informal credit channels.

Existing government initiatives, such as the Legal Aid Center for Debtors and Victims of Injustice (LADVIMOJ) under the Ministry of Justice, play a critical role in advocating for borrowers and offering support to those facing exploitative loan agreements. Strengthening LADVIMOJ's outreach capabilities and incorporating educational programs on financial literacy and debt management can preemptively safeguard women from abusive lending practices. Furthermore, the center could broaden its reach to educate borrowers on their legal rights, reducing women's vulnerability to unfair loan agreements.

This study's insights also suggest that there is a unique opportunity for Thai government agencies to develop current financial inclusion programs to more effectively serve women in the informal economy. Adjusting these programs to focus on the specific financial needs of women could lower their dependence on informal lenders and contribute to building sustainable financial systems that benefit both women and their communities. By providing access to low-interest loans and establishing pathways for credit-building, these programs would help women shift toward more secure financial arrangements and reduce the debt cycles that often characterize informal lending.

Integrating financial technology into the government's financial inclusion programs could fur-

ther enhance accessibility for underserved groups, especially in rural or remote areas. Mobile banking and digital finance platforms offer promising avenues to connect women with formal credit, savings programs, and financial planning tools. Tailored fintech solutions—such as small loan offerings or secure online banking platforms—could address the immediate credit needs of women in informal work while promoting long-term financial planning. Leveraging these platforms would support Thailand's overarching goals of financial inclusion, economic empowerment for women, and resilience in the face of financial instability.

Based on the results of this study, there is a critical opportunity for Thai government agencies to expand existing financial inclusion programs that target underserved populations, especially women. Programs like the National Savings Fund and Village Fund could be reoriented or scaled to address the specific financial needs of women who are predominantly in informal employment. By providing low-interest loans and fostering credit-building opportunities, these programs can reduce dependency on informal lenders and create more sustainable financial ecosystems for women.

Furthermore, linking these programs to financial technology platforms can make formal credit more accessible, especially in rural or underserved regions. Mobile banking and digital finance platforms could be tailored to offer small loans, savings programs, and financial planning tools to women in informal economies, thereby supporting both financial inclusion and economic resilience.

8 Conclusion

This paper uses unique survey data from Thailand's LADVIMOJ to examine gender gaps in informal lending among approximately 4,800 individuals across 12 provinces.

The analysis finds no significant gender gap in the likelihood of taking out an informal loan; however, women borrow about 20 percent less than men and pay interest rates that are 5.3 to 5.6 percentage points higher, even when controlling for socioeconomic factors. Gender differences vary by occupation, household status, and region. Women tend to borrow for business investment while men borrow more for necessary expenses; women also favor in-area lenders, facing higher risks of physical threats, whereas men often borrow from out-of-area lenders and encounter more predatory contracts.

These findings highlight gendered challenges in informal borrowing and underscore the need for research to monitor and address evolving gender gaps in financial access.

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Appendix

A.1 Data Cleaning Procedure

This study uses unique individual-level survey data from the Legal Aid Center for Debtors and Victims of Injustice (LADVIMOJ), an agency under the Department of Special Investigation (DSI) in Thailand's Ministry of Justice. The data were collected by the LADVIMOJ in 2014.

The dataset consists of individual-level cross-sectional data from 4,868 individuals across 105 districts (Ampour) in 12 provinces, representing all six regions of Thailand. The survey was originally designed to target 4,800 individuals, with 400 participants per province, but exceeded the target, reaching 4,868 respondents. The provinces include Bangkok and Pathum Thani in the Bangkok metropolitan area; Saraburi, Ratchaburi, and Phitsanulok in the Central region; Chonburi in the Eastern region; Nakhon Si Thammarat and Songkhla in the Southern region; Chiang Rai in the Northern region; and Yasothon, Maha Sarakham, and Nong Khai in the Northeastern region.

The dataset contains detailed information on individuals and their families, including the amounts and interest rates of both formal and informal loans, types of informal lenders, and the purposes of informal loans. It also includes socio-economic characteristics such as age, gender, income, and education.

The data are recorded in Thai Baht, with an exchange rate of approximately 33–34 Baht per USD at the time of collection. The key variables of interest are loan amounts and interest rates. Formal loans refer to funds borrowed from regulated financial institutions, such as banks. In Thailand, formal loan interest rates are capped by regulatory measures. For example, personal loans have a maximum interest rate of 25% annually, while credit card interest rates are capped at 16%.

In contrast, informal loans are borrowed from unregistered lenders, such as loan sharks, private lenders, and stores, who operate outside regulatory oversight. These loans often have daily interest rates and lack formal contracts, allowing lenders to charge higher interest rates than those imposed on formal loans. The interest rates for informal loans are reported as monthly rates.

After cleaning the data, the sample size was reduced from 4,868 to 4,628 observations, including 2,716 women and 1,912 men. Of these, 1,957 individuals had informal loans—1,171 women and 786 men. This means that 43.1% of women and 41.1% of men in the sample had taken informal loans.

In the original dataset, "Education" is divided into eight categories: (1) no formal education, (2) primary school completion, (3) middle school completion, (4) high school completion, (5) associate degree, (6) bachelor's degree, (7) graduate degree, and (8) other educational levels. For this analysis, education is simplified into two groups: (1) those without a college degree and (2) those with a college degree or higher.

Occupations in the survey are initially split into nine categories: sellers, business owners, contract workers, farmers, freelancers, private employees, government employees, employees of state-

owned enterprises, and the unemployed. For this study, these are grouped into four categories: (1) government employees, (2) private-sector employees, (3) self-employed, and (4) unemployed.

Reasons for taking informal loans are classified into four categories: (1) business investment, (2) necessary expenses, (3) debt repayment, and (4) unnecessary expenses. Necessary reasons include medical expenses, tuition, household needs, and family obligations. Debt repayment covers the repayment of existing loans. Unnecessary reasons refer to luxury purchases such as mobile phones or nonessential items.

Informal lenders are grouped into four types: (1) in-area private lenders, (2) out-of-area private lenders, (3) loan sharks, and (4) stores. Private lenders are often influential individuals who lend as a side business, while loan sharks operate as part of organized crime. Stores typically offer credit with a promise of later payment.

In one survey question, borrowers were asked about social issues encountered with lenders. The response options are: (1) unfair or illegal contracts, (2) hidden terms, (3) threats of violence, (4) other issues, or (5) no problems. Due to the small answers in hidden terms, I combine unfair contracts and contracts with hidden terms together. Consequently, in this paper, issues are categorized as follows: (1) predatory contracts (unfair or illegal contracts, and contracts with hidden terms), (2) threats of violence, (3) other issues, and (4) no problems.

Table 1: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Female	4,628	0.59	0.49	0.0	1.0
Age	4,628	44.21	11.16	17.0	86.0
Income					
- in Thai Baht	4,628	15085.7	17408.1	0.0	650,000.0
- in USD	4,628	457.1	527.5	0.0	19697.0
Savings					
- in Thai Baht	4,628	749.7	1,966.0	0.0	30,000
- in USD	4,628	22.7	59.6	0.0	909.1
Informal_loan_dummy	4,628	0.42	0.49	0.0	1.0
Informal loans					
- in Thai Baht	1,957	54300.9	156937.6	200.0	4,000,000.0
- in USD	1,957	1,645.5	4,755.7	6.1	121,212.1
Interest rate on informal loans	1,957	12.51	7.98	0.0	60.0

Note: Informal loans, income, and savings are converted from Thai Baht to US Dollars at the exchange rate of 33.5 Baht to 1 USD.

Table 2: Gender gaps in the decision of taking out an informal loan: linear probability model (LPM)

	LPM coef.	LPM coef.	LPM coef.	LPM coef.	LPM coef.
Variables	(1)	(2)	(3)	(4)	(5)
Female	0.020	0.012	0.008	0.012	0.012
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Age			0.002***	0.002***	0.002***
			(0.001)	(0.001)	(0.001)
Number of members			-0.007	-0.006	-0.004
			(0.005)	(0.005)	(0.005)
log (income)			0.009*	0.012***	0.013***
			(0.005)	(0.005)	(0.005)
log (saving)			-0.008***	-0.006***	-0.006***
			(0.002)	(0.002)	(0.002)
Formal_Loan_Dummy				-0.090***	0.134*
				(0.015)	(0.079)
Formal_Loan_Dummy					-0.020***
×log (formal_loan)					(0.007)
Fixed effects	–	location education occupation HH status	location education occupation HH status	location education occupation HH status	location education occupation HH status
Observations	4,628	4,628	4,628	4,628	4,628
R-squared	0.000	0.009	0.016	0.023	0.025
Adjusted R-squared	0.000184	0.00775	0.0136	0.0208	0.0223

Note: Heteroskedasticity-robust standard errors in parentheses. *,**, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

Table 3: Gender gaps in the amount of informal loan, log (informal loan)

	OLS coef.	OLS coef.	OLS coef.	OLS coef.	OLS coef.
Variables	(1)	(2)	(3)	(4)	(5)
Female	-0.396***	-0.289***	-0.219***	-0.222***	-0.228***
	(0.059)	(0.059)	(0.056)	(0.056)	(0.055)
Age			0.002	0.002	0.002
			(0.003)	(0.003)	(0.003)
Number of members			0.163***	0.161***	0.151***
			(0.025)	(0.025)	(0.024)
log (income)			0.024	0.019	0.015
			(0.017)	(0.017)	(0.017)
log (saving)			0.067***	0.065***	0.060***
			(0.009)	(0.009)	(0.009)
Formal_Loan_Dummy				0.132**	-2.186***
				(0.059)	(0.355)
Formal_Loan_Dummy					0.206***
×log (formal_loan)					(0.032)
Fixed effects	–	location education occupation HH status	location education occupation HH status	location education occupation HH status	location education occupation HH status
Observations	1,957	1,957	1,957	1,957	1,957
R-squared	0.023	0.086	0.149	0.151	0.173
Adjusted R-squared	0.0230	0.0832	0.145	0.147	0.168

Note: Heteroskedasticity-robust standard errors in parentheses. *,**, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

Table 4: Gender gaps in interest rates on informal loans

	OLS coef.	OLS coef.	OLS coef.	OLS coef.	OLS coef.
Variables	(1)	(2)	(3)	(4)	(5)
Female	5.612**	5.471*	5.481*	5.406*	5.451*
	(2.741)	(2.921)	(2.874)	(2.843)	(2.835)
Age			0.075	0.081	0.080
			(0.154)	(0.156)	(0.156)
Number of members			-2.984	-3.026	-2.944
			(2.673)	(2.689)	(2.746)
log (income)			-1.722*	-1.850*	-1.818*
			(0.933)	(0.977)	(0.963)
log (saving)			0.476	0.429	0.467
			(0.534)	(0.537)	(0.525)
Formal_Loan_Dummy				3.101	23.014
				(3.481)	(30.550)
Formal_Loan_Dummy					-1.769
×log (formal_loan)					(2.631)
Fixed effects	–	location education occupation HH status	location education occupation HH status	location education occupation HH status	location education occupation HH status
Observations	1,957	1,957	1,957	1,957	1,957
R-squared	0.002	0.002	0.008	0.008	0.009
Adjusted R-squared	0.00137	-0.000130	0.00331	0.00332	0.00345

Note: Heteroskedasticity-robust standard errors in parentheses. *,**, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

Table 5: Gender gaps by occupations

	Prob (informal loan$_i > 0$)	Amount of informal loans	interest rate
	LPM	OLS	OLS
	coef.	coef.	coef.
Variables	(1)	(2)	(3)
Model 1			
Female×	-0.095***	0.186	12.455
Government employees	(0.036)	(0.179)	(16.500)
Female×	0.084***	-0.543***	8.049**
Private-sector employees	(0.018)	(0.065)	(3.450)
Female×	-0.047**	-0.239***	0.671
Self-employed	(0.019)	(0.078)	(3.167)
Female×	0.060	-0.345*	3.012
Unemployed	(0.046)	(0.189)	(2.165)
Observations	4,628	1,957	1,957
R-squared	0.012	0.038	0.004
Adjusted R-squared	0.0111	0.0356	0.00194
Model 2			
Female×	-0.032	-0.134	13.606
Government employees	(0.037)	(0.172)	(15.919)
Female×	0.059***	-0.311***	8.105**
Private-sector employees	(0.018)	(0.062)	(3.611)
Female×	-0.040**	-0.182**	-0.223
Self-employed	(0.019)	(0.073)	(3.264)
Female×	-0.026	1.405***	3.252
Unemployed	(0.116)	(0.389)	(4.598)
Observations	4,628	1,957	1,957
R-squared	0.030	0.181	0.012
Adjusted R-squared	0.0267	0.175	0.00454

Note: Heteroskedasticity-robust standard errors in parentheses. *,**, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively. Model 1 includes only the variables listed in the table. Model 2 includes the listed variables as well as age, the number of household members, income, savings, a dummy variable for having a formal loan, the amount of formal loan, and fixed effects for location, education level, occupation, household status.

Table 6: Gender gaps by the status in the household

	Prob (informal loan$_i > 0$)	Amount of informal loans	interest rate
	LPM	OLS	OLS
	coef.	coef.	coef.
Variables	(1)	(2)	(3)
Model 1			
Female×	0.030*	-0.409***	5.595**
Head of HH or Spouse	(0.015)	(0.061)	(2.778)
Female×	-0.123***	-0.410**	14.186
Children	(0.034)	(0.160)	(16.754)
Female×	0.089	-0.363	-3.034
Parents	(0.064)	(0.224)	(2.231)
Female×	0.048	-0.008	-0.586
Other	(0.059)	(0.210)	(2.625)
Observations	4,628	1,957	1,957
R-squared	0.005	0.025	0.003
Adjusted R-squared	0.00378	0.0232	0.000860
Model 2			
Female×	0.010	-0.262***	5.190*
Head of HH	(0.016)	(0.057)	(3.075)
Female×	-0.026	0.076	16.859
Children	(0.049)	(0.253)	(15.460)
Female×	0.142*	0.054	-0.946
Parents	(0.073)	(0.273)	(4.219)
Female×	0.088	0.377	3.520
Other	(0.070)	(0.274)	(3.378)
Observations	4,628	1,957	1,957
R-squared	0.026	0.176	0.010
Adjusted R-squared	0.0231	0.170	0.00291

Note: Heteroskedasticity-robust standard errors in parentheses. *,**, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively. Model 1 includes only the variables listed in the table. Model 2 includes the listed variables as well as age, the number of household members, income, savings, a dummy variable for having a formal loan, the amount of formal loan, and fixed effects for location, education level, occupation, household status.

Table 7: Gender gaps by regions

	Prob (informal loan$_i > 0$)	Amount of informal loans	interest rate
	LPM	OLS	OLS
	coef.	coef.	coef.
Variables	(1)	(2)	(3)
Model 1			
Female×	0.115***	-0.873***	6.383***
Bangkok region	(0.024)	(0.071)	(1.820)
Female×	0.022	-0.140	19.229*
Central region	(0.025)	(0.094)	(10.306)
Female×	-0.179***	-0.336	-2.368
Eastern region	(0.036)	(0.235)	(2.339)
Female×	-0.043*	0.010	5.503
Southern region	(0.025)	(0.114)	(5.873)
Female×	-0.048	0.067	-7.233***
Northern region	(0.032)	(0.116)	(1.907)
Female×	0.053**	-0.486***	0.902
Northeastern region	(0.022)	(0.078)	(1.842)
Observations	4,628	1,957	1,957
R-squared	0.014	0.067	0.010
Adjusted R-squared	0.0126	0.0637	0.00724
Model 2			
Female×	0.046	0.134	2.026*
Bangkok region	(0.040)	(0.107)	(1.147)
Female×	0.047*	-0.291***	19.563*
Central region	(0.026)	(0.091)	(10.569)
Female×	-0.132***	-0.523**	0.121
Eastern region	(0.037)	(0.221)	(3.122)
Female×	-0.029	-0.028	5.318
Southern region	(0.025)	(0.110)	(5.682)
Female×	-0.010	-0.111	-8.835***
Northern region	(0.033)	(0.122)	(3.081)
Female×	0.037*	-0.476***	2.773*
Northeastern region	(0.022)	(0.078)	(1.674)
Observations	4,628	1,957	1,957
R-squared	0.029	0.185	0.017
Adjusted R-squared	0.0258	0.179	0.00932

Note: Heteroskedasticity-robust standard errors in parentheses. *,**, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively. Model 1 includes only the variables listed in the table. Model 2 includes the listed variables as well as age, the number of household members, income, savings, a dummy variable for having a formal loan, the amount of formal loan, and fixed effects for location, education level, occupation, household status.

Table 8: Reasons for taking out informal loans by gender.

Gender	Investment # of obs	Necessary expenses # of obs	Debt repayment # of obs	Unnecessary expenses # of obs	Total
Men	324 41.2%	366 46.6%	77 9.8%	19 2.4%	786
Women	489 41.8%	550 47.0%	106 9.1%	26 2.2%	1171
Total	813 41.5%	916 46.8%	183 9.4%	45 2.3%	1957

Table 9: Gender gaps in the reason of borrowing informal loans

	Investment marginal	Necessary expenses marginal	Debt repayment marginal	Unnecessary expenses marginal
Variables	(1)	(2)	(3)	(4)
Model 1				
Female	0.005	0.004	-0.007	-0.002
	(0.023)	(0.023)	(0.013)	(0.007)
Model 2				
Female	0.059***	-0.050**	-0.006	-0.003
	(0.022)	(0.022)	(0.013)	(0.007)
Observations		1,957		

Note: Heteroskedasticity-robust standard errors in parentheses. *,**, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively. Model 1 includes only the variables listed in the table. Model 2 includes the listed variables as well as age, the number of household members, income, savings, a dummy variable for having a formal loan, the amount of formal loan, and fixed effects for location, education level, occupation, household status.

Table 10: Gender gaps in the reason of borrowing informal loans by occupations

	Investment marginal	Necessary expenses marginal	Debt repayment marginal	Unnecessary expenses marginal
Variables	(1)	(2)	(3)	(4)
Model 1				
Female×	-0.238***	0.253***	0.008	-0.023
Government employees	(0.09)	(0.087)	(0.033)	(0.025)
Female×	0.069**	0.016	-0.075***	-0.011
Private-sector employees	(0.03)	(0.032)	(0.018)	(0.009)
Female×	-0.055*	-0.001	0.049**	0.008
Self-employed	(0.032)	(0.033)	(0.019)	(0.01)
Female×	-0.262***	0.11	0.123***	0.029
Unemployed	(0.089)	(0.084)	(0.043)	(0.021)
Observations			1,957	
Model 2				
Female×	-0.237***	0.266***	0.004	-0.034
Government employees	(0.087)	(0.084)	(0.033)	(0.026)
Female×	0.115***	-0.047	-0.061***	-0.007
Private-sector employees	(0.03)	(0.032)	(0.018)	(0.008)
Female×	-0.010	-0.027	0.035*	0.002
Self-employed	(0.031)	(0.031)	(0.019)	(0.01)
Female×	0.048	-0.229**	0.152**	0.029
Unemployed	(0.128)	(0.115)	(0.06)	(0.025)
Observations			1,957	

Note: Heteroskedasticity-robust standard errors in parentheses. *,**, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively. Model 1 includes only the variables listed in the table. Model 2 includes the listed variables as well as age, the number of household members, income, savings, a dummy variable for having a formal loan, the amount of formal loan, and fixed effects for location, education level, occupation, household status.

Table 11: Source of informal loans by gender.

Gender	In-area private lenders	Out-of-area private lenders	Loan sharks	Stores	Total
	# of obs	# of obs	# of obs	# of obs	
Men	178 (22.6%)	296 (37.7%)	211 (26.8%)	101 (12.8%)	786
Women	359 (30.7%)	314 (26.8%)	379 (32.4%)	119 (10.2%)	1171
Total	537 (27.4%)	610 (31.2%)	590 (30.1%)	220 (11.2%)	1957

Table 12: Gender gaps in the sources of informal loans.

	In-area private lenders marginal	Out-of-area private lenders marginal	Loan sharks marginal	Stores marginal
Variables	(1)	(2)	(3)	(4)
Model 1				
Female	0.080***	-0.106***	0.053**	-0.027*
	(0.021)	(0.020)	(0.021)	(0.014)
Model 2				
Female	0.087***	-0.104***	0.031	-0.014
	(0.020)	(0.020)	(0.021)	(0.014)
Observations		1,957		

Note: Heteroskedasticity-robust standard errors in parentheses. *,**, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively. Model 1 includes only the variables listed in the table. Model 2 includes the listed variables as well as age, the number of household members, income, savings, a dummy variable for having a formal loan, the amount of formal loan, and fixed effects for location, education level, occupation, household status.

Table 13: Gender gaps in the sources of informal loans by occupations

	In-area private lenders marginal	Out-of-area private lenders marginal	Loan sharks marginal	Stores marginal
Variables	(1)	(2)	(3)	(4)
Model 1				
Female×	0.097	0.213***	-0.367***	0.057
Government employees	(0.078)	(0.082)	(0.128)	(0.049)
Female×	0.007	-0.107***	0.125***	-0.025
Private-sector employees	(0.027)	(0.029)	(0.027)	(0.019)
Female×	0.158***	-0.131***	-0.01	-0.017
Self-employed	(0.029)	(0.03)	(0.03)	(0.02)
Female×	0.232***	0.018	-0.139*	-0.110*
Unemployed	(0.071)	(0.069)	(0.081)	(0.064)
Observations		1,957		
Model 2				
Female×	0.061	0.161**	-0.270**	0.048
Government employees	(0.076)	(0.078)	(0.122)	(0.049)
Female×	0.046*	-0.104***	0.061**	-0.003
Private-sector employees	(0.027)	(0.029)	(0.028)	(0.020)
Female×	0.126***	-0.15***	0.016	-0.017
Self-employed	(0.029)	(0.03)	(0.03)	(0.020)
Female×	0.188**	0.166	-0.273**	-0.081
Unemployed	(0.095)	(0.103)	(0.108)	(0.073)
Observations		1,957		

Note: Heteroskedasticity-robust standard errors in parentheses. *,**, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively. Model 1 includes only the variables listed in the table. Model 2 includes the listed variables as well as age, the number of household members, income, savings, a dummy variable for having a formal loan, the amount of formal loan, and fixed effects for location, education level, occupation, household status.

Table 14: Problems by gender.

Gender	Predatory contracts # of obs	Violent threats # of obs	Others # of obs	No problem # of obs	Total
Men	33 (4.2%)	54 (6.9%)	23 (2.9%)	676 (86.0%)	786
Women	26 (2.3%)	121 (10.3%)	50 (4.3%)	974 (83.0%)	1171
Total	59 (3.1%)	175 (8.9%)	73 (3.7%)	1650 (84.3%)	1957

Table 15: Gender gaps in the problems of informal loans.

	Predatory contracts	Violent threats	Others	No problem
	marginal	marginal	marginal	marginal
Variables	(1)	(2)	(3)	(4)
Model 1				
Female	-0.019**	0.036***	0.014	-0.031*
	(0.008)	(0.014)	(0.009)	(0.018)
Model 2				
Female	-0.015*	0.034**	0.015	-0.034*
	(0.008)	(0.014)	(0.009)	(0.018)
Observations		1,957		

Note: Heteroskedasticity-robust standard errors in parentheses. *,**, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively. Model 1 includes only the variables listed in the table. Model 2 includes the listed variables as well as age, the number of household members, income, savings, a dummy variable for having a formal loan, the amount of formal loan, and fixed effects for location, education level, occupation, household status.

Online Appendix

Table A.1: The choice of taking out an informal loan: Probit model

	Probit marginal	Probit marginal	Probit marginal	Probit marginal
Variables	(1)	(2)	(3)	(4)
		v5	v7	v9
Female	0.020	0.015	0.015	0.015
	(0.015)	(0.015)	(0.015)	(0.015)
Age		0.002***	0.002***	0.002***
		(0.001)	(0.001)	(0.001)
		0.009**	0.013***	0.013***
		(0.005)	(0.005)	(0.005)
log (income)		-0.004	-0.003	-0.002
		(0.004)	(0.004)	(0.004)
log (saving)		-0.008***	-0.007***	-0.006***
		(0.002)	(0.002)	(0.002)
Formal_Loan_Dummy		-0.104***	-0.104***	0.025
		(0.014)	(0.014)	(0.046)
Formal_Loan_Dummy				-0.010***
×log (formal_loan)				(0.003)
Observations	4,628	4,628	4,628	4,628
Adjusted R-squared	0.000294	0.00653	0.0143	0.0159

Note: Heteroskedasticity-robust standard errors in parentheses. *,**, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

Table A.2: The choice of taking out an informal loan: Logit model

	Logit marginal	Logit marginal	Logit marginal	Logit marginal
Variables	(1)	(2)	(3)	(4)
		v13	v15	v17
Female	0.020	0.015	0.015	0.015
	(0.015)	(0.015)	(0.015)	(0.015)
Age		0.002***	0.002***	0.002***
		(0.001)	(0.001)	(0.001)
		0.009**	0.013***	0.013***
		(0.005)	(0.005)	(0.005)
log (income)		-0.004	-0.003	-0.002
		(0.004)	(0.004)	(0.004)
log (saving)		-0.008***	-0.007***	-0.006***
		(0.002)	(0.002)	(0.002)
Formal_Loan_Dummy			-0.104***	0.026
			(0.014)	(0.046)
Formal_Loan_Dummy				-0.010***
×log (formal_loan)				(0.003)
Observations	4,628	4,628	4,628	4,628
Adjusted R-squared	0.000294	0.00652	0.0146	0.0159

Note: Heteroskedasticity-robust standard errors in parentheses. *,**, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.