Jurnal Kebijakan Pemerintahan 7 (1) (2024): 1-17

JURNAL KEBIJAKAN PEMERINTAHAN

e-ISSN 2721-7051, p-ISSN 2599-3534

Website: http://ejournal/.ipdn.ac.id/JKP

Faculty of Political Government, Governance Institute of Home Affairs (IPDN)

DOI: https://doi.org/10.33701/jkp.v7i1.4303

NAVIGATING UNCERTAINTY: THE ROLE OF FINANCIAL ACCESS IN POVERTY ALLEVIATION DURING ECONOMIC CRISES

Media Wahyudi Askar[1]

[1] Faculty of Social Political Science, Gadjah Mada University

Jalan Sosio Yustitia, Caturtunggal, Depok, Kabupaten Sleman, Daerah Istimewa Yogyakarta 55281

***coresponding author**

E-mail: media.askar@ugm.ac.id

Abstract

Access to financial services has long been recognized as a vital tool in poverty alleviation and economic development. Using logistic regression analysis, the study investigates the impact of financial access, particularly access to loans, on various poverty indicators, with a focus on gender dynamics and urban-rural disparities during economic crises. The analysis reveals that access to loans significantly influences key poverty indicators, including personal income increase, obtaining loans for business ventures, and opening new businesses. While the overall impact is positive, gender-specific differences in the significance of financial access indicate the need for tailored approaches. Women entrepreneurs, in particular, benefit significantly from access to loans, highlighting the importance of customized financial inclusion programs. Furthermore, the study finds that the impact of access to loans varies between urban and rural settings, with loans playing a more critical role in stimulating entrepreneurship and economic activity in rural areas. Policy implications from the analysis emphasize inclusive financial programs for both genders and addressing urban-rural gaps. Prioritizing initiatives to enhance women's credit access and rural entrepreneurship can unlock economic potential and promote inclusive growth.

Keywords: financial access, poverty, economic crises

Abstrak

Akses ke layanan keuangan telah menjadi faktor penting dalam pengentasan kemiskinan dan pembangunan ekonomi. Dengan menggunakan analisis regresi logistik, studi ini menganalisis dampak akses keuangan, terutama akses ke pinjaman, terhadap berbagai indikator kemiskinan, dengan fokus pada dinamika gender dan kesenjangan perkotaan-pedesaan selama krisis ekonomi. Studi ini mengungkapkan bahwa akses ke pinjaman secara signifikan mempengaruhi indikator utama kemiskinan, termasuk peningkatan pendapatan, memperoleh pinjaman untuk bisnis, dan membuka bisnis baru. Meskipun dampak keseluruhannya positif, perbedaan gender dalam hal akses terhadap pembiayaan keuangan mengindikasikan kebutuhan adanya pendekatan yang berbeda. Pengusaha perempuan mendapatkan manfaat yang lebih signifikan dari akses ke pinjaman, menyoroti pentingnya desain program inklusi keuangan yang lebih tepat. Selain itu, studi ini menemukan bahwa dampak akses ke pinjaman bervariasi antara lingkungan perkotaan dan pedesaan, dengan pinjaman memainkan peran yang lebih signifikan dalam mendukung kewirausahaan dan aktivitas ekonomi di daerah pedesaan. Implikasi kebijakan dari studi ini menekankan perlunya program keuangan inklusif yang responsif gender dan mempertimbangan karakteristik perkotaan-pedesaan. Memprioritaskan inisiatif untuk meningkatkan akses kredit bagi perempuan dan kewirausahaan pedesaan dapat membuka potensi ekonomi dan mempromosikan pertumbuhan yang lebih inklusif.

Kata kunci: Akses finansial, kemiskinan, krisis ekonomi

I. INTRODUCTION

The importance of having access to financial services to reduce poverty and boost economic growth is a major focus in development economics. It is widely believed that access to financial services can help increase the income of poor people and encourage them to start small businesses (Karlan & Morduch, 2010; Rodrik & Rosenzweig, 2009). Over time, this access has grown significantly and has become a key part of

many governments economic policies. Having access to financial services is crucial for economic development because it significantly helps reduce poverty and inequality (Claessens et al., 2009). It allows people to take advantage of economic opportunities and improve their financial situation (Sukumaran, 2015). Additionally, having this access has positive effects on education, employment, and overall wealth, especially for those who haven't been able to use banking services before (Stein & Yannelis, 2020). These findings indicate just how crucial it is for people to have access to financial services so they can build wealth and have more opportunities in their lives.

By specifically focusing on entrepreneurs in Indonesia, this paper seeks to explore the complex relationship between financial access and poverty alleviation. This study delves into several key dimensions through which financial access influences poverty dynamics. First, financial access has the potential to increase the incomes of the poor, as well as boost total household consumption. Financial access facilitates income generation by enabling individuals to invest in productive activities, such as entrepreneurship and skill development. Access to finance, especially via microcredit and inclusive financial services, is essential for generating income and mitigating poverty. It allows individuals to invest in productive endeavors, like starting businesses and enhancing skills, which in turn enhances entrepreneurial outcomes (Samuel, 2023; Yi et al., 2023). Furthermore, this access facilitates resource allocation and distribution, disrupting the poverty cycle and encouraging innovation and entrepreneurship (Samuel, 2023). Inclusive finance, specifically, has the potential to fuel sustainable economic development by enabling individuals to access a broader range of economic opportunities (Corrado & Corrado, 2017).

Second, financial services play a critical role in managing risks associated with life's uncertainties, including health emergencies, natural disasters, and income fluctuations. Financial services, such as insurance offerings and emergency savings, play a vital role in navigating the uncertainties that come with life (Warner et al., 2007). They offer a means to manage risks in a way that is both effective and efficient, aiding individuals and businesses in dealing with various global uncertainties (Kocoglu, 2009). Access to financial services, like savings, payments, and credit, has been shown to have a positive impact on the incomes of the poor and their overall household spending (Batala, 2022; Prina, 2015). This is especially true for rural and impoverished households, as well as those who don't have access to traditional banking systems (Pickens et al., 2009; Song et al., 2018; Wanof, 2023). Moreover, providing financial products such as home improvement loans, school fee loans, lower interest rates, and favourable credit policies can further enhance the benefits of financial access in reducing poverty (Kimani, 2022).

Third, financial access can be a powerful tool for reducing poverty by empowering women and addressing gender inequality. Research consistently shows that access to financial services can empower women and lessen gender disparities. These services have been proven to increase women's income, savings, and purchasing power while also helping them manage emergencies and reduce dependence on local moneylenders (Siddik, 2017). Moreover, microfinance programs have been found to enhance women's economic empowerment and decision-making abilities in rural areas (Pokhriyal et al., 2014). Direct provision of financial services to women, rather than through their husbands, is identified as a critical factor in boosting their productivity and influence within their households (Fletschner & Kenney, 2014b).

A focus on gender impact is claimed for the reason that the mechanisms of financial access are more suitable for women than men. Women are able to significantly impact the economy of the family. Empowering women through financial access can greatly influence poverty eradication, but this effect might not be realized if poor communities lack access to financial institutions (Hussain et al., 2015; Shinde & Joshi, 2016). Cu (2015) discovered that access to banking positively affected women's involvement in community organizations, while Shinde and Joshi (2016) highlighted the necessity for innovative methods, like microfinance, to connect poor households with mainstream financial institutions.

This research adds to the current body of literature for various reasons. First, this study analyses the impact through a gender lens. Financial access has disparate effects on men and women due to societal and economic factors. By scrutinizing data through a gender lens, the study reveals these differences and suggests the specific needs of women in accessing financial services. Consistent research indicates that women with access to financial services, especially microfinance, tend to invest more in their businesses, education, and health, resulting in enhanced economic stability for their families (Dash et al., 2016; Fletschner & Kenney, 2014a; Pokhriyal et al., 2014; Siddik, 2017). This approach ensures that financial inclusion

initiatives address gender disparities and empower women, ultimately contributing to poverty reduction.

Second, this study allows us to examine urban and rural disparities, especially in the context of achieving financial inclusion. Urban and rural areas contend with distinct challenges concerning financial access (Pearce, 2003). Urban centres typically boast better-developed financial infrastructures, while rural locales often grapple with a shortage of such resources. By discerning between these areas, the study identifies specific needs and effective strategies for rural financial inclusion. Solutions like mobile banking and community-based financial services can effectively address the unique challenges of rural areas, thereby promoting inclusive economic growth (Ponnuraj, 2015).

Third, this study could potentially enhance financial inclusion policies. Evidence-based recommendations stemming from the study can inform policymaking endeavors aimed at enhancing financial inclusion. Policymakers can utilize these insights to design policies that incentivize financial institutions to cater to marginalized groups. Policies supporting the development of financial infrastructure, bolstering financial literacy, and encouraging financial institutions to serve low-income populations are imperative. Effective policies ensure that financial services are accessible to all, thereby fostering sustainable poverty reduction and economic development.

Lastly, this study incorporating the latest datasets, including those from the Covid-19 pandemic, yields timely insights into how financial access mitigates the adverse effects of economic crises on poverty. The pandemic has exacerbated financial instability, underscoring the critical importance of financial services, especially for vulnerable populations. The study evaluates how financial inclusion initiatives aided households in navigating income shocks during the crisis, thereby informing future policies geared toward building economic resilience.

This study is structured as follows. Initially, it provides an overview of the relationship between financial access and poverty alleviation, emphasizing the crucial role of accessible financial services in empowering marginalized communities. Following this, the methodology section will detail the approach to assessing the impact of financial access, including data and analytical techniques employed. Finally, the study will present its findings, illuminating the pathways through which improved financial access can effectively combat poverty.

II. THEORETICAL PERSPECTIVES ON FINANCIAL ACCESS AND POVERTY

2.1. Financial access as an income generation scheme

Financial resources are a crucial factor for households to make ends meet. However, this ideal condition has become a dilemma for poor people due to their limited resources, which require financial intervention. In this context, it is difficult to ignore the role of financial access as a financial intermediation to reduce poverty. Essentially, there are three tools in financial access schemes that can be used for poverty reduction: savings mobilization, friendly financial schemes, and income generation programs.

Poor people find it difficult to save their money in financial institutions due to the lack of institutional saving tools. The absence of suitable saving mechanisms for the impoverished, notably in rural regions, has persisted as a longstanding challenge (Pearce, 2003). Traditional, large-scale, formal initiatives have largely fallen short in addressing this issue, particularly concerning women (Holt & Ribe, 1991). In developing nations, including South Africa, impoverished households grapple with saving due to factors like meager incomes, excessive consumption, and market inefficiencies (Nga, 2007). Nevertheless, studies reveal that impoverished individuals do save, yet formal financial institutions often fail to cater to their requirements (Pickens et al., 2009). There is a demand for innovative strategies to enhance access to saving services for the impoverished, such as forging connections between formal and informal financial institutions (Nga, 2007).

Moreover, research consistently shows that financial access is crucial for the poor, as it enhances their saving capabilities and creates friendly financing schemes (Quach, 2005; Sharma & Zeller, 2000; Wanof, 2023). According to Harper (2003), financial access is an effective solution because poor people have limited ability to expand their savings. It has spawned more options for people with low incomes to improve their savings, not only in formal but also in informal institutions. Additionally, the presence of financial institutions will raise awareness and encourage the poor to use monetary instruments such as savings, payment systems, money transfers, and insurance, which can ultimately lead to increased liquidity and strengthen the local economy. The best practices in terms of savings can be seen in several financial institutions such as the Grameen Bank of Bangladesh, Proshika, and

BRAC (Jain, 1996; Sharma & Zeller, 1999; Yunus, 1999). These institutions require a savings scheme as a prerequisite for obtaining credits, and every borrower can choose how much to save each month. Subsequently, savings can be used to purchase properties, equipment, vehicles, livestock, or any other assets that can be converted back into cash.

Furthermore, financial access can be defined as a friendly financial scheme. Lending services are often based more on trust between lenders and borrowers. Trust is essential in lending services, especially in retail banking, small business lending, and online peer-to-peer lending (Antonakis & Sfakianakis, 2010; Hyndman et al., 2020; Sukmaningsih, 2018). In this context, trust is frequently built through the use of standardized borrower information and electronic systems (Antonakis & Sfakianakis, 2010), along with communication and relationship-based lending (Hyndman et al., 2020). This condition can potentially create financial sustainability, which is a crucial factor for the poor to achieve a double impact on both income and employment. Financial sustainability would help them to make ends meet, finance education and health, and fulfill adequate housing needs.

More importantly, financial access can act as an income generation scheme for poor people. It is widely believed that providing a credit market for the poor allows them to increase profits, net income, and living standards. Access to credit can also lead to reduced financial risk and help the poor to expand their business activities. It has commonly been assumed that financial access provides an easy avenue for the poor to improve capital and income (De Mel et al., 2008; Nathan et al., 2004). Pitt and Khandker (1998) argue that credit enhancement has a significant effect on household consumption and increases their chances of becoming self-employed. In the same vein, Armendáriz and Morduch (2005) claim that financial access plays an important role in savings mobilization. An increase in savings will improve financial capability during crises and can be used as collateral and long-term insurance.

2.2. Empirical literature

The positive impact of financial access on poverty, however, is still debatable. The ongoing discourse can be seen in Hulme and Mosley (1996)'s research, which maintains that financial access can only be felt by more privileged borrowers because low-income people find it difficult to obtain loans. A study conducted by Mosley (2001) in Bolivia also suggests that financial access is unable to reach the poor due to the absence of collateral and financial knowledge.

A study conducted by Tarozzi et al. (2015) in Ethiopia shows positive evidence. They interviewed 6000 respondents through Randomized Controlled Trials (RCTs) from 2003 to 2006 and found that financial access had a positive impact on increasing consumption and total income of borrowers, thus reducing poverty. In contrast, a negative result was found by Karlan and Zinman (2010), who conducted a study in the Philippines and concluded that there was no change in household income and poverty. Another study conducted by Ghate (2007) in Hyderabad, India, also showed that there was no impact on the earnings of borrowers and poverty reduction.

More broadly, Armendáriz and Morduch (2005) suggest that if borrowers focus more on their businesses, there is a possibility that they might not send their children to school, instead asking them to help with financial activities. In addition, as argued by Copestake et al. (2005), credit may not be used for productive activities. A lesson learned from these literature is that the impact of financial access on poor communities is mixed. However, there is a strong assumption that financial access will not be able to overcome poverty as long as it does not pay special attention to the poor.

Furthermore, it is important to note that poor communities might not have sufficient skills to manage their finances. These weaknesses have actually been realized by the proponents of financial access initiatives. They argue that financial access is not a single solution that can eliminate poverty in one stroke. Integrating financial access with other poverty programs is the best way to eradicate poverty in the world (Chowdhury, 2009). This argument is also supported by Daley-Harris and Laegreid (2006), who reveal that financial access is not a single answer to all the problems of poverty faced in developing countries. When financial access is not accompanied by government support and marketing networks, it is likely to fail in achieving its goals (Chowdhury, 2009). Hence, it should be synergized with other programs, such as macroeconomic policies (Mosley & Hulme, 1998), rural economic structures that support increased minimum wages (Pitt & Khandker, 2002), and the sociopolitical circumstances of the poor (Bhatt, 1997).

A strong point that can also be taken from the literature is that we should not ignore the fact that financial access in recent years has become part of a market system driven much more by profit interests. As a consequence, it could

potentially ignore other important sectors that are not considered to have potential benefits, such as the agricultural sector. This view is supported by Benini et al. (2011), who argue that financial access has failed to reach poor communities due to its commercialization.

Turning now to the gender development aspect, financial access not only serves as a tool to reduce poverty but also to escape chronic gender inequality (World Bank, 2012). The importance of involving women in financial access programs is also highlighted by Ramenyi (2000), who argues that women are the poorest of the poor. Mayoux (2000) also believes that financial access has affected the lives of women in three ways: it can significantly reduce poverty, it can promote the role of women in economic decision-making as well as political and legal rights, and it can create sustainable financial independence for women.

Several studies have emphasized the beneficial effects of financial inclusion on social justice and empowerment, particularly among marginalized demographics like women and rural populations. Siddik (2017) discovered that financial inclusion in Bangladesh led to increased income, purchasing power, and living standards among women. Likewise, George and Thomachan (2018) stressed the importance of financial services in the social and economic advancement of women. Khuan (2024) further emphasized the potential of financial inclusion to bolster economic empowerment, especially among marginalized groups. Lal (2021) expanded on this discussion to include marginalized communities, illustrating the direct influence of financial inclusion on their economic progress through social and economic empowerment. These findings collectively support the idea that inclusive financial systems can cultivate more resilient and equitable economies.

Reyes and Fattori (2019) show the significance of involving households and communities in a grassroots approach to effectively reform microfinance initiatives. Mayoux (2010) supports the implementation of a gender justice protocol within the financial sector, advocating for improved access to finance, customized product design, gender-specific metrics, consumer protection measures, and public advocacy. George and Thomachan (2018) and Lamichhane (2020) both stress the beneficial effects of financial inclusion on the social and economic advancement of women, ultimately contributing to their empowerment. Together, these studies underscore the pivotal role of financial access in advancing gender equality.

A study conducted by Pitt and Khandker (1998) also suggests that women are more appropriate for financial access schemes than men. Khandker claims that the number of women who succeed in utilizing financial access is greater than men. Interestingly, Khandker finds that a 1 percent increase in women borrowers would increase schoolgirl enrollment by 1.86 percent. Surely, in the long run, this could have a positive impact on the success of reducing poverty. However, some experts believe that focusing too much on women in the fight against poverty could be counterproductive and might not be appropriate because there are also households led by women that are not associated with poverty (Agarwal, 1997; Lloyd & Gage-Brandon, 1994)

III. METHOD

3.1. Data and variables

The data is derived from the Financial Inclusion Insights (FII) survey conducted in Indonesia in 2020. The survey aimed to investigate how Indonesian adults aged 15 and above are adopting and using digital financial services. Covering the entire nation, the survey sought to gain a deep understanding of how people interact with various financial services, including traditional banking, nonbank institutions, and newer financial services platforms.

One of the main goals of the FII survey is to measure and monitor awareness and usage levels of financial services among different segments of the population, including vulnerable groups like the poor and rural women. By identifying disparities in access, policymakers, and financial institutions can develop targeted interventions to promote financial inclusion. The survey helps stakeholders understand emerging trends and consumer preferences, guiding the development of tailored products and strategies.

The dataset utilized for this study delves into the intricate interplay between financial access and poverty alleviation, with a particular emphasis on the impact of financial services on personal income and entrepreneurial endeavors. To ensure the relevance of the findings, the research only considers respondents who own businesses as the sample population. This deliberate selection criterion ensures that the data collected and analysed are directly applicable to the context of access to loans and poverty reduction. The primary dependent variables are personal income and business activities, measured through indicators such as the acquisition of loans specifically designated for business purposes and the initiation of new business ventures. These

variables serve as pivotal markers in assessing the effectiveness of financial access in enhancing economic well-being and fostering entrepreneurial opportunities within the sampled population.

At the core of the analysis lies the main independent variable - access to loans from formal financial service providers, inspired by the existing literature such as, among others, Beck et al. (2009) and Kendall et al. (2010). This binary variable delineates whether individuals have access to a loan from financial providers. Several control variables are included to account for potential confounding factors that may obscure the relationship between financial access and poverty reduction. These control variables encompass diverse socio-economic dimensions, including human resources, availability of raw materials and equipment, awareness of basic saving account services, demographic attributes such as age, urban residence, and educational attainment, as well as employment sectors, marital status, household composition, and technological connectivity. Moreover, variables pertaining to household dynamics, such as childcare responsibilities, internet accessibility, and the degree of financial involvement in household decision-making, offer nuanced insights into the contextual factors shaping individuals' financial behaviours and economic outcomes.

Additionally, the distance to financial services offices emerges as a crucial determinant, shedding light on the geographical accessibility of formal financial institutions and its implications for financial inclusion and poverty alleviation efforts. By incorporating such a comprehensive array of variables, this study endeavors to capture the multifaceted nature of the relationship between financial access and poverty alleviation, unraveling the intricate mechanisms through which access to loans and ancillary factors intersect to shape personal income dynamics and entrepreneurial activities within the sampled population. Table A1 (Appendix A) shows the definition and description of all the variables used in the analysis, whilst summary statistics are reported in Table B1 (Appendix B).

The statistics reveal that only 4 percent of individuals experience an increase in income. In addition, approximately 23 percent of individuals have secured loans for business endeavors, indicating a considerable reliance on financial instruments to support entrepreneurial activities. Furthermore, the data reveals that around 11 percent of individuals have ventured into new business ventures, reflecting a proactive approach towards entrepreneurship. In terms of access to loans, the statistics indicate an average access level of 15 percent, indicating a relatively large segment potentially facing greater barriers to accessing financial services.

3.2. Econometrics Model

Logistic regression is a statistical method used to model the probability of a binary outcome variable. In this study, the outcome variables of interest are personal income and business activities, which are binary indicators representing whether an individual has experienced an increased in income or engaged in entrepreneurial endeavors. This study uses access to loans from formal financial service providers as the main independent variable and includes several control variables to account for potential confounding factors. Logistic regression is suitable for this analysis because it allows us to estimate the probability of these binary outcomes based on a set of independent variables (Gauvreau, 1997; Harrell, 2010).

The logistic regression model assumes a linear relationship between the log odds of the outcome variable and the independent variables. A binary logistic regression for the present study can be written as:

$$P_i = P(Y_i = 1) = F(\beta_0 + \beta_1 LA_{1i} + \beta_2 X_{2i} + \ldots \beta_k X_{ki})$$

Where P_i stands for the probability of individual *i* experiencing an increase in income or engaged in entrepreneurial endeavors. *LA* reflects loan access, *X* represents control variables, *F* is a cumulative distribution function, $X_{ji}, j = 1, 2, \ldots, k$ is a value of the independent variable X_j for individual *i*, *k* is a number of control variables, β_0 is the intercept and $\beta_j, j = 1, 2, \ldots, k$ reflects the regression coefficient. The beta coefficients (β_0) are computed via the maximum-likelihood method.

In the logistic model, one can estimate the exponential function of the regression coefficient for each independent variable as either the odds ratio or the likelihood of the event occurring, given specific conditions. Odds are expressed as the ratio of two probabilities, denoted as P_i and $1 - P_i$, representing the likelihood of the event happening or not. When considering two events, X and Z, the odds of X happening compared to Z occurring can be described as follows:

$$odds\ ratio\ \{X\ vs\ Z\} = \frac{odds\{X\}}{odds\{Z\}} = \frac{P_X/(1-P_X)}{P_Z/(1-P_Z)}$$

The odds ratio represents the relationship between an exposure and an outcome. It signifies the likelihood that an outcome (such as an increase

in income) will occur given a specific exposure (such as access to a loan), compared to the likelihood of the outcome occurring in the absence of that exposure. The odds ratio is valuable in determining whether a particular exposure is a significant factor for a specific outcome. Therefore, an odds ratio greater than 1 indicates that the exposure is associated with higher odds of the outcome, while an odds ratio less than 1 suggests that the exposure is linked to lower odds of the outcome. An odds ratio equal to 1 indicates that the exposure has no effect on the outcome.

IV. RESULTS AND DISCUSSION

The logistic regression analysis undertaken to assess the impact of financial access, particularly access to loans, on various poverty indicators provides valuable insights into the complex dynamics of economic empowerment and poverty alleviation. Focusing on three key indicators; personal income increase, obtaining loans for business, and opening new businesses

Delving further into the realm of entrepreneurship, the results in Table 1, Model 11, explore the association between access to loans and the likelihood of obtaining financing for business ventures. This study aligns with the existing literature about the positive direction of the coefficient highlights the potential role of financial access in facilitating entrepreneurial activities (Abu & Ezike, 2012; Bhatt, 1997; Hussain et al., 2015; Wijewardana & Dedunu, 2017). By providing capital to aspiring entrepreneurs, loans can fuel business expansion, job creation, and economic development, contributing to poverty reduction efforts within communities.

Similarly, the investigation into the propensity to open new businesses reveals a positive coefficient for access to loans, with individuals having greater access to credit being more inclined to embark on new business ventures, albeit without statistical significance. Furthermore, as can be seen in Table 1, Model 3, the examination of personal income increase reveals a positive coefficient associated with access to loans. Despite the absence of statistical significance at conventional levels, the finding suggests a potential link between access to credit and individual income growth. This hints at the notion that financial resources, when accessible, may enable individuals to pursue opportunities for economic advancement, such as education or skill development, leading to higher incomes over time.

The logistic regression analysis reveals a noteworthy gender disparity concerning the significance of loan access in specific poverty indicators (see Table 2)

For women entrepreneurs, access to loans demonstrates significant associations with both acquiring loans for business ventures, and opening new businesses. However, for men, while access to loans remains significant for acquiring loans for business ventures, its impact on opening new businesses is not statistically significant.

This gender-specific difference reveals the importance of considering the nuanced ways in which access to financial resources interacts with gender dynamics in entrepreneurship and economic participation. The significant association between access to loans and opening new businesses among women suggests that financial resources play a crucial role in overcoming barriers to entrepreneurship and facilitating business initiation. This finding illustrates the potential of access to loans as a catalyst for economic empowerment among women, enabling them to seize entrepreneurial opportunities and enhance their economic well-being.

Table 1. Adjusted odds ratio obtained from logistic regression

Variables	Loan for business	Open New Business	Increase income
	(1)	(2)	(3)
Access to loan	6.322***	0.793	1.835
	(2.005)	(0.303)	(1.002)
Saving account	0.976	0.695	1.620
	(0.264)	(0.281)	(1.632)
Human resources	0.322**	1.115	2.476
	(0.149)	(0.606)	(2.090)
Raw materials	1.824*	1.613	0.318
	(0.584)	(0.740)	(0.550)
Equipment	1.368	0.598	2.421
	(0.699)	(0.631)	(4.364)
Age	1.019	0.988	0.985
	(0.012)	(0.018)	(0.043)
Urban	0.814	1.062	0.185**
	(0.216)	(0.322)	(0.134)
Married	1.344	0.620	2.559
	(0.394)	(0.247)	(2.544)
Service and trade	1.036	2.201*	0.333
	(0.264)	(0.928)	(0.320)
Manufacturing	0.887	2.040	0.433
	(0.305)	(1.148)	(0.510)
Family members	1.553**	1.184	1.094
	(0.288)	(0.323)	(0.789)
Higher education	0.495	0.798	3.407
	(0.432)	(0.889)	(6.301)
Internet access	1.733**	1.569	30.218**
	(0.479)	(0.520)	(49.591)
Spending decisions	0.981	1.391*	0.892
	(0.111)	(0.237)	(0.210)
Household income contribution	0.691	1.197	1.237
	(0.179)	(0.435)	(1.061)
Smartphone ownership	1.170	0.828	0.301
	(0.400)	(0.371)	(0.370)
Distance	1.180	0.914	0.620
	(0.162)	(0.152)	(0.231)
Regional dummy	Yes	Yes	Yes
Observations	588	582	560
Log-Likelihood Full Model	-261.1	-167.1	-37.82
Chi-square test	69.16	47.05	113.2
AIC	0.977	0.667	0.228
BIC	-3061	-3199	-3303
Pseudo R2	0.173	0.0934	0.246
Nagelkerke R2	0.257	0.122	0.263
PctCorr	80.78	90.38	98.21

Notes: constant is included in regressions but not reported. Figures in parentheses are robust standard errors; *, **, and *** represent statistical significance at 10%, 5%, and 1%, respectively.

Table 2. Adjusted odds ratio obtained from logistic regression: gender differences

Variables	Loan for business		Open new business		Increase income	
	Women	Men	Women	Men	Women	Men
	(1)	(2)	(3)	(4)	(5)	(6)
Access to loan	5.750***	8.505***	1.541*	0.954	2.267**	1.712
	(1.528)	(3.144)	(0.361)	(0.269)	(0.767)	(0.723)
Saving account	1.445	0.506**	1.191	0.862	2.930***	2.595
	(0.324)	(0.171)	(0.338)	(0.321)	(1.214)	(1.562)
Human resources	0.392***	0.540	0.675	1.043	0.749	8.239**
	(0.127)	(0.320)	(0.302)	(0.572)	(0.491)	(6.844)
Raw materials	1.885**	1.868	0.752	1.483	0.531	0.185
	(0.507)	(0.836)	(0.316)	(0.716)	(0.523)	(0.248)
Equipment	1.293	2.378	1.801	0.923	0.881	1.628
	(0.567)	(1.264)	(1.037)	(0.714)	(0.872)	(2.687)
Age	1.003	1.015	0.993	0.993	1.006	1.017
	(0.010)	(0.015)	(0.015)	(0.016)	(0.023)	(0.028)
Urban	1.185	0.613	0.944	0.998	1.455	1.618
	(0.267)	(0.196)	(0.257)	(0.343)	(0.629)	(1.221)
Married	1.406	2.757**	2.314**	1.414	0.379*	9.201*
	(0.341)	(1.269)	(0.967)	(0.544)	(0.189)	(12.158)
Service and trade	0.580	1.155	1.861	0.774	0.339	0.854
	(0.221)	(0.339)	(1.087)	(0.280)	(0.298)	(0.560)
Manufacturing	1.194	1.766	5.075	0.429	0.935	1.521
	(1.589)	(1.264)	(5.667)	(0.471)	(1.123)	(1.644)
Family members	1.180	1.651**	1.413*	0.920	1.135	0.329
	(0.180)	(0.401)	(0.267)	(0.239)	(0.367)	(0.225)
Higher education	0.455	0.358*	0.556	0.410	3.423**	1.281
	(0.263)	(0.223)	(0.274)	(0.295)	(1.778)	(1.416)
Internet access	1.354	1.303	1.538	1.388	2.088	1.378
	(0.306)	(0.485)	(0.433)	(0.559)	(1.243)	(1.283)
Spending decisions	1.171	1.183	0.961	1.091	0.865	1.271
	(0.160)	(0.147)	(0.153)	(0.149)	(0.161)	(0.311)
Contribution to household income	0.862	0.505**	1.564	0.736	0.385	0.815
	(0.239)	(0.137)	(0.687)	(0.231)	(0.258)	(0.498)
Smartphone ownership	0.673	1.527	0.946	2.130	0.487	1.352
	(0.178)	(0.781)	(0.342)	(1.620)	(0.279)	(0.778)
Distance to FS	1.017	1.157	0.950	0.767	1.464	1.178
	(0.113)	(0.205)	(0.129)	(0.139)	(0.384)	(0.409)
Regional dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	739	495	739	495	708	439
Log-Likelihood Full Model	-343.7	-200	-252.5	-169.2	-100.2	-59.83
Chi-square test	94.60	80.52	33.43	48.67	60.53	63.03
AIC	0.998	0.909	0.754	0.789	0.354	0.386
BIC	-4029	-2516	-4205	-2572	-4282	-2399
Pseudo R2	0.165	0.261	0.0641	0.112	0.193	0.235
Nagelkerke R2	0.249	0.374	0.0882	0.154	0.221	0.268
PctCorr	79.84	82.63	88.23	87.07	96.05	95.90

Notes: constant is included in regressions but not reported. Figures in parentheses are robust standard errors; *, **, and *** represent statistical significance at 10%, 5%, and 1%, respectively.

Table 3. Adjusted odds ratio obtained from logistic regression: geographic location differences

Variables	Loan for business		Open new business		Increase income	
	Urban	Rural	Urban	Rural	Urban	Rural
	(1)	(2)	(3)	(4)	(5)	(6)
Access to loan	6.238***	8.552***	1.421	1.009	1.103	2.369**
	(1.769)	(2.785)	(0.310)	(0.308)	(0.458)	(0.859)
Saving account	1.091	0.825	1.335	0.710	4.704***	2.993**
	(0.290)	(0.216)	(0.368)	(0.263)	(1.972)	(1.672)
Human resources	0.394**	0.559	0.821	0.885	5.563***	0.431
	(0.168)	(0.239)	(0.393)	(0.455)	(3.246)	(0.500)
Raw materials	2.833***	1.295	0.890	1.173	1.144	0.846
	(0.938)	(0.421)	(0.376)	(0.492)	(0.771)	(0.603)
Equipment	2.459**	1.141	1.263	1.808	0.740	5.421
	(1.125)	(0.546)	(0.754)	(1.174)	(0.701)	(8.121)
Age	0.992	1.034***	1.002	0.980	1.039*	0.993
	(0.011)	(0.012)	(0.014)	(0.015)	(0.024)	(0.036)
Urban	1.405	1.066	0.926	0.873	1.364	1.182
	(0.360)	(0.334)	(0.257)	(0.352)	(0.601)	(0.858)
Married	1.613*	1.630*	1.167	2.321*	1.439	0.696
	(0.442)	(0.462)	(0.356)	(1.008)	(0.764)	(0.477)
Service and trade	0.839	0.660	1.036	1.278	1.070	0.892
	(0.300)	(0.218)	(0.453)	(0.500)	(0.697)	(0.629)
Manufacturing	0.672	2.030	0.825	1.951	4.789*	4.430
	(0.797)	(1.571)	(0.997)	(2.217)	(4.305)	(4.530)
Family members	1.318	1.335	1.153	1.231	0.692	0.537
	(0.224)	(0.264)	(0.222)	(0.297)	(0.253)	(0.285)
Higher education	0.854	0.102**	0.362**	0.657	2.160	3.956**
	(0.389)	(0.109)	(0.186)	(0.444)	(1.340)	(2.661)
Internet access	1.095	1.570	3.331***	0.797	2.048	1.340
	(0.267)	(0.469)	(1.257)	(0.252)	(1.649)	(0.996)
Spending decisions	1.000	1.317*	0.984	1.049	0.778	1.266
	(0.114)	(0.194)	(0.146)	(0.159)	(0.132)	(0.251)
Household income contribution	0.623*	0.857	0.838	1.070	0.700	0.589
	(0.165)	(0.236)	(0.236)	(0.458)	(0.390)	(0.424)
Smartphone ownership	0.803	0.761	0.549	2.016	0.728	0.691
	(0.275)	(0.258)	(0.241)	(1.047)	(0.560)	(0.430)
Distance	1.230*	0.877	0.820	0.916	1.246	1.450
	(0.153)	(0.123)	(0.122)	(0.158)	(0.311)	(0.473)
Regional dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	668	566	668	566	634	469
Log-Likelihood Full Model	-296.6	-244.4	-241.8	-177.3	-94.12	-68.24
Chi-square test	94.93	102.7	50.86	34.86	76.24	50.76
AIC	0.963	0.952	0.802	0.718	0.376	0.398
BIC	-3589	-2940	-3692	-3068	-3741	-2594
Pseudo R2	0.193	0.223	0.0968	0.0734	0.221	0.142
Nagelkerke R2	0.287	0.327	0.135	0.0985	0.255	0.163
PctCorr	80.69	80.74	86.38	89.40	95.58	95.74

Notes: constant is included in regressions but not reported. Figures in parentheses are robust standard errors; *, **, and *** represent statistical significance at 10%, 5%, and 1%, respectively.

In contrast, the lack of significance for opening new businesses among men entrepreneurs may suggest alternative pathways or factors influencing entrepreneurial activities in this demographic group. It's possible that men may have access to alternative sources of capital or may face different barriers or opportunities compared to women when it comes to starting new businesses. Further exploration into the underlying factors driving gender disparities in the significance of access to loans for opening new businesses could provide valuable insights for designing targeted interventions to promote inclusive entrepreneurship and economic growth.

The logistic regression analysis not only indicates the gender-specific differences in the significance of access to loans for opening new businesses but also reveals a similar pattern concerning its impact on personal income increase. While access to loans demonstrates positive associations with personal income increases for both women and men, the effect sizes and significance levels differ between the two genders. For women entrepreneur, access to loans exhibits a significant positive association with personal income increase, indicating that women who have access to loans are more likely to experience growth in their personal income. This finding supports the existing literature about the transformative potential of financial resources in empowering women economically, enabling them to invest in income-generating activities and improve their economic well-being (Hussain et al., 2015; Roy & Patro, 2022; Shinde & Joshi, 2016; Siddik, 2017).

In contrast, among men, the effect size is slightly smaller, and the significance level is not as pronounced compared to women. This suggests that the impact may be more variable or context-dependent, reflecting broader gender dynamics in economic participation and income generation. The gender-specific differences in the significance of access to loans for personal income increase reflect the need for tailored approaches to financial inclusion and poverty alleviation that account for gender disparities in economic opportunities and outcomes.

The logistic regression analysis also provides valuable insights into how access to loans impacts poverty indicators differently in urban and rural settings. As shown in Table 3, in rural areas, where traditional financing options are often limited, access to loans emerges as a critical driver of entrepreneurship and poverty alleviation (Abu & Ezike, 2012; Beck et al., 2015). In contrast, the impact of access to loans in urban areas appears to be less pronounced, as indicated by the regression results (see Table 3, model 5). While access to loans still contributes positively to entrepreneurship, the coefficients for loan acquisition in urban settings are lower compared to rural areas, suggesting that other factors may play a more prominent role in driving economic activity in urban environments. This differential impact highlights the importance of contextual factors and the need for tailored interventions that address the unique challenges and opportunities faced by urban and rural populations. In rural areas, initiatives aimed at improving access to credit, enhancing financial literacy, and building entrepreneurial skills can empower individuals to leverage loans effectively and unlock economic opportunities. In urban areas, efforts to promote inclusive finance, facilitate access to alternative sources of financing, and support innovation and entrepreneurship ecosystems can complement the available access to loans and drive economic growth.

The logistic regression analysis on the impact of financial access, particularly loans, on various poverty indicators highlights the important role that government policies can play in improving access to financial resources and reducing poverty, especially in the areas of entrepreneurship and income growth. The findings show a positive link between access to loans and obtaining financing for business ventures. Government initiatives such as subsidized loan programs, guarantees for small business loans, and support for microfinance institutions can boost entrepreneurial activities. These programs provide the necessary capital for aspiring entrepreneurs to start and expand their businesses, leading to job creation and economic development.

The analysis also reveals gender differences in the impact of loan access on entrepreneurship. For women, there is a significant association between loan access and both securing loans for business ventures and starting new businesses. This indicates that government policies focused on increasing financial inclusion for women could be very effective. Programs designed to overcome barriers faced by women entrepreneurs, such as discriminatory lending practices or lack of collateral, can enhance their economic participation and reduce poverty. Facilitating credit access for underrepresented groups, including women, can help reduce income disparities and promote inclusive economic growth.

Additionally, the analysis shows that the impact of loan access varies between urban and rural areas, suggesting the need for tailored government interventions. In rural areas, where traditional financing options are limited, improving access to credit can drive entrepreneurship and alleviate poverty. Government programs that improve financial literacy, provide entrepreneurial training, and build infrastructure to support rural businesses can be particularly effective. In urban areas, promoting inclusive finance and supporting innovation ecosystems can complement access to loans and stimulate economic activity. Furthermore, government policies that create an enabling environment for financial institutions to serve marginalized populations can have a significant impact on poverty reduction. This includes regulatory reforms, incentives for banks to operate in underserved areas, and support for digital financial services to reach remote populations.

V. CONCLUSION

The logistic regression analysis conducted in this study offers valuable insights into the nuanced relationship between access to loans and various poverty indicators, particularly within the context of gender dynamics and urban-rural disparities. The findings underscore the transformative potential of financial inclusion in empowering individuals, particularly women and those residing in rural areas, to overcome barriers to entrepreneurship and achieve economic advancement.

The study reveals that access to loans significantly influences key poverty indicators such as personal income increase, obtaining loans for business ventures, and opening new businesses. While the overall impact of access to loans is positive, there are notable gender-specific differences in the significance of this access, suggesting the need for tailored approaches to financial inclusion and poverty alleviation. This study shows that during economic crises, women often display remarkable resilience, and access to finance is a key factor in this. Having access to finance helps them by providing the money needed to maintain their consumption and income as well as support their families during tough times. Additionally, the study highlights that economic crises often lead women to start new businesses out of necessity, which is made possible by access to finance. Job losses and reduced income push many women to become entrepreneurs to support their livelihoods. Financial institutions, microfinance organizations, and targeted loan programs play a crucial role by providing the needed capital and support for women to start new ventures.

Furthermore, the analysis demonstrates that the impact of access to loans varies between urban and rural settings, with loans playing a more critical role in stimulating entrepreneurship and economic activity in rural areas where traditional financing options are limited. In contrast, urban areas may offer alternative sources of financing, suggesting the importance of understanding and addressing the unique socio-economic dynamics of each context.

To sum up, the results of the logistic regression analysis have important implications for policy aimed at fostering inclusive economic growth and alleviating poverty. One significant implication is the necessity for financial inclusion programs that cater to both genders. The analysis highlighted differences in how access to loans affects men and women, stressing the importance of customized approaches. Policymakers should prioritize initiatives that improve women's access to credit, enhance their financial knowledge, and support businesses led by women. By addressing disparities in financial access, policymakers can tap into the economic potential of women, benefiting society as a whole by utilizing their untapped talents and creativity.

Several recommendations for future research can be highlighted to overcome the study's limitations and deepen understanding in this field. First, future studies could extend their timeframe and scope to examine long-term trends in how access to loans impacts poverty indicators. This longer-term perspective would provide a more complete understanding of how financial inclusion affects economic outcomes over time, especially in different economic conditions and policy environments.

Second, there is a need for research that distinguishes between various types of loans, such as microloans, equipment financing, green business loans, agricultural loans, and Peer-to-peer (P2P) loans. By examining these differences, researchers can better understand how each type of loan contributes differently to reducing poverty and promoting economic empowerment. This insight can guide more targeted interventions and policy recommendations.

Furthermore, future research could focus specifically on underserved financial areas beyond just rural and urban distinctions. This involves assessing the effectiveness of financial inclusion initiatives in marginalized or remote communities where access to formal financial services is limited. Understanding these

dynamics can help develop tailored approaches that improve financial access and support sustainable economic development in these regions.

III. REFERENCES

Abu, I., & Ezike, J. (2012). The role and sustainability of microfinance banks in reducing poverty and development of entrepreneurship in urban and rural areas in Nigeria.

Agarwal, B. (1997). "Bargaining"and gender relations: Within and beyond the household. *Feminist economics*, *3*(1), 1-51.

Antonakis, A. C., & Sfakianakis, M. E. (2010). Electronic systems of trust in retail lending: New application areas. *International Journal of Applied Systemic Studies*, *3*(3), 283-291.

Armendáriz, d. A., & Morduch, J. (2005). The Economics of Microfinance MIT Press. *Cambridge, Massachusetts*.

Batala, L. (2022). The Buzz Around Access to Financial Services by Individuals. *The Thinker*, *92*(3), 70-84.

Beck, T., Demirgüç-Kunt, A., & Honohan, P. (2009). Access to Financial Services: Measurement, Impact, and Policies. *World Bank Research Observer*, *24*(1).

[Record #798 is using a reference type undefined in this output style.]

Bhatt, N. (1997). Microenterprise development and the entreprenurial poor: including the excluded? *Public Administration and Development: The International Journal of Management Research and Practice*, *17*(4), 371-386.

Chowdhury, A. (2009). Microfinance as a poverty reduction tool: a critical assessment.

Claessens, S., Honohan, P., & Rojas-Suarez, L. (2009). Policy principles for expanding financial access. *Center for Global Development Working Paper*.

Copestake, J., Dawson, P., Fanning, J. P., McKay, A., & Wright‐Revolledo, K. (2005). Monitoring the diversity of the poverty outreach and impact of microfinance: A comparison of methods using data from Peru. *Development Policy Review*, *23*(6), 703-723.

Corrado, G., & Corrado, L. (2017). Inclusive finance for inclusive growth and development. *Current Opinion in Environmental Sustainability*, *24*, 19-23.

Daley-Harris, S., & Laegreid, L. (2006). *State of the microcredit summit campaign: report 2006*. Microcredit Summit Campaign Washington, DC.

Dash, M., Prasad, V. M., & Koshy, C. (2016). Women empowerment through microfinance services. *Journal of Applied Management and Investments*, *5*(1), 20-25.

De Mel, S., McKenzie, D., & Woodruff, C. (2008). Returns to capital in microenterprises: evidence from a field experiment. *The Quarterly Journal of Economics*, *123*(4), 1329-1372.

Fletschner, D., & Kenney, L. (2014a). *Rural women's access to financial services: credit, savings, and insurance*. Springer.

Fletschner, D., & Kenney, L. (2014b). Rural women's access to financial services: credit, savings, and insurance. In *Gender in agriculture* (pp. 187-208). Springer.

George, B., & Thomachan, K. (2018). Financial inclusion and women empowerment: A gender perspective. *International Journal of Research-Granthaalayah*, *6*(5), 229-237.

Ghate, P. (2007). Consumer protection in Indian microfinance: Lessons from Andhra Pradesh and the microfinance bill. *Economic and Political Weekly*, 1176-1184.

Harper, M. (2003). Microfinance: evolution, achievements and challenges. *(No Title)*.

Holt, S. L., & Ribe, H. (1991). *Developing financial institutions for the poor and reducing barriers to access for women*.

Hulme, D., & Mosley, P. (1996). *Finance against poverty* (Vol. 2). Psychology Press.

Hussain, J. G., Mahmood, S., & Scott, J. M. (2015). Entrepreneurial finance, poverty reduction and gender: The case of women entrepreneurs' microloans in Pakistan. In *Research Handbook on Entrepreneurial Finance* (pp. 248-264). Edward Elgar Publishing.

Hyndman, K. B., Wu, J., & Xiao, S. C. (2020). Trust and lending: An experimental study. *Available at SSRN 3572430*.

Jain, P. S. (1996). Managing credit for the rural poor: lessons from the Grameen Bank. *World Development*, *24*(1), 79-89.

Karlan, D., & Morduch, J. (2010). Access to finance. In *Handbook of development economics* (Vol. 5, pp. 4703-4784). Elsevier.

Karlan, D., & Zinman, J. (2010). Expanding credit access: Using randomized supply decisions to estimate the impacts. *The Review of Financial Studies*, *23*(1), 433-464.

Kendall, J., Mylenko, N., & Ponce, A. (2010). Measuring financial access around the world.

Khuan, H. (2024). Financial Inclusion and Economic Empowerment. *Accounting Studies and Tax Journal (COUNT)*, *1*(2), 178-181.

Kimani, H. K. (2022). The Role of Access to Finances and Poverty Reduction in Developing Countries. A Critical Literature Review. *International Journal of Poverty, Investment and Development*, *2*(2), 1-9.

Kocoglu, E. (2009). State aid in the financial services sector and the implications of the recent financial crisis.

Lal, T. (2021). Impact of financial inclusion on economic development of marginalized communities through the mediation of social and economic empowerment. *International Journal of Social Economics*, *48*(12), 1768-1793.

Lamichhane, B. D. (2020). Microfinance for women empowerment: A review of best practices. *Interdisciplinary journal of management and social sciences*, *1*(1), 13-25.

Lloyd, C. B., & Gage-Brandon, A. J. (1994). High fertility and children's schooling in Ghana: Sex differences in parental contributions and educational outcomes. *Population Studies*, *48*(2), 293-306.

Mayoux, L. (2000). Micro-finance and the empowerment of women: A review of the key issues. *ILO Working Papers*(993441343402676).

Mosley, P. (2001). Microfinance and poverty in Bolivia. *Journal of development studies*, *37*(4), 101-132.

Mosley, P., & Hulme, D. (1998). Microenterprise finance: is there a conflict between growth and poverty alleviation? *World Development*, *26*(5), 783-790.

Nathan, F., Margaret, B., & Ashie, M. (2004). Microfinance and poverty reduction in Uganda: Achievements and challenges. *Economic Policy Research Centre*.

Nga, M.-T. (2007). *An investigative analysis into the saving behaviour of poor households in developing countries: With specific reference to South Africa* University of the Western Cape].

Pearce, D. (2003). Financial services for the rural poor.

Pickens, M., Porteous, D., & Rotman, S. (2009). Banking the Poor via G2P payments. *Focus Note*, *58*, 1-22.

Pitt, M. M., & Khandker, S. R. (1998). The impact of group-based credit programs on poor households in Bangladesh: Does the gender of participants matter? *Journal of Political Economy*, *106*(5), 958-996.

Pitt, M. M., & Khandker, S. R. (2002). Credit programmes for the poor and seasonality in rural Bangladesh. *Journal of development studies*, *39*(2), 1-24.

Pokhriyal, A. K., Rani, R., & Uniyal, J. (2014). Role of micro-finance in the empowerment of the women. *Journal of business and finance*, *2*(1), 21-31.

Ponnuraj, P. N., Manasa (2015). Analysis of Adoption of Mobile Banking for Financial Inclusion in Rural India. *International Journal of Science and Research*.

Prina, S. (2015). Banking the poor via savings accounts: Evidence from a field experiment. *Journal of Development Economics*, *115*, 16-31.

Quach, M. H. (2005). *Access to finance and poverty reduction: an application to rural Vietnam* University of Birmingham].

Reyes, L. A. D., & Fattori, G. (2019). Microfinance as a means for women empowerment in the Colombian post conflict scenario: Transformational development or a tool for better managing poverty? *Peace Human Rights Governance*, *3*(Peace Human Rights Governance 3/1), 127-161.

[Record #767 is using a reference type undefined in this output style.]

Roy, P., & Patro, B. (2022). Financial inclusion of women and gender gap in access to finance: A systematic literature review. *Vision*, *26*(3), 282-299.

Samuel, B. (2023). Microfinancing and Microeconomics: Influence on Individual Lives. *Economics & Management Information*, 1-7.

Sharma, M., & Zeller, M. (1999). Placement and outreach of group-based credit organizations: The cases of ASA, BRAC, and PROSHIKA in Bangladesh. *World Development*, *27*(12), 2123-2136.

Sharma, M. P., & Zeller, M. (2000). Rural financial services for poverty alleviation: the role of public policy.

Shinde, R., & Joshi, A. (2016). Socio-economic Empowerment of Women through Micro-financing: A Study of Self Help Groups in Pune City. *Journal of Commerce and Management Thought*, *7*(4), 633-655.

Siddik, M. N. A. (2017). Does financial inclusion promote women empowerment? Evidence

from Bangladesh. *Applied Economics and Finance*, *4*(4), 169-177.

Song, H., Yu, K., & Lu, Q. (2018). Financial service providers and banks' role in helping SMEs to access finance. *International Journal of Physical Distribution & Logistics Management*, *48*(1), 69-92.

Stein, L. C., & Yannelis, C. (2020). Financial inclusion, human capital, and wealth accumulation: Evidence from the freedman's savings bank. *The Review of Financial Studies*, *33*(11), 5333-5377.

Sukmaningsih, D. W. (2018). A model for lender-borrower trust in peer-to-peer lending. *ComTech: Computer, Mathematics and Engineering Applications*, *9*(1), 15-24.

Sukumaran, K. (2015). Financial access: inclusion and literacy. *Annual Research Journal of Symbiosis Centre for Management Studies*, *3*(1), 188-207.

Tarozzi, A., Desai, J., & Johnson, K. (2015). The impacts of microcredit: Evidence from Ethiopia. *American Economic Journal: Applied Economics*, *7*(1), 54-89.

Wanof, M. I. (2023). Digital technology innovation in improving financial access for low-income communities. *Technology and Society Perspectives (TACIT)*, *1*(1), 26-34.

Warner, K., Bouwer, L. M., & Ammann, W. (2007). Financial services and disaster risk finance: Examples from the community level. *Environmental Hazards*, *7*(1), 32-39.

Wijewardana, W., & Dedunu, H. (2017). Impact of microfinance to empower female entrepreneurs. *International Journal of Business Marketing and Management (IJBMM)*, *2*(7), 01-06.

Yi, H., Meng, X., Linghu, Y., & Zhang, Z. (2023). Can financial capability improve entrepreneurial performance? Evidence from rural China. *Economic research-Ekonomska istraživanja*, *36*(1), 1631-1650.

Yunus, M. (1999). The grameen bank. *Scientific American*, *281*(5), 114-119.

Appendix A

Table A1. Sample Description

Variable	Survey question
Loan for business	Purpose of the loan (1 = business purposes, 0 = consumption or personal needs)
Increase income	Increase in income compared to last year (1 = yes, 0 = otherwise)
Open new business	Currently opening a new business (1 = yes, 0 = no)
Access to loan	Having access to a loan from a formal financial service provider (1 = yes, 0 = no)
Human resources	Having human resources to start a business(people who will / are helping the business)
Raw materials	Having raw materials / materials for production to start a business (such as merchandise, wood, livestock, agricultural crops, and others)
Equipment	Having equipment to start a business (such as cages, land, agricultural equipment, and others)
Saving account	Aware on basic saving account availability (1 = yes, 0 = no)
Age	Respondent's age in years
Urban	Respondent lives in urban (1= yes, 0 = no)
Higher education	Respondent's education (1= has higher education, 0 = otherwise)
Married	Respondent's marital status (1= married, 0 = otherwise)
Service and trade	Respondent's job sector (1= service and trade, 0 = otherwise)
Manufacturing	Respondent's job sector (1= manufacturing, 0 = otherwise)
Java	Respondent's job sector (1= manufacturing, 0 = otherwise)
Family members	Number of respondent's family members
Childcare: <5 years old	Household members that are between 0 and 5 years of age
Childcare: 5-10 years old	Household members that are between 6 and 10 years of age
Internet access	Respondent has internet access (1= yes, 0 = no)
Financial involvement in HH	How involved or uninvolved in deciding how to spend your household income (1= very involved, 0 = otherwise)
Spending decisions	How likely would be to voice disagreement regarding how income is spent (1= very likely, 0 = otherwise)
Contribution to household income	Personal contribution / portion of income to all of your household income each month? (1= almost all of them, 0 = otherwise)
Smartphone ownership	Respondent has smartphone (1= yes, 0 = no)
Distance to financial services offices	Distance to financial services offices (1 = less than 500 Meter, 2 = between 500 meter and 1 kilometer, 3 = between 1 kilometer and 5 kilometer, 4 = more than 5 kilometer)

Appendix B

Table B1 Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Loan for business	1,415	0.226	0.418	0	1
Open new business	1,415	0.113	0.317	0	1
Increase income	1,415	0.037	0.190	0	1
Access to loan	1,415	0.146	0.439	0	2
Human resources	1,415	0.113	0.317	0	1
Raw materials	1,415	0.130	0.336	0	1
Equipment	1,415	0.047	0.212	0	1
Saving account	1,415	0.206	0.404	0	1
Age	1,415	42.231	12.339	17	88
Urban	1,415	0.539	0.499	0	1
Higher education	1,415	0.049	0.215	0	1
Married	1,415	0.739	0.440	0	1
Service and trade	1,415	0.840	0.367	0	1
Manufacturing	1,415	0.013	0.112	0	1
Java	1,415	0.546	0.498	0	1
Family members	1,415	1.493	0.632	1	3
Childcare: <5 years old	1,415	1.049	0.217	1	2
Childcare: 5-10 years old	1,415	1.033	0.177	1	2
Internet access	1,415	0.539	0.499	0	1
Financial involvement in HH	1,415	4.191	1.036	1	5
Spending decisions	1,415	4.251	1.049	1	5
Contribution to household income	1,415	0.331	0.471	0	1
Smartphone ownership	1,415	0.779	0.415	0	1
Distance to financial services offices	1,415	2.704	0.951	1	4