
| RESEARCH ARTICLE

Microcredit and Micro-Entrepreneurial Success in a Fragile Economy: Evidence from Lebanon

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| ABSTRACT

This study examines the factors associated with micro-entrepreneurial success among microcredit recipients in a fragile economic environment, using Lebanon as the empirical setting. It develops an integrated framework incorporating microfinance institution support, socio-demographic characteristics, economic conditions, political factors, social factors, and infrastructure to explain differences in entrepreneurial success. A quantitative research design was employed using survey data collected from 325 micro-entrepreneurs in Lebanon who had accessed microcredit. Structural Equation Modeling (SEM) using SPSS-AMOS was applied to assess the measurement and structural relationships among the proposed factors and entrepreneurial success, measured through income, business survival, and productivity. The findings indicate that support provided by microfinance institutions and entrepreneurial experience are important factors associated with micro-entrepreneurial success. The results also demonstrate that environmental conditions substantially shape business outcomes: political instability, infrastructure constraints, and market competition significantly affect entrepreneurial performance, whereas social factors do not exhibit a statistically significant effect. These findings suggest that access to microcredit alone does not determine the success of micro-enterprises operating in fragile economies. Rather, successful outcomes are associated with the interaction of institutional support, individual capabilities, and the broader economic and political environment. The study contributes to the microfinance and entrepreneurship literature by providing an integrated assessment of the institutional, individual, and environmental conditions associated with the success of microcredit-supported enterprises in a fragile economy.

| KEYWORDS

Microcredit; microfinance; micro-entrepreneurship; entrepreneurial success; fragile economy; structural equations.

| ARTICLE INFORMATION

RECIEVED: 28 August 2026

PUBLISHED: 08 September 2026

DOI: 10.32996/jhsss.2026.8.9.3

1. Introduction

Encouraging entrepreneurship is widely recognized as a key strategy for promoting economic development, particularly in contexts characterized by financial constraints and institutional instability (Ribeiro-Soriano, 2017; Mollah et al., 2023). In such environments, access to finance remains a critical barrier for low-income individuals seeking to start or expand businesses (Anicic et al., 2018). Microcredit has emerged as a key policy tool to address this constraint by extending small loans to individuals excluded from traditional banking systems, thereby supporting income-generating activities and promoting financial inclusion (Chowdhury et al., 2020; Tundui & Tundui, 2024).

Despite a large body of research on microcredit and entrepreneurship, the evidence on its effectiveness remains mixed. While some studies highlight its role in promoting business creation, income generation, and empowerment (Chowdhury et al., 2020; Tundui & Tundui, 2024), others find limited or context-dependent impacts, particularly in environments characterized by economic instability and weak institutional support (Babalola et al., 2023; Tundui & Tundui, 2024). In particular, relatively little

attention has been paid to how institutional support, infrastructure, political conditions, and entrepreneur characteristics jointly influence the effectiveness of microcredit, especially in fragile and crisis-affected economies.

This paper addresses this gap by developing and empirically testing a comprehensive framework that integrates institutional, individual, and environmental factors associated with micro-entrepreneurial success. Using data from Lebanon—a context characterized by economic instability, weak infrastructure, and limited financial inclusion (IFC, 2008; Wahidi, 2017)—the study provides new evidence on the factors associated with sustainable business outcomes among microcredit recipients.

In this context, the study addresses the central research question: *Which institutional, individual, and environmental factors are associated with micro-entrepreneurial success among microcredit recipients in Lebanon?*

To address this question, the study adopts a quantitative approach based on survey data from 325 micro-entrepreneurs who accessed microcredit in Lebanon. Structural Equation Modeling (SEM) is used to examine the relationships between institutional support, individual characteristics, environmental constraints, and entrepreneurial success.

The results indicate that support from microfinance institutions and entrepreneurial experience are significantly associated with entrepreneurial success. Political, infrastructure, and economic factors are also significantly associated with business outcomes, whereas social factors are not statistically significant.

2. Literature Review

2.1 Entrepreneurship and micro-entrepreneurship: concepts and evolution

The concept of entrepreneurship has evolved significantly over time. Its roots can be traced back to early economic thinkers, but the modern understanding of entrepreneurship has been shaped by the recognition of its role in innovation and economic transformation. Joseph Schumpeter's notion of entrepreneurship as a process of "creative destruction" remains central, highlighting how entrepreneurs drive innovation and structural change in economies. The literature consistently highlights a strong relationship between entrepreneurship and innovation, particularly in small business contexts (Sahut & Peris-Ortiz, 2014; Bradley et al., 2021). However, this relationship may be constrained in developing economies where institutional and financial barriers limit the capacity of entrepreneurs to innovate.

Contemporary scholars define entrepreneurship as a human-driven process that creates market value through the initiation or development of economic activity, meeting both individual and collective needs and contributing to economic growth at regional and national levels. Entrepreneurs are seen as individuals who identify opportunities, mobilize resources, and manage risk and uncertainty to generate profit and stimulate innovation. The institutional context, including formal and informal rules, plays a crucial role in shaping entrepreneurial outcomes, especially in emerging economies (Hamdanet et al, 2021; Bradley et al, 2021).

Although there is no universally accepted definition of micro-entrepreneurs, they are commonly described as individuals who operate small-scale businesses, often independently or with minimal staff and low capital investment. Micro-entrepreneurship is particularly important in developing countries, where it provides income opportunities in contexts with limited formal employment. Recent literature highlights that micro-entrepreneurs face unique challenges, such as access to credit, business training, and barriers to hiring, and that their success is influenced by factors like education, gender, and the regulatory environment. Micro-enterprises typically employ fewer than ten people and are often home-based or informal in structure, playing a vital role in local economies (Jayachandran, 2020; Marquez & Reyes-Ortiz, 2020).

The micro-entrepreneur is considered an active client who seeks financial services, such as credit, to develop their business and assumes responsibility for repayment. This credit is typically repaid through regular installments. In most developing countries, low-income populations create microenterprises as a means to generate income, cope with debt, and navigate economic crises. Consequently, self-employment through microenterprises has become a survival strategy for many poor individuals, offering a pathway to improve their living conditions. The microenterprise sector includes a wide range of income-generating activities, from informal sales (e.g., newspapers on street corners) to personal services (e.g., hairdressing, snack vending), small-scale production, trade, and even more formal services such as carpentry, baking, and mechanical repair. These microenterprises are typically family-run, rely on used or outdated equipment, and employ low-skilled labor (Abebe & Kegne, 2023) (Ullah et al, 2024).

2.2 Microfinance and the role of microfinance institutions (MFIs)

Organizations such as microfinance institutions (MFIs) offer support services to micro-business owners to enhance their chances of success. These services may include training in business planning, accounting, and marketing, as well as networking opportunities where entrepreneurs can share experiences and expertise. MFIs also provide microcredit loans, which offer

financial access to those excluded from traditional banking systems. These loans are designed to support the growth of microenterprises and are often complemented by government programs that offer additional services and resources (Mengstie, 2023; Tariq & Gill, 2025).

It is important to note that microcredit varies across countries and institutions and differs from conventional loans provided by commercial banks. Despite these differences, microcredit products share common characteristics. Microcredit is commonly defined as the provision of small loans to individuals excluded from formal financial systems. While it is often presented as a tool for promoting entrepreneurship and financial inclusion, its effectiveness remains debated, particularly in contexts where institutional support and market conditions are weak (Bahety & Ngoma, 2022; Tariq & Gill, 2025).

2.3 Barriers to micro-enterprise development

Financial constraints remain one of the primary barriers to the creation and growth of micro-enterprises. Whether it is a farmer needing to purchase seeds, a small vendor requiring initial stock, or a craftsman in need of tools and materials, all micro-entrepreneurs require upfront capital. In principle, these needs could be met through bank loans; however, traditional financial institutions often consider micro-entrepreneurs—especially those in the informal sector—as unattractive clients. Banks typically prefer issuing large loans to a limited number of borrowers rather than managing numerous small loans, which increase administrative costs and are perceived as high-risk. Additionally, the low returns often associated with micro-enterprises and the high cost of follow-up to ensure repayment further discourage banks from serving this segment. As a result, many micro-entrepreneurs are excluded from formal credit systems. While some may turn to informal lenders, such as loan sharks, this option is often detrimental: the harsh repayment conditions frequently erode profits, leaving the micro-entrepreneur in a worse financial position than before taking the loan (Wang et al, 2022; Marie, et al., 2023).

The initial support provided by microfinance institutions (MFIs) is vital, especially when microcredit represents the only available source of external financing for micro-entrepreneurs. In such cases, microfinance becomes a crucial response to the persistent lack of access to financial resources. MFIs typically assist two categories of micro-entrepreneurs: those in the creation phase (potential entrepreneurs) and those in the development phase (existing businesses). However, access to microcredit alone does not guarantee success. The micro-entrepreneur is expected to manage the funds effectively, build a credible financial profile, and demonstrate financial responsibility to improve the likelihood of obtaining future financing. Mismanagement or inappropriate use of the loan often reduces the entrepreneur's chances of securing additional microcredit (Dzingirai & Baporikar, 2021; Hamdan & Kassim, 2023; Karna, 2025).

Beyond financial services, MFIs also provide non-financial support, which is equally important for enhancing the sustainability of micro-enterprises. These services include assistance in accessing funding sources, business plan development, entrepreneurship training, and guidance on pricing strategies (European Commission, 2003). According to Shaw, microfinance initiatives should be complemented by infrastructure investment, particularly in rural areas, to effectively support microenterprise growth. Similarly, Christen (2015) emphasizes that while credit is a key factor in entrepreneurial success, it does not, in itself, create opportunities. Rather, it is the entrepreneurial mindset and initiative of individuals that enables them to identify and exploit income-generating opportunities (Nair & Njolomole, 2020; Karna, 2025).

2.4 Success factors and the Lebanese context

Although access to financing is essential, the success of micro-entrepreneurs also depends on a broader set of factors. These include internal factors—such as the behavior, skills, and management capacity of the entrepreneur, as well as the effectiveness of MFIs—and external factors, including economic conditions, political stability, social norms, and infrastructure development (Baharudin et al, 2024).

Abebaw and Tiruneh investigate in 2020 the role of microfinance institutions (MFIs) in promoting women's economic empowerment in rural Ethiopia. Focusing on the Ambo District, their study assesses how access to microfinance services—primarily credit and savings—impacts women's control over income, decision-making power, business ownership, and asset accumulation. The data encompass 196 women, half of whom were microfinance clients and half non-clients. The results indicate that women who accessed microfinance services experienced significantly higher levels of economic empowerment than those who did not, especially in terms of generating income, participating in household decisions, and owning productive assets. The study concludes that MFIs play a crucial role in enhancing rural women's economic agency and recommends the expansion of microfinance outreach, coupled with business training and literacy programs to maximize long-term impacts (Abebaw & Tiruneh, 2020).

In 2021, Al-Halmy and Al-Swidi examined the impact of microcredit on the performance of micro and small enterprises (MSEs) in Yemen, with a particular focus on enterprises operating in the city of Ebb. The study aims to evaluate how microcredit influences

key performance indicators such as profit growth, capital accumulation, and business expansion. A questionnaire was administered to 73 MSEs that had received loans from microfinance institutions. The results show a positive and statistically significant effect of microcredit on MSEs, particularly in enhancing income, improving production capacity, and expanding markets. The authors highlight that while microcredit plays a vital role in improving enterprise performance, its effectiveness is maximized when coupled with non-financial services such as training, technical support, and proper loan utilization monitoring.

In a study conducted by Agarwala et al (2022), the authors assessed the impact of the "Mudra Yojana" microcredit scheme on the employability and empowerment of tribal women in seven underprivileged districts of West Bengal In India. Based on a sample of 417 female beneficiaries, the study aimed to evaluate the program's effectiveness in promoting employment and improving women's well-being across four key dimensions: economic, social, psychological, and political. The findings indicate that access to Mudra loans significantly enhanced women's employability, primarily through increased entrepreneurial income, greater involvement in financial decision-making, and improved participation in social and political spheres. The study concludes that while microfinance serves as a catalyst for women's empowerment, its long-term success also depends on cultural factors and the provision of adequate support and training for the beneficiaries.

In 2024, Valant-Gandja and Kamaha examine the factors influencing the entrepreneurial success of micro-enterprises that received microcredit in France. The research defines success across three dimensions: business continuity, economic performance, and entrepreneur satisfaction. Using data from 150 micro-entrepreneurs, the authors analyze how various financial and personal factors—such as loan amount, education level, type of activity, and institutional support—influence success. Results show that larger investments, higher education, and external business support are significantly associated with entrepreneurial success, while demographic variables such as gender and age are less influential. The study concludes that beyond access to finance, non-financial support mechanisms and human capital play a central role in achieving successful micro-entrepreneurship.

Musah's 2025 study explores whether microcredit contributes to the growth of microbusinesses in Ghana, focusing on the Asante-Akim Central Municipality. The study assesses how loan size, repayment terms, and interest rates influence business outcomes such as income growth, employment creation, and business expansion. Data were collected from 230 micro-entrepreneurs through structured questionnaires. The results reveal that larger loan sizes and flexible repayment plans positively affect business growth, while high interest rates pose significant constraints. Furthermore, the study highlights the importance of entrepreneurial training and education in ensuring the effective use of credit. Musah concludes that while microcredit can act as a catalyst for growth, its success is contingent on borrower capacity and the design of lending programs.

Despite these positive findings, the literature also highlights important limitations of microcredit. Several studies report that its impact on entrepreneurial success is limited or highly context-dependent, particularly in environments characterized by weak institutions, economic instability, or limited market opportunities (Babalola et al., 2023; Tundui & Tundui, 2024). These findings suggest that access to credit alone may not be sufficient to ensure sustainable business success.

Wahidi (2017) highlights that microfinance in Lebanon is not highly developed, with NGOs receiving only mild government support—serving as the primary providers of microcredit. These institutions reach just 11.5% of the population, indicating limited coverage. The research reveals significant gender disparities: NGOs tend to grant more microcredit to men than women, and only a small share of loans goes to start-ups. Most beneficiaries are poor or moderately poor, have low educational attainment, and live in rural areas. The study also points out that gender discrimination is present in the allocation of microcredit, with male loan officers often preferring to lend to men, while women may lack information or initiative to apply due to patriarchal social norms. Additionally, some men use their wives' names to access multiple loans, further complicating the gender dynamics in microcredit distribution in Lebanon.

In a 2024 Lebanese study, Mawad, Mawad & Mouawad assess whether microfinance enhances household welfare among micro-entrepreneurs borrowing less than \$10,000. Using a sample of 150 clients they find that microcredit significantly improves income, savings, wealth, and household living conditions. The effect is notably stronger in specific sectors (crafts, transport, health, education, IT) and varies by governorate and pre-loan household income level.

Overall, while the literature provides substantial evidence on the role of microcredit in promoting entrepreneurship, important gaps remain. In particular, limited attention has been given to the combined effects of institutional support, infrastructure, political conditions, and individual characteristics within a unified analytical framework. Moreover, empirical evidence from fragile economies remains scarce. This study addresses these gaps by developing and empirically testing an integrated model of micro-entrepreneurial success in the Lebanese context.

3. Assumptions and Methodology

We start by presenting the hypotheses that focus on the internal and external factors which potentially affect the success of micro-entrepreneurs in Lebanon who have benefited from microcredit support. The characteristics of microcredit as defined by the basic circular issued by Banque du Liban (BDL) and supported by the literature. Specifically, a microcredit is defined as a small loan not exceeding 20 million L.L., with a maximum repayment period of five years, intended for low-income individuals lacking sufficient collateral (BDL, 2004).

The initial research model conceptualizes the success of a micro-entrepreneur as a multidimensional construct influenced by five key latent factors (Figure 1): Microcredit Institution, Political Factors, Economic Factors, Social Factors, and Infrastructure. Each latent factor is represented by several observed variables; for example, Microcredit Institution includes assistance, validity of agreement, and training, while Economic Factors encompass interest rate, inflation, competition, unemployment, and investments. The model also incorporates socio-demographic variables such as gender, age, education level, workplace, sector of activity, and experience as moderating influences. Success itself is measured through outcomes including income, productivity, and survival. This theoretical framework provides a comprehensive basis for examining the complex interactions affecting micro-entrepreneurial success in the studied context.

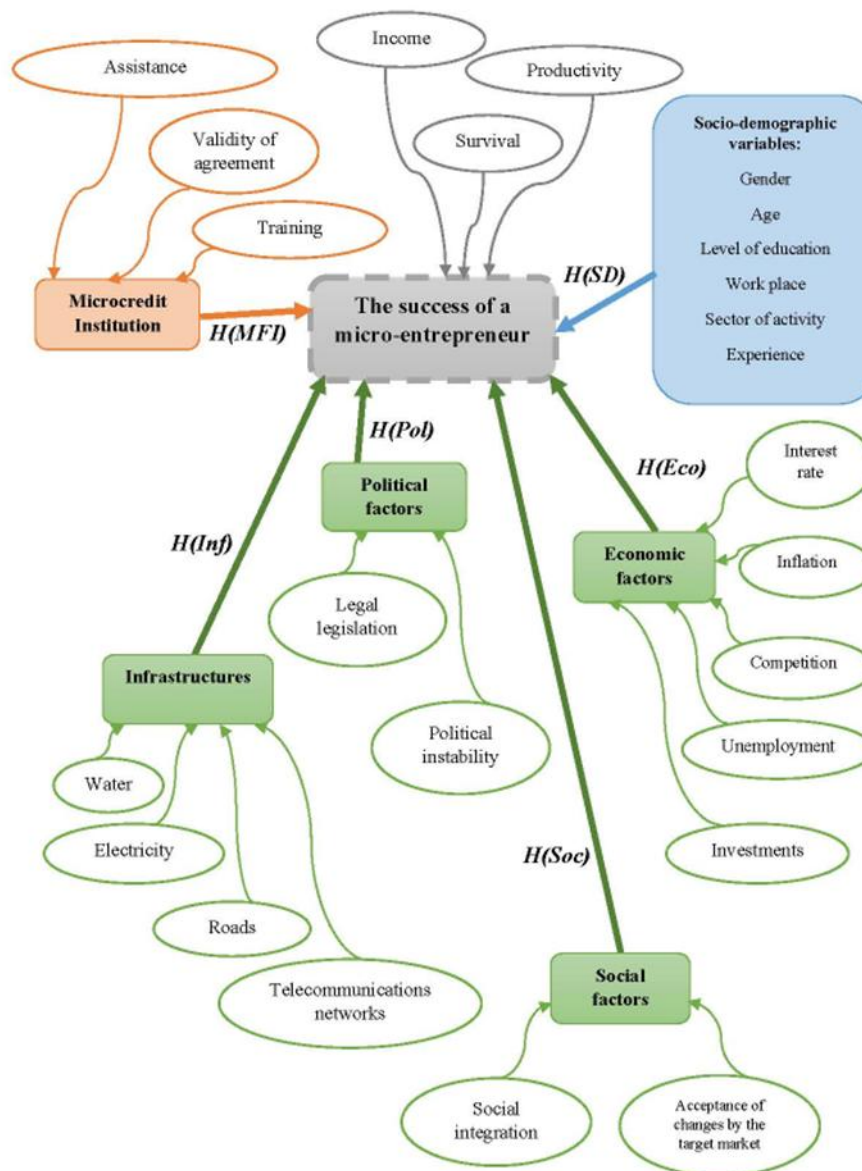


Figure 1. The initial research model

3.1 Research Hypotheses

H(SD): The sociodemographic variables significantly affect the success of the micro-entrepreneur in the creation and development of his micro-enterprise.

The personal characteristics of the micro-entrepreneur—such as education, skills, experience, and competencies—play a critical role in how effectively they manage their enterprise and respond to challenges. These sociodemographic variables have been shown to significantly influence the success and sustainability of micro-enterprises (Fazal, et al., 2022) (Valant-Gandja & Kamaha, 2024) (Musah, 2025).

H(IMF): Microfinance institutions significantly affect the success of a micro-entrepreneur in the creation and development of his micro-enterprise.

The role of microfinance institutions extends beyond simply providing credit. The quality of credit assessment, the inclusion of training, and the availability of coaching and support services all influence how well a micro-entrepreneur can utilize financing. Poor credit decisions or lack of support can negatively impact business outcomes (Abebaw & Tiruneh, 2020) (Al-Halmy & Al-Swidi, 2021) (Valant-Gandja & Kamaha, 2024) (Mawad, Mawad, & Mouawad, 2024).

H(Eco): Economic factors significantly affect the success of a micro-entrepreneur in the creation and development of his micro-enterprise.

Macroeconomic conditions—such as inflation, interest rates, unemployment, competition, and investment levels—shape the overall business environment. These economic factors can either facilitate or hinder the creation and growth of micro-enterprises (Zhou, Liang, & Bie, 2024) (Musah, 2025).

H(Soc): Social factors significantly affect the success of a micro-entrepreneur in the creation and development of his micro-enterprise.

The social context, including consumer behavior, cultural norms, and lifestyle trends, influences how well a micro-enterprise can integrate into the market. A mismatch between the entrepreneur's offering and social expectations can limit market acceptance and hinder success (Wahidi, 2017) (Analia, Syaukat, Fauzi, & Rustiadi, 2020) (Abebaw & Tiruneh, 2020) (Madhumithaa, Mishra, Sivaperumal, Adhav, & Sruthi, 2023).

H(Pol): Political factors significantly affect the success of a micro-entrepreneur in the creation and development of his micro-enterprise.

Political instability, changes in legislation, and regulatory complexity can disrupt business operations. These issues are especially challenging for micro-entrepreneurs, who often lack the capacity to adapt quickly to sudden changes (Zonzouzi, Hoseyni, & Khoramshashi, 2021) (Ebrahim, Toy, & Kassim, 2023).

H(Inf): The infrastructure significantly affects the success of a micro-entrepreneur in the creation and development of his micro-enterprise.

Access to reliable infrastructure—such as roads, electricity, water, and communication networks—is essential for micro-entrepreneurs. Improved infrastructure facilitates business operations, particularly for those in rural areas, and directly supports enterprise success (Obianuju, 2022) (Wibowo, et al., 2024).

The concept of "success" does not have a universally accepted definition. Some researchers associate it with business survival, while others link it to profitability, revenue growth, or other performance indicators. In this study, the success of a microenterprise is evaluated using multiple criteria, including the survival of the business, defined as operating for at least three years, a threshold commonly used in global studies. Additional indicators include increased income and enhanced productivity, whether through higher output or diversification of products and services (Hasun & Makhbul, 2011) (Valant-Gandja & Kamaha, 2024).

3.2 Methodology

To test the hypotheses proposed in this study, a quantitative research design was adopted. The study focuses on micro-entrepreneurs in Lebanon who have utilized microcredit as a source of financing to launch or expand their businesses. A

structured questionnaire was developed and distributed to individuals who had obtained microcredit at least three years prior to data collection, ensuring alignment with the survival threshold commonly referenced in similar research.

Although the primary focus is on micro-entrepreneurs, several major microfinance institutions (MFIs) in Lebanon, (including Al-Majmoua, Vitas S.A.L., and Emkan S.A.L.) played an indirect role in the study by serving as reference points for understanding the broader microfinance landscape and helping to identify potential respondents.

Due to the absence of official statistics on micro-entrepreneurs who have received microcredit in Lebanon, the size of the target population could not be determined with precision. Therefore, a snowball sampling technique was employed, whereby initial respondents referred others who met the study criteria. Although snowball sampling may introduce selection bias, it was appropriate in this context due to the absence of official statistics and the difficulty of identifying microcredit beneficiaries in Lebanon. Data collection followed a mixed-mode approach, combining in-person questionnaires, telephone interviews, and online distribution. This approach ensured broader geographic coverage and improved the diversity of respondents across different regions of Lebanon. A total of 350 responses were collected, of which 325 were deemed valid and retained for analysis after excluding 25 incomplete or invalid questionnaires.

3.3 Data analysis

The quantitative data obtained from the questionnaire were analyzed using Structural Equation Modeling (SEM) with SPSS-Amos software. This method was employed due to its ability to simultaneously estimate measurement and structural relationships among latent variables, and it is particularly suitable for analyzing complex models involving multiple interrelated constructs, such as institutional, individual, and environmental factors affecting entrepreneurial success (Kaplan, 2000; Kline, 2015). The SEM approach provides a comprehensive framework for examining complex relationships among latent constructs and is particularly useful for analysing the institutional, individual, and environmental factors associated with micro-entrepreneurial success. Its compatibility with theory-driven modelling and ability to account for measurement error make it a robust tool for social science research. Its compatibility with theory-driven modelling and ability to account for measurement error make it a robust tool for social science research. This method has been widely used in similar studies, such as those by Mhiri (2013), Abebe and Kegne (2023), Pradhan and Patnaik (2023), and Alharbi and Alshurideh (2021), who applied SEM with AMOS to explore the impact of microfinance and entrepreneurship-related factors.

4. Results and Discussion

4.1 Respondents demographic profile

The demographic profile of the respondents reveals a predominantly male sample (66.8%), with females representing 33.2%, indicating a gender imbalance that may reflect broader patterns of participation in the targeted economic activities or differences in access to microcredit. The majority are young to middle-aged, with 55.1% aged between 18 and 35 years and 39.7% between 36 and 50 years, while only 5.2% fall within the 51–64 age range. Educational attainment is generally modest, as most respondents have completed only primary (41.8%) or secondary (38.8%) education, with 11.4% holding higher education degrees and 8% being illiterate. This educational profile may influence the nature of business operations and the ability to adopt more advanced management or technological practices.

Geographically, the sample is concentrated in rural and semi-rural areas, particularly Akkar (30.5%) and North Lebanon (26.2%), which are known for their high poverty rates and reliance on agriculture and small-scale trade. Smaller shares are found in South Lebanon (9.2%), Mount Lebanon (8.6%), Beirut (7.4%), Bekaa (7.4%), Baalbak-Hermel (6.8%), and Nabatiyeh (4%), reflecting a diverse but uneven territorial coverage. The sectoral distribution shows a predominance of commerce (48%) and agriculture (35.7%), with industry (10.5%) and services (5.8%) playing a smaller role, highlighting the dominance of traditional economic activities in the sample.

In terms of professional experience, a considerable proportion of respondents have between 11 and 15 years (36.6%) or 16 and 20 years (24.9%) of experience, suggesting a mature workforce with substantial sector-specific knowledge. Those with 6 to 10 years of experience represent 19.4%, while newer entrants with less than 5 years account for 15.4%, indicating a steady inflow of participants into these sectors. Only a small fraction (3.7%) has more than 20 years of experience, which could be due to business turnover, shifting market conditions, or generational replacement. Overall, this demographic composition provides a workforce that is relatively experienced, modestly educated, and concentrated in commerce and agriculture, with strong representation from rural areas—factors that are likely to shape both the opportunities and constraints faced by micro-entrepreneurs in Lebanon (**Table 1**).

Table 1. Respondents' demographic profile

Variable	Description	Frequency	Percent
Gender	Male	217	66.8
	Female	108	33.2
Age	18 - 35	179	55.1
	36 - 50	129	39.7
	51 - 64	17	5.2
Education Level	Illiterate	26	8
	Primary	136	41.8
	Secondary	126	38.8
	Higher Education	37	11.4
Place of Work	Beirut	24	7.4
	Mount Lebanon	28	8.6
	North Lebanon	85	26.2
	Akkar	99	30.5
	Baalbak-Hermel	22	6.8
	Bekaa	24	7.4
	Nabatiyeh	13	4
	South Lebanon	30	9.2
Sector of Activity	Agriculture	116	35.7
	Industry	34	10.5
	Commerce	156	48
	Services	19	5.8
Experience	0 - 5 years	50	15.4
	6 - 10 years	63	19.4
	11 - 15 years	119	36.6
	16 - 20 years	81	24.9
	More than 20 years	12	3.7

4.2 Results of the exploratory analysis

The questionnaire data were analyzed using Structural Equation Modeling (SEM) with the software packages SPSS and AMOS. The SEM process involves several steps, beginning with the coding of responses to ensure compatibility with the software. This method requires conducting an exploratory factor analysis (EFA) followed by a confirmatory factor analysis (CFA). However, it is first essential to verify the normality of the data distribution.

According to Akrou (2010), normality is assessed using two criteria: skewness and kurtosis. Skewness measures the symmetry of the distribution and is acceptable if its absolute value is less than 1.96 (or at most 2), indicating the observations are reasonably balanced around mean. Kurtosis assesses the peakedness or flatness of the distribution and is acceptable when its absolute value is below 1.96, reflecting a reasonable concentration of observations. Applying these criteria to the questionnaire responses showed that all factors in the conceptual model fell within the acceptable ranges. Skewness values ranged from -1.498 to 0.759, while kurtosis values varied between -1.479 and 1.854, all within the acceptable limits. These results indicate that the data satisfy the normality assumptions required for SEM analysis, allowing for reliable estimation of the measurement and structural models (**Table 2**).

Table 2. Descriptive statistics for normality test

Variable	N	Mean	Skewness	Skewness Std. Error	Kurtosis	Kurtosis Std. Error
Gender	325	0.33	0.715	0.135	-1.498	0.27
Age	325	0.5	0.741	0.135	-0.419	0.27
Education Level	325	1.54	0.085	0.135	-0.468	0.27
Place of Work	325	3.05	0.652	0.135	-0.084	0.27
Sector of Activity	325	1.24	-0.15	0.135	-1.479	0.27
Experience	325	1.82	-0.194	0.135	-0.749	0.27
Success - Income	325	2.54	-0.917	0.135	-0.23	0.27
Success - Survival	325	2.59	-0.921	0.135	0.167	0.27
Success - Productivity	325	2.45	-0.812	0.135	-0.25	0.27
MFI - Study of Dossier	325	2.57	-0.721	0.135	-0.365	0.27
MFI - Training	325	0.62	0.759	0.135	-0.492	0.27
MFI - Accompaniment	325	2.73	-0.826	0.135	-0.182	0.27
Economic - Competition	325	2.29	-0.445	0.135	-0.461	0.27
Economic - Unemployment	325	2.23	-0.221	0.135	-0.835	0.27
Economic - Inflation	325	2.15	-0.388	0.135	-0.401	0.27
Economic - Interest Rates	325	2.69	-1.023	0.135	1.854	0.27
Economic - Investment	325	1.17	0.584	0.135	0.275	0.27
Political - Legislation	325	1.35	0.263	0.135	-0.567	0.27
Political - Political Stability	325	2.3	-0.809	0.135	-0.417	0.27
Social - Social Integration	325	2.18	-0.423	0.135	-0.609	0.27
Social - Acceptance of Change	325	1.59	-0.168	0.135	-0.503	0.27
Infrastructure - Water	325	2.33	-0.838	0.135	-0.252	0.27
Infrastructure - Electricity	325	2.43	-0.937	0.135	0.028	0.27
Infrastructure - Roads	325	2.13	0.106	0.135	0.463	0.27
Infrastructure - Telecommunications	325	2.44	-0.974	0.135	0.903	0.27

An Exploratory Factor Analysis (EFA) using the Principal Axis Factoring (PAF) method in SPSS was conducted. The following preliminary checks and results were obtained:

- Inter-item correlation: The correlation matrix indicated moderate to high correlations among items, confirming suitability for factor analysis.
- Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity: The Kaiser-Meyer-Olkin (KMO) values ranged from 0.500 to 0.752 across the constructs. The Success of Micro-Entrepreneurs and Economic Factors constructs showed the highest KMO values, while the remaining constructs recorded values close to the minimum acceptable threshold. Bartlett's test of sphericity was statistically significant for all constructs ($p < 0.05$), indicating that the variables were sufficiently correlated to proceed with factor analysis (
- **The** statistical tests provided sufficient support for proceeding with factor analysis, although the relatively low KMO values observed for several constructs should be considered when interpreting the results. The removal of the two low-loading items improved the measurement quality of the economic factor and strengthened the representation of the underlying construct. Furthermore, the internal consistency analysis (Cronbach's alpha) showed values ranging from 0.679 for infrastructure to 0.909 for the success of micro-entrepreneurs, indicating generally acceptable to high internal consistency across the constructs. Overall, these findings provide adequate support for the reliability of the measurement scales and their use in the subsequent analyses.

- **Table 3).**

- Factor loadings: Items with loadings below 0.40 were removed. Two items (*interest rate* and *investment*) were excluded from the economic factor (**Table 4**). For the remaining latent variables, success of micro-entrepreneurs, microfinance institution, political factors, social factors, and infrastructure, all measurement items recorded extraction values above the recommended threshold of 0.40. Therefore, no items were removed, and all were retained for subsequent analyses.
- Internal consistency (Cronbach's Alpha): Reliability tests showed that most constructs demonstrated acceptable to excellent internal consistency, with alpha values ranging from 0.679 to 0.909 (
- **The** statistical tests provided sufficient support for proceeding with factor analysis, although the relatively low KMO values observed for several constructs should be considered when interpreting the results. The removal of the two low-loading items improved the measurement quality of the economic factor and strengthened the representation of the underlying construct. Furthermore, the internal consistency analysis (Cronbach's alpha) showed values ranging from 0.679 for infrastructure to 0.909 for the success of micro-entrepreneurs, indicating generally acceptable to high internal consistency across the constructs. Overall, these findings provide adequate support for the reliability of the measurement scales and their use in the subsequent analyses.

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Table 3. KMO and Bartlett's test results

Construct	KMO	Bartlett's test (Sig.)	Cronbach's Alpha
Success of Micro-Entrepreneurs	0.752	0.000	0.909
Microfinance Institution	0.509	0.000	0.681
Economic Factors	0.715	0.000	0.730
Political Factors	0.500	0.001	0.682
Social Factors	0.500	0.000	0.848
Infrastructure	0.501	0.000	0.679

Table 4. Extraction results for economic factors

Variable	Initial	Extraction
Economic – Competition	0.404	0.604
Economic – Unemployment	0.418	0.478
Economic – Inflation	0.463	0.841
Economic – Interest Rate	0.161	0.190
Economic – Investment	0.050	0.100

Based on the results of the exploratory factor analysis, an initial measurement model was specified to test the factorial structure using confirmatory factor analysis (CFA). This model incorporated the retained items from the EFA, grouped according to their respective latent constructs (Figure 2). The purpose of this initial CFA was to assess the adequacy of the proposed structure and to verify the reliability and validity of the measurement scales. Fit indices from this first model provided a baseline for comparison and guided subsequent modifications to improve model fit in accordance with both statistical and theoretical considerations.

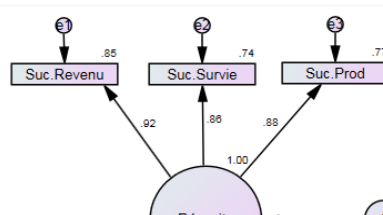


Figure 2. Initial global measurement model and the appropriate adjustment indices**4.3 Results of the confirmatory analysis**

Before conducting the confirmatory factor analysis (CFA), the univariate and multivariate normality of the dataset were examined. Skewness and kurtosis values for most items fell within the acceptable range of ± 1 , indicating no severe departures from normality.

Mardia's multivariate kurtosis coefficient was 5.018, with a critical ratio of 1.335, which is below the ± 1.96 threshold. This result confirms that the data satisfy the assumption of multivariate normality, justifying the use of maximum likelihood estimation in the CFA.

Once the assumption of multinormality was confirmed, a confirmatory factor analysis (CFA) of the overall measurement model was conducted (Najjar & Najar, 2013). The initial results indicated that the model did not adequately fit the data. Using the adjustment indices, certain items were removed to improve model fit. The refined measurement model demonstrated an overall acceptable fit. Most fit indices met the recommended thresholds, while AGFI (0.897) and RMSEA (0.081) were marginally outside the specified cut-off values. Taken together, the results indicate that the model provides an adequate representation of the data and is suitable for subsequent structural analysis (**Table 5**).

Table 5. The adjustment indices of the initial overall model after modifications

Designation	Chi-square	DL	Chi-square/DL	P	NFI	TLI	CFI	GFI	AGFI	RMSEA
The initial overall model	122.168	66	1.85	0.000	0.899	0.928	0.948	0.913	0.898	0.072
Recommended values	-	-	< 3	-	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	< 0.08

These fit indices indicate that the adjusted measurement model provides an acceptable representation of the data, with all major indices meeting recommended thresholds. Following the improvement of the measurement model's fit, additional psychometric tests were carried out to verify its quality. These analyses focused on four key aspects: reliability, convergent validity, discriminant validity, and stability, ensuring that the retained constructs were both conceptually sound and statistically robust.

- Convergent Validity: Convergent validity was assessed using the Average Variance Extracted (AVE), with a threshold of 0.50. In the initial assessment, the Success, MFI, and Economic Factors constructs achieved AVE values above this

threshold, whereas Political Factors, Social Factors, and Infrastructure recorded values below 0.50. Consequently, the low-performing items Pol.Leg, Soc.Acc.Chang, Inf.Routes, and Inf.Telecom were removed. Following these adjustments, the AVE values of the retained constructs exceeded the 0.50 threshold, providing support for convergent validity.

- Discriminant Validity: Discriminant validity was also tested using Fornell and Larcker's criterion, which requires that the AVE of each construct be greater than the squared correlation between that construct and others. The results confirmed discriminant validity for all constructs, ensuring that each construct is empirically distinct.
- Model Stability: A bootstrap assessment with 2,000 resamples and a 95% confidence interval was conducted to examine the measurement model. Of the 15 standardized parameter estimates assessed, 12 were statistically significant ($p < .05$), corresponding to 80%. The latent-variable variances, error variances, covariances among latent variables, and squared multiple correlations were significant for all parameters assessed.

These results confirm that the refined measurement model meets the essential criteria for reliability and validity. The constructs not only capture their intended concepts with accuracy but are also clearly differentiated from each other. Furthermore, the bootstrap results provide additional information regarding the stability of the model estimates and support proceeding to the subsequent structural model assessment. The detailed fit indices for the adjusted model are presented below (**Table 6**).

Table 6. Fit Indices of the Measurement Model After EMV-Based Adjustments

Designation	Chi-square	DL	Chi-square/DL	P-value	NFI	TLI	CFI	GFI	AGFI	RMSEA
The overall model	73.149	25	2.92	0.000	0.934	0.919	0.955	0.928	0.897	0.081
Recommended values	-	-	< 3	-	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	< 0.08

These results indicate that, after refinement, the measurement model achieves satisfactory goodness-of-fit, with all major indices meeting or approaching the recommended benchmarks. This confirms that the constructs are well-measured and the model is suitable for use in the subsequent structural analysis.

The corresponding path diagram of the final measurement model, after item removal and adjustments, is presented in (Figure 3). This diagram illustrates the retained constructs and their measurement variables, reflecting the improved reliability and validity achieved through the modification process.

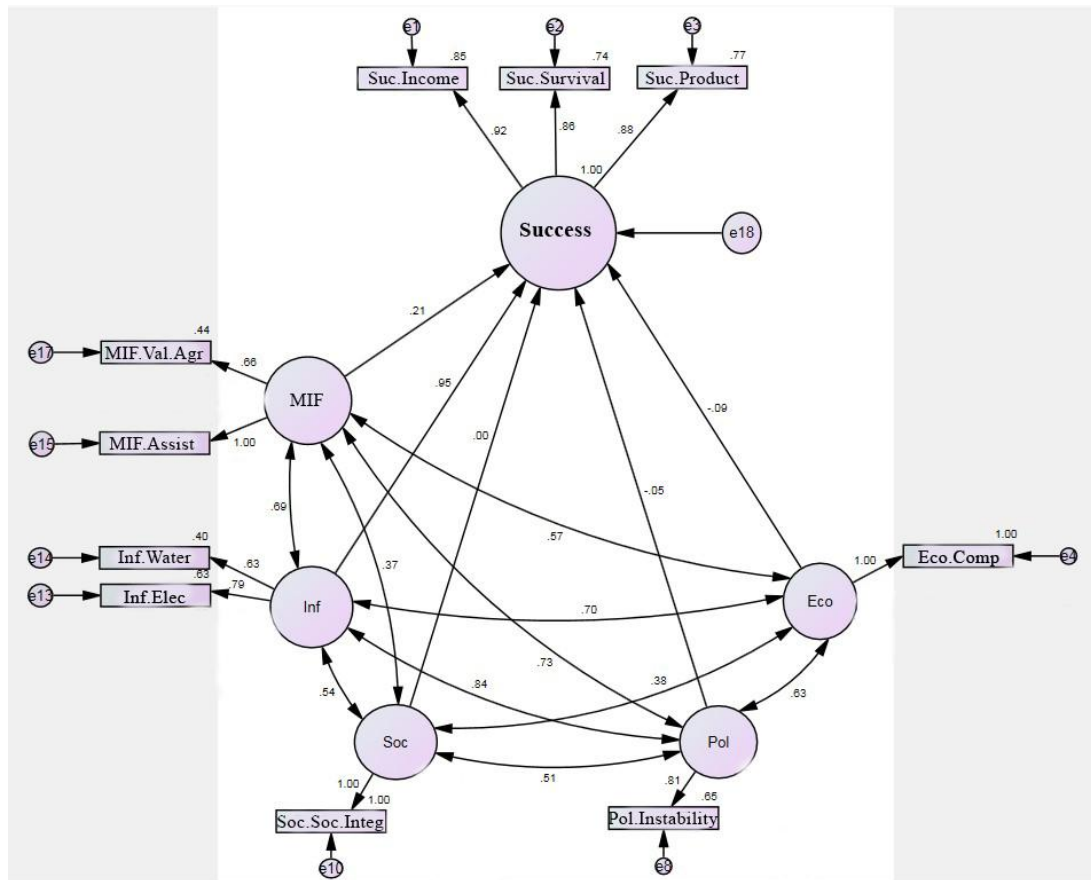


Figure 3. Measurement model after modifications

After verifying the stability of the overall measurement model, the model was evaluated both with and without control variables. The comparison of fit indices indicated that the model demonstrated a better fit when control variables were included (Figure 4).

A bootstrap assessment with 2,000 resamples and a 95% confidence interval was conducted for the structural model. Of the 50 standardized parameter estimates assessed, 38 were statistically significant ($p < .05$), corresponding to 76%. The error variances and squared multiple correlations were significant for all parameters assessed. The significance of the structural links was assessed using the Critical Ratio (C.R.), which must be equal to or greater than 1.96. This threshold ensures that the regression link is significantly different from zero at the 5% level of significance. Accordingly, the probability (p-value) should be less than 0.05. The standardized factor loadings indicate both the strength and direction of the relationships between the variables.

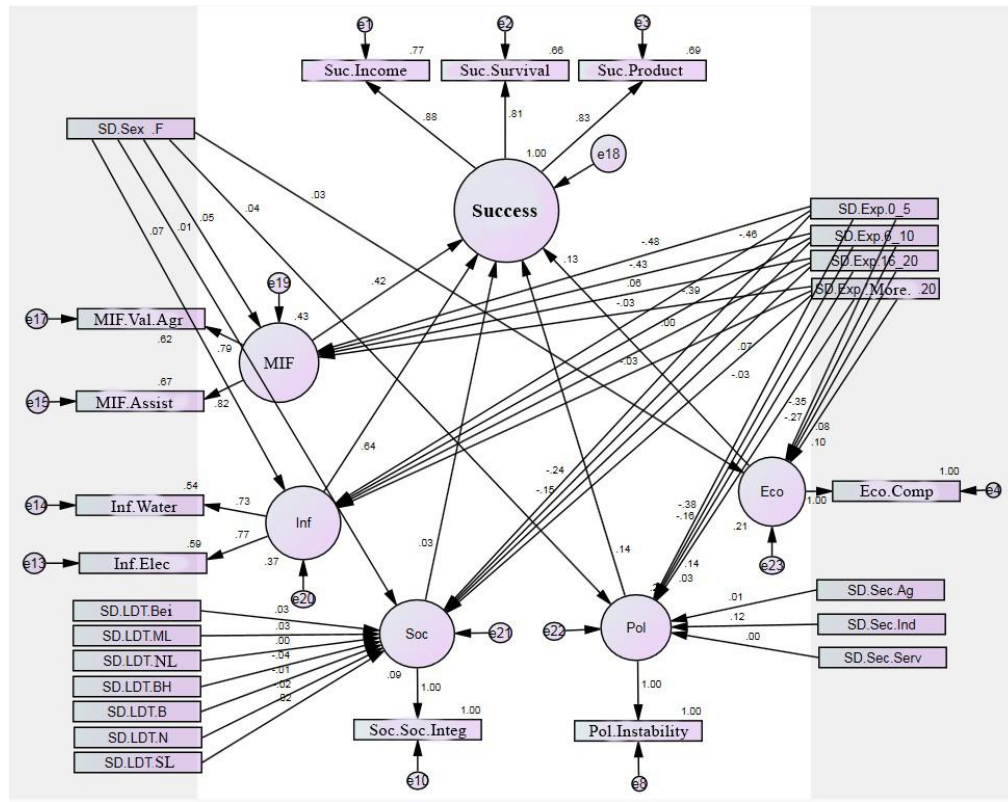


Figure 4. research model with control variables

Table 7. Structural path estimates and hypothesis testing

Hypothesis	Relationship	Estimate	S.E.	C.R.	p-value	Decision
H(MFI)	MFI → Success	0.592	0.045	8.669	< .001	Supported
H(Eco)	Economic factors → Success	0.527	0.024	4.091	< .001	Supported
H(Soc)	Social factors → Success	0.032	0.024	1.081	.280	Not supported
H(Pol)	Political factors → Success	0.537	0.023	4.431	< .001	Supported
H(Inf)	Infrastructure → Success	0.636	0.061	11.114	< .001	Supported

The structural path results presented in Table 7 show that the relationships between microfinance institution support and success, economic factors and success, political factors and success, and infrastructure and success are statistically significant. Accordingly, H(MFI), H(Eco), H(Pol), and H(Inf) are supported. In contrast, the relationship between social factors and success is not statistically significant (C.R. = 1.081, $p = .280$); therefore, H(Soc) is not supported.

Regarding the socio-demographic variables, the analysis identified gender, sector of activity, and entrepreneurial experience as relevant control variables in the final structural model. Their inclusion improved the specification of the model and provides partial support for H(SD).

The final research model (Figure 5) outlines the key factors influencing the success of micro-entrepreneurs. It underscores the role of microcredit institutions—particularly their assistance and agreement validity—alongside socio-demographic variables such as gender, sector of activity, and experience. The model also incorporates external environmental factors, including infrastructure (e.g., access to water and electricity), political factors (e.g., political instability), and economic factors (e.g., market competition). Collectively, these variables affect income, business survival, and productivity, providing a comprehensive framework for understanding entrepreneurial success in developing contexts.

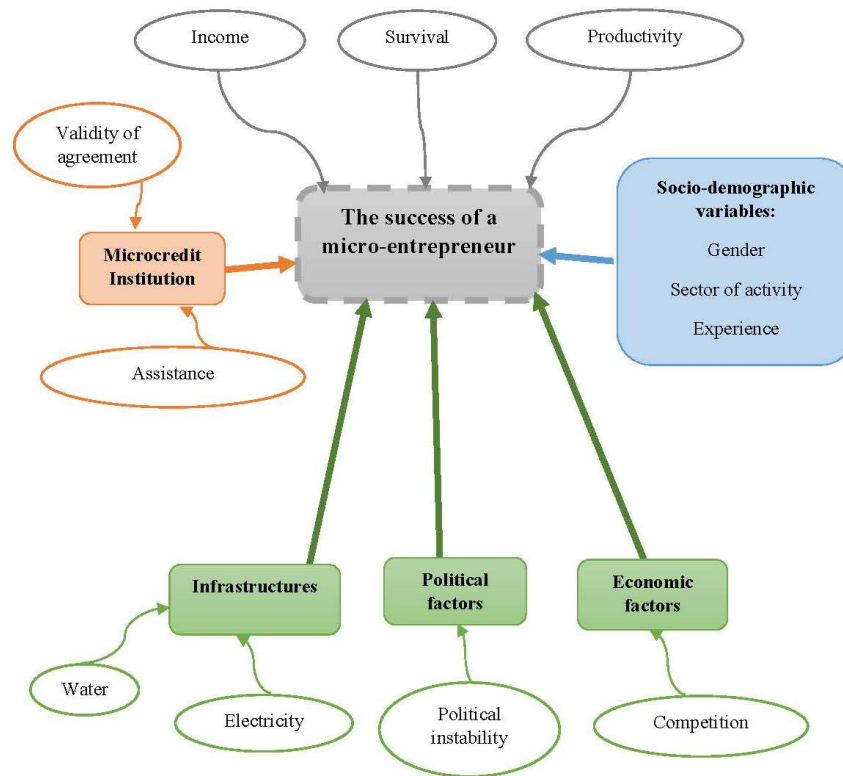


Figure 5. The final model

4.4 Discussion

This study examines the factors associated with micro-entrepreneurial success among microcredit recipients in a fragile economic environment by considering both internal and external factors. The findings show that entrepreneurial success among microcredit recipients depends not only on access to finance but also on institutional support, individual capabilities, and broader contextual conditions. In particular, microfinance institutions play a central role in shaping entrepreneurial outcomes through the quality of support services, including training, guidance, and monitoring.

Entrepreneurial experience also emerges as a key determinant of success. This indicates that individual capabilities play a crucial role in transforming financial access into sustainable business outcomes. In uncertain environments such as Lebanon, experience allows entrepreneurs to better manage risks and adapt to market constraints.

External factors were significantly associated with entrepreneurial outcomes. Economic constraints, particularly competition, were associated with reduced growth opportunities and lower profitability among microcredit recipients. Similarly, political instability was associated with greater uncertainty and business risk, making it more difficult for micro-entrepreneurs to plan and invest. Infrastructure limitations, such as unreliable electricity and water supply, were also associated with constraints on productivity and increased operational costs.

In contrast, social factors are not found to be statistically significant. This may indicate that structural and institutional constraints outweigh social influences in this context, or that social dynamics are difficult to capture through quantitative measures.

This finding is consistent with Valant-Gandja and Kamaha (2024), but extends their results by highlighting the importance of institutional support in fragile economic contexts.

Overall, the findings indicate that micro-entrepreneurial success among microcredit recipients in fragile economies is associated with a combination of institutional support, individual capabilities, and environmental conditions. Access to finance alone does not appear sufficient to explain entrepreneurial success. These results highlight the need for a more comprehensive approach to microfinance policy that extends beyond financial access alone.

5. Conclusion

This study examined the role of microcredit in supporting the creation and development of micro-enterprises in a fragile economic environment, using Lebanon as an empirical setting. The findings show that access to finance alone is not sufficient to ensure entrepreneurial success. Internal factors, such as entrepreneurial experience and the quality of support provided by microfinance institutions, play a central role in shaping outcomes, while external factors, including market competition, political instability, and infrastructure constraints, significantly influence business performance.

These findings indicate that micro-entrepreneurial success among microcredit recipients is strongly associated with the context in which their businesses operate. Microcredit should therefore not be viewed as a standalone solution to poverty alleviation or entrepreneurial development. Rather, the outcomes of microcredit-supported enterprises are associated with the interaction of institutional support, individual capabilities, and the broader economic and political environment. This contributes to the literature by providing a more comprehensive framework for understanding micro-entrepreneurial success in fragile economies.

These results have important implications for policymakers and development practitioners. Strengthening microfinance institutions, improving access to training and advisory services, and addressing structural constraints such as infrastructure deficiencies and political instability may improve the conditions under which microcredit-supported enterprises operate. Policies aimed at promoting entrepreneurship in fragile contexts should therefore adopt an integrated approach that combines financial inclusion with institutional and economic reforms.

5.1 Recommendations

For the State

Share relevant information and statistics with microcredit institutions; reduce income tax rates or offer tax exemptions for MFIs; provide grants; launch public awareness campaigns to highlight the role of microfinance institutions; and improve infrastructure—particularly water and electricity services.

For the Central Bank of Lebanon (BDL)

Establish a dedicated department or specialized entity for microfinance; allow MFIs to offer savings services to clients; and create a Central Risk Department (CDR) specific to microcredit, in collaboration with the existing conventional CDR.

For banks

Organize competitions to support innovative ideas from micro-entrepreneurs; and extend the grace period on loans granted to MFIs, especially during times of financial or political crises.

For micro-entrepreneurs

Participate in training programs related to their field of work and its surrounding disciplines; and establish strong, long-term relationships with microfinance institution experts.

For MFIs

Offer regular training sessions; conduct thorough file assessments before granting microcredit; run targeted advertising campaigns; increase the available loan amounts when appropriate; and guide micro-entrepreneurs toward specific business activities based on market research findings.

Declaration

Data availability statement: The data used in this study are available from the author upon reasonable request.

Author contributions: Both authors contributed to the conceptualization, methodology, data collection, analysis, and writing of the manuscript. Both authors have read and approved the final version of the paper.

Conflict of interest statement: The authors declare that they have no conflicts of interest.

Funding statement: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Ethics statement: This study involved survey data collected from micro-entrepreneurs in Lebanon. Participation was voluntary, and respondents were informed about the purpose of the research before completing the questionnaire. No personally identifiable information is reported in the manuscript. The study was conducted in accordance with ethical principles for social science research.

Generative AI and AI-assisted technologies in the writing process: During the preparation of this manuscript, the authors used AI platforms for English-language editing and to improve the clarity, organization, and phrasing of selected passages. The tool was used to assist with language refinement and paragraph restructuring and was not used to generate or analyze data,

conduct statistical analyses, or determine the study's findings. The authors reviewed and edited all AI-assisted output and take full responsibility for the content and accuracy of the final manuscript.

Figures

Figure 1. Initial research model

Figure 2. Initial measurement model

Figure 3. Refined model based on EMV results

Figure 4. Research model with control variables

Figure 5. Final research model

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