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Gender differences in access to financing for microenterprises in Morona Canton, Ecuador

Diferencias de género en el acceso al financiamiento para microempresas en el Cantón Morona, Ecuador

Diferenças de gênero no acesso a financiamento para microempresas no Cantão de Morona, Equador

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Abstract

Introduction: This article examines gender differences in access to financing for microenterprises in Morona Canton, Ecuador, within the context of social and economic inequalities that impact business development. **Objective**: To determine how gender influences the likelihood of obtaining financing, identifying the specific barriers faced by women microentrepreneurs. **Methodology**: A non-experimental quantitative design was employed using a Logit model to analyze data collected through surveys of 351 microenterprises, considering variables such as gender, productive sector, education level, experience, profits, productivity, and expenses. **Results**: The analysis reveals that women are 23% less likely to access financing compared to men, as reflected by an odds ratio of 0.77. Furthermore, being a woman reduces the probability of obtaining credit by 1.54%. Variables such as productivity and the number of employees positively influence access to credit regardless of gender. **Conclusions**: Women microentrepreneurs face additional barriers to accessing financing, possibly associated with limitations in support networks and business experience. The results emphasize the need for inclusive financial policies that promote gender equity in financing access and strengthen the growth of women-led microenterprises.

Keywords: economic and social development; gender equality; social inclusion; financial institutions; microfinancing.

JEL: D25; D51; E32; G51; M21.

Resumen

Introducción: Este artículo examina las diferencias de género en el acceso al financiamiento de microempresas en el cantón Morona, Ecuador, en un contexto de desigualdades sociales y económicas que impactan el desarrollo empresarial. **Objetivo**: Determinar cómo el género influye en las probabilidades de conseguir financiamiento, identificando las barreras específicas que enfrentan las mujeres microempresarias. **Metodología**: Se empleó un diseño cuantitativo no experimental con un modelo Logit para analizar datos recolectados mediante encuestas a 351 microempresas, considerando variables como género, sector productivo, escolaridad, experiencia, utilidades, productividad y gastos. **Resultados**: El análisis revela que las mujeres tienen un 23% menos de probabilidades de acceder al financiamiento en comparación con los hombres, reflejado en un *odds ratio* de 0.77. Además, ser mujer reduce la probabilidad de obtener crédito en un 1.54%. Variables como la productividad y el número de empleados influyen positivamente en el acceso al crédito, independientemente del género. **Conclusiones**: Las mujeres microempresarias enfrentan barreras adicionales para acceder al financiamiento, posiblemente asociadas a limitaciones en redes de apoyo y experiencia empresarial. Los resultados subrayan la necesidad de políticas financieras inclusivas que promuevan la equidad de género en el acceso al financiamiento y fortalezcan el crecimiento de las microempresas lideradas por mujeres.

Palabras clave: desarrollo económico y social; igualdad de género; inclusión social; instituciones financieras; micro financiación.

JEL: D25; D51; E32; G51; M21

Resumo

Introdução: Este artigo examina as diferenças de gênero no acesso ao financiamento de microempresas no cantão de Morona, Equador, em um contexto de desigualdades sociais e econômicas que impactam o desenvolvimento empresarial. **Objetivo:** Determinar como o gênero influencia a probabilidade de obter financiamento, identificando as barreiras específicas enfrentadas por mulheres microempreendedoras. **Metodologia:** Foi utilizado um desenho quantitativo não experimental com um modelo Logit para analisar dados coletados por meio de pesquisas com 351 microempresas, considerando variáveis como gênero, setor produtivo, escolaridade, experiência, lucros, produtividade e despesas. **Resultados:** A análise revela que as mulheres têm 23% menos probabilidade de acessar o financiamento em comparação aos homens, refletido por um odds ratio de 0,77. Além disso, ser mulher reduz a probabilidade de obter crédito em 1,54%. Variáveis como produtividade e número de funcionários influenciam positivamente o acesso ao crédito, independentementedogênero. **Conclusões:** Asmulheresmicroempreendedoras enfrentam barreiras adicionais para acessar o financiamento, possivelmente associadas a limitações nas redes de apoio e experiência empresarial. Os resultados destacam a necessidade de políticas financeiras inclusivas que promovam a equidade de gênero no acesso ao financiamento e fortaleçam o crescimento das microempresas lideradas por mulheres.

Palavras-chave: desenvolvimento econômico e social; igualdade de gênero; inclusão social; instituições financeiras; microfinanciamento.

JEL: D25; D51; E32; G51; M21.

Introduction

Access to financing is crucial for the development and sustainability of microenterprises, as it enables capital investment, improves productivity, and fosters business expansion (Ramírez et al., 2022). However, this access is not equal for all entrepreneurs, especially when considering gender. Women-led microenterprises often face additional barriers that limit their ability to obtain financing, restricting their business potential and impacting local economic development (Pailhé, 2023). These inequalities may stem from factors such as limited access to support networks and less business experience (López et al., 2022).

This study focuses on analyzing gender differences in access to financing for microenterprises in Morona Canton, Ecuador, contributing to the discussion on financial inclusion and economic development from a multidisciplinary perspective. The main objective is to determine how gender influences the likelihood of obtaining financing. To this end, the study employs a survey-based methodology, applied to 351 microenterprises, collecting socioeconomic and structural variables that affect credit access (Ortiz et al., 2023). The research aims to identify the explanatory variables of these inequalities and offer recommendations to improve financial inclusion for women microentrepreneurs, emphasizing their impact on the local economy.

Morona Canton, located in the Amazon region of Ecuador, represents a setting where microenterprises play a key role in job creation and the development of rural communities. However, women-led microenterprises face greater obstacles in accessing financing compared to their male counterparts, limiting their growth and competitiveness (García, 2019). This highlights the need for studies like the present one, which assess how these inequalities affect the local economic structure and contribute to the design of more inclusive public policies.

Thus, this study seeks to answer how gender influences access to financing for microenterprises in Morona Canton and underscores the need for policies that promote equal access to credit. Such policies are essential to reducing gender barriers, improving microenterprise sustainability, and ultimately driving local economic development through an interdisciplinary approach inherent to the social sciences.

Conceptual Framework

Access to financing for microenterprises has been a central topic in economic and business research due to its impact on growth, sustainability, and local economic development. In this context, credit access theories and economic discrimination models are fundamental to understanding how various factors, including gender, affect the likelihood of obtaining financing and, consequently, the development of microenterprises. This study aligns with this approach by examining key variables that influence credit access in Morona Canton, Ecuador.

Theories of Access to Financing

The theory of information asymmetry is essential for understanding the barriers faced by microenterprises, particularly those led by women, in their attempts to obtain financing. This theory posits that lenders, lacking complete information about applicants' repayment capacity, impose stricter requirements or, in some cases, discriminate against certain groups (Woolcott y Ramírez, 2024). Women microentrepreneurs, for instance, have historically had less access to formal financial networks and capital resources, placing them at a disadvantage.

Financial institutions impose credit restrictions due to a lack of knowledge about the specific needs of women entrepreneurs, leading to inadequately designed financial products and limitations in demand. Furthermore, the scarcity of sex-disaggregated data makes it difficult to fully understand the reality of financing access, hindering the development of suitable business models for credit offerings (Mayher et al., 2022).

Gender and Access to Financing

Various studies have documented gender discrimination in access to financing, showing that women entrepreneurs face greater barriers to obtaining credit compared to men, even under similar conditions (Auguste y Galetto, 2020; Álvarez et al., 2023). These barriers include biases in credit policies, lack of access to business networks, and difficulty in acquiring the necessary guarantees required by financial institutions. In this study, the econometric analysis reveals that women in Morona Canton have a significantly lower probability of accessing financing, supporting previous findings.

Social capital theory provides an additional explanation for this relationship, emphasizing that social and business networks are fundamental for accessing financial resources. Women tend to have more limited networks compared to men, restricting their investment and financing opportunities (López et al., 2020). This phenomenon is observed in Morona Canton, where women microentrepreneurs face greater difficulties in obtaining credit than their male counterparts.

Evaluated Variables

This study includes a set of variables selected based on existing literature on microenterprise financing and the influence of gender, aiming to analyze how these factors affect access to credit.

Commercial Sector

The commercial sector is one of the most predominant activities among microenterprises, especially in rural or semi-rural areas like Morona Canton. According to market structure theory, businesses in this sector often rely on immediate cash flows and have limited access to fixed capital, which affects their ability to secure formal financing (López et al., 2019).

Previous studies indicate that commercial microenterprises tend to resort to informal financing due to the dynamic nature of their operations, facing additional risks such as demand fluctuations and dependence on working capital (Paredes, 2020). This underscores the need to examine how the productive sector influences access to financing and how the predominance of the commercial sector in Morona affects local microenterprise growth opportunities.

Gender and Access to Financing

Gender is a central variable in this study's analysis of access to financing. Research has shown that women face additional barriers to obtaining credit, influenced by persistent gender biases and stereotypes within financial institutions (Pailhé, 2023). This phenomenon is more evident in traditional sectors, where lenders perceive women as less competitive or incapable of managing financial risks (Monrroy et al., 2022). The lack of business networks that facilitate referrals and expedite financing further exacerbates the situation, limiting opportunities for women entrepreneurs (Saavedra et al., 2021).

Credit restrictions for women microentrepreneurs are not only due to perceptions of financial risk but also to cultural and social factors that affect female entrepreneurial capacity (Auguste et al., 2021). Inclusive public policies focused on promoting financial inclusion and strengthening business support networks are essential to reducing this gender gap (Clausen y Trivelli, 2021).

Education Level

The education level of a microentrepreneur is crucial for understanding how education impacts business management and the ability to access financing.

According to human capital theory, higher education levels equip individuals with better tools to manage their businesses, interpret market conditions, and negotiate financing (Sandoval y Hernández, 2018). While education is often a positive predictor for access to financing, in rural or informal contexts like Morona, its influence is not always decisive (Payró et al., 2020). This highlights the importance of considering other factors, such as informal relationships with local lenders.

Entrepreneurial Experience

Entrepreneurial experience directly influences a microenterprise’s ability to manage financial resources. Human capital theory suggests that entrepreneurs with greater experience develop better managerial skills and a deeper understanding of market dynamics, increasing their likelihood of obtaining financing (Ríos et al., 2019). Studies have shown that microenterprises led by experienced women perform better and have greater chances of success (Alene, 2020), enhancing their financing opportunities due to their stability and lower perceived risk. In Morona, this variable is analyzed to determine whether experience helps reduce credit access barriers in the context of geographic and socioeconomic limitations.

Profitability

Profit generation is a direct indicator of a microenterprise's financial performance and profitability (Carchi Arias et al., 2020). This relationship exists because profits not only reflect income-generating capacity but also efficiency in resource management. Proper business management optimizes asset utilization, from material to financial resources, aiming to maximize profits and ensure good profitability (Asanza y Avendaño, 2023; Puerta et al., 2018). This, in turn, enables investment in business growth and facilitates access to new sources of financing.

Productivity

Productivity, measured in terms of revenue per employee or production unit, is another key factor in access to financing (Kamichi, 2023). Market efficiency suggests that productive businesses are competitive and, therefore, more likely to obtain financial resources (Ferraz y Ramos, 2018). In fact, a higher level of productivity is directly associated with lower credit risk.

Recent studies have found that highly productive microenterprises have a greater likelihood of securing financing, regardless of their size or sector (Guzmán et al., 2020). However, this also depends on the adoption of technologies and innovation in business processes, which can present a challenge in rural areas where access to modern technologies is limited. This limitation reduces productive capacity and, consequently, restricts opportunities for obtaining financing (Dávalos, 2021).

Expenditure

A company’s financial stability is closely linked to how it manages its expenditures, which not only reduces financial risks but also significantly contributes to its long-term sustainability (Barrueto y Marchena, 2024). In practice, various financing mechanisms exist. According to Fernández et al. (2022), financing can be formal—regulated under financial system standards—or informal, characterized by higher interest rates and less regulation. Espinoza et al. (2019) further highlight the close relationship between expenditure levels and access to working capital, both formal and informal.

Methodology

Research Approach and Design

This study employs a quantitative approach to analyze gender differences in access to financing for microenterprises in Morona Canton, Ecuador. This approach enables the establishment of statistical relationships between variables and allows conclusions to be drawn based on objective data. The research follows a non-experimental design, as the study variables were not manipulated; instead, observational data were collected from subjects in their natural environment. A cross-sectional design was adopted, gathering data at a single point in time to identify patterns and trends in microenterprise financing. This design is appropriate for the study's objective, which seeks to understand the factors influencing microenterprise financing based on gender.

Population and Sample

The study population consisted of 2,229 registered microenterprises in Morona Canton, Ecuador, specifically in the commercial sector, which is predominant in the region. Morona Canton is characterized by a diverse range of entrepreneurial activities in sectors such as commerce, manufacturing, and services. A non-probabilistic convenience sample of 351 microenterprises was selected to ensure direct access to relevant participants for the study. The subjects of analysis were the owners, managers, or representatives of the selected microenterprises. The sample size was determined using the finite population formula, with a 95% confidence level and a 4.799% margin of error, ensuring the representativeness of the results for the entire population of the canton.

Data Collection

Data were collected using a structured questionnaire specifically designed for this study. The questionnaire included sociodemographic and business-related questions, addressing variables such as the productive sector, business owner's gender, age, education level, number of employees, profitability, business experience, productivity, and access to financing. The questions were presented in different formats, including Likert scale, multiple-choice, and short-answer responses, facilitating the subsequent quantitative analysis. Google Forms was used as the data collection tool, enabling broader coverage and greater flexibility in microenterprise participation. To ensure the validity and reliability of the instrument, pilot tests and expert validation were conducted. The questionnaire achieved a Cronbach's alpha coefficient of 0.94, indicating high internal consistency, and an expert validation coefficient of 0.953, supporting the methodological robustness of the instrument.

Level of Analysis and Variables

This research follows an inferential analysis approach, aiming to determine how different independent variables influence the dependent variable, which is access to financing. Inferential analysis allows for the generalization of sample results to the total population, identifying significant patterns and relationships.

The variables evaluated in this study include:

- Sector: Classified as commerce or services, to analyze the influence of the productive sector on access to financing.
- Gender: A central variable, classified as male or female, to identify differences in access to financing.o.
- Education level: Measured in years of completed education, to assess its relationship with business management skills and access to financing.
- Age: A continuous variable measured in years, to explore its influence on the likelihood of obtaining financing.
- Profitability: A financial indicator measured through the microenterprise's sales revenue.
- Business experience: The length of time the owner and the company have been engaged in microenterprise activity, a factor that may affect lenders' risk perception.
- Productivity: Evaluated through the owner's salary, business income, and number of employees, to analyze its effect on access to credit.
- Expenditure: Reflects the level of operational expenses of the microenterprise, related to its financial stability.
- The dependent variable is access to financing, categorized as binary (access or no access).

Statistical Analysis and Data Processing

The collected data were processed and analyzed using the STATA statistical software. A Logit model was employed to analyze the probabilities of accessing financing based on the independent variables. This approach follows the model proposed by Alvarado et al. (2020), which describes the probability of an event occurring, conditioned on the independent variables. Using Equation 1, the basic concept of the model is explained, expressed as the probability of occurrence given a conditional event:

$$P(Y = 1 \mid X_1, X_2, \dots, X_k) = \frac{e^{\beta_0+\beta_1 X_1+\beta_2 X_2+\cdots+\beta_k X_x}}{1+ e^{\beta_0+\beta_1 X_1+\beta_2 X_2+\cdots+\beta_k X_x}} \tag{1}$$

Where $X_1, X_2, \dots, X_k$ represent the independent variables of the study, such as gender, age, or productivity, and the β coefficients are estimated from the data, allowing the calculation of the probability of access to financing.

Research Location

The study was conducted in Morona Canton, located in the Morona Santiago Province, Ecuador. This region is representative of rural and semi-rural areas in Latin America, where microenterprises play a significant role in the local economy. Morona faces unique challenges regarding access to financing due to its geographic location, limited financial infrastructure, and socio-economic barriers, particularly affecting women-led microenterprises. Selecting this location for the study allows for addressing a critical issue within regional economies and contributes insights that can be applied to other areas with similar characteristics.

Results

The main objective of this study was to identify how gender influences access to financing for microenterprises in Morona Canton, Ecuador. To achieve this, a Logit model was applied that included various independent variables such as the productive sector, age, education level, number of employees, expenditure, and productivity. The analysis results indicate that there are significant differences between men and women regarding the probability of obtaining financing, thereby confirming the influence of gender on access to financial resources.

Logistic Analysis by Gender

This section presents the results of the logistic regression analysis for both male and female subjects. Table 1 summarizes the estimated coefficients, standard errors, and significance levels of the variables for both genders. It can be observed that for both genders, the variables of education level and income productivity have a significant impact on the likelihood of accessing financing:

Education Level: The negative coefficient for education (–0.1868 for men and –0.1758 for women) indicates that a higher level of education decreases the probability of obtaining credit. This result may be related to a preference for alternative financing sources among microentrepreneurs with higher education, who possibly seek to avoid the requirements and conditions imposed by formal financial institutions. This tendency suggests that knowledge and education influence the way microentrepreneurs approach financing, leading them to explore non-banking financing options such as peer-to-peer loans, cooperatives, or other informal sources.

Income Productivity: Productivity, measured by the revenues generated, shows a positive coefficient (0.0026) for both men and women. This indicates that microenterprises with higher revenues are more likely to access financing. The finding suggests that financial institutions tend to consider revenue as a key indicator of a microenterprise's solvency and repayment capacity, regardless of gender. The importance of productivity as a determining factor in access to credit underscores the need to strengthen business capabilities and increase productivity to enhance financing opportunities.

Gender: Although the coefficient for gender is negative for women (–0.2614), indicating a lower probability of obtaining financing compared to men, this value is not statistically significant ($p > 0.05$). Nonetheless, the observed trend suggests the existence of possible gender-related barriers that might influence the credit acquisition process. This finding aligns with previous studies that have documented gender discrimination in access to financing, although further detailed research is required to identify the underlying causes of this gap.

Expenditure*:* The negative coefficients for expenditure (–0.0023 for men and –0.0024 for women) suggest that a higher level of operating expenses reduces the probability of accessing financing. This may be due to financial institutions perceiving companies with higher expenditures as riskier, which negatively affects their access to credit.

Profitability: Profitability shows a positive coefficient (0.00015) for both genders, with statistical significance ($p < 0.05$). This indicates that more profitable microenterprises have a higher likelihood of obtaining financing. This result confirms the importance of profitability as a key factor in the credit evaluation process by financial institutions.

Table 1

Logistic Regression Estimates by Gender

Variable	Male (Coef.)	Std. Err.	Female (Coef.)	Std. Err.	P>z (Male)	P>z (Female)
Sector	-0.7651	0.4888	-0.7007	0.4938	0.118	0.156
Gender	0.0957	0.3607	-0.2614	0.3623	0.791	0.471
Age	-0.0186	0.0136	-0.0179	0.0136	0.172	0.188
Education Level	-0.1868	0.0545	-0.1758	0.0544	0.001	0.001
Expenditure	-0.0023	0.0005	-0.0024	0.0005	0.000	0.000
Employees	-0.0456	0.0323	-0.0456	0.0319	0.157	0.153
Profitability	0.00015	0.00003	0.00015	0.00003	0.000	0.000
Experience	-0.00016	0.00044	-0.00017	0.00044	0.724	0.705
Salary Productivity	0.0001	0.0005	0.0001	0.0005	0.844	0.866
Income Productivity	0.0026	0.0003	0.0026	0.0003	0.000	0.000

Source: Prepared by the authors.

Odds Ratios by Gender

To better understand the impact of each variable on the probability of obtaining financing, odds ratios were calculated. These ratios provide a quantitative measure of the magnitude of each variable’s effect on access to financing. Table 2 presents the odds ratios for men and women, offering an interpretation of the relative probabilities of obtaining financing based on a unit change in the independent variables while keeping the others constant. Below are the key findings:

Education Level: The odds ratios for education are 0.83 for men and 0.84 for women, indicating that for each additional year of education, the probability of accessing financing decreases by approximately 17%. Although this result may seem counterintuitive, it could suggest that microentrepreneurs with higher education levels tend to explore alternative financing options rather than formal credit. Alternatively, financial institutions may perceive business owners with higher education as being less in need of credit. This highlights the importance of understanding the underlying dynamics between education and access to financing in different business contexts.

Income Productivity: Productivity based on economic income shows an odds ratio of 1.0026 for both genders, suggesting that an increase in income slightly improves the probability of obtaining financing. This implies that as microenterprises enhance their financial performance, their ability to access credit improves, likely because financial institutions view income levels as a positive indicator of solvency and business stability.

Expenditure: The odds ratios for expenditure (0.9977 for men and 0.9976 for women) are slightly below 1, indicating that an increase in operating expenses marginally reduces the probability of obtaining financing. This may be because financial institutions perceive microenterprises with higher expenses as riskier and less solvent.

Gender: The odds ratio for the female gender is 0.77, meaning that women have a 23% lower probability of accessing credit compared to men, keeping all other variables constant. Although this result is not statistically significant, the observed trend supports the hypothesis that gender-related barriers exist in access to financing. These barriers may be associated with factors such as gender discrimination, lack of business networks, and financial institutions' risk perception regarding women-led businesses.

Sector: The odds ratios for the productive sector (0.4653 for men and 0.4962 for women) suggest that microenterprises operating in sectors such as commerce and services have lower probabilities of accessing financing. This finding may be linked to the dynamic and fluctuating nature of these sectors, which financial institutions might perceive as higher risk.

Table 2

Odds Ratios by Gender

Variable	Male (OR)	Female (OR)	P>z (Male)	P>z (Female)
Sector	0.4653	0.4962	0.118	0.156
Gender	1.1005	0.7700	0.791	0.471
Age	0.9816	0.9822	0.172	0.188
Education Level	0.8296	0.8388	0.001	0.001
Expenditure	0.9977	0.9976	0.000	0.000
Employees	0.9554	0.9554	0.157	0.153
Profitability	1.0001	1.0001	0.000	0.000
Experience	0.9998	0.9998	0.724	0.705
Salary Productivity	1.0001	1.0001	0.844	0.866
Income Productivity	1.0026	1.0026	0.000	0.000

Source: Prepared by the authors.

Marginal Effects by Gender

To provide a more direct interpretation of how changes in the variables impact the probability of accessing financing, marginal effects were calculated. These effects allow for the analysis of how variations in each variable influence the probability of obtaining credit for both men and women. Table 3 presents the estimated marginal effects for the variables assessed in the model, along with their significance levels.

Table 3

Marginal Effects by Gender

Variable	Male (dy/dx)	Female (dy/dx)	P>z (Male)	P>z (Female)
Sector	-0.0364	-0.0344	0.130	0.157
Gender	0.0056	-0.0154	0.793	0.495
Age	-0.0011	-0.0011	0.256	0.266
Education Level	-0.0111	-0.0106	0.064	0.063
Expenditure	-0.0001	-0.0001	0.031	0.030
Employees	-0.0027	-0.0027	0.261	0.256

Variable	Male (dy/dx)	Female (dy/dx)	P>z (Male)	P>z (Female)
Profitability	8.84e-06	8.88e-06	0.001	0.000
Experience	-9.30e-06	-1.01e-05	0.724	0.705
Salary Productivity	6.32e-06	5.50e-06	0.848	0.869
Income Productivity	0.0002	0.0002	0.033	0.032

Source: Prepared by the authors.

The marginal effects provide an estimate of how a one-unit change in a variable affects the probability of accessing financing while keeping the other variables in the model constant. The main findings are presented below:

Education Level: For both genders, an increase in education reduces the probability of accessing financing by approximately 1.1% per additional year of education ($p < 0.1$). This result aligns with the previously presented odds ratios, suggesting that more educated microentrepreneurs may turn to alternative financing sources outside formal financial institutions. This negative effect highlights the need to explore how education levels influence financing decisions and whether specific risk perceptions are associated with higher education.

Expenditure: The marginal effects of expenditure are negative for both genders (-0.0001), indicating that an increase in operational costs slightly reduces the probability of obtaining financing. Though small, this effect is statistically significant ($p < 0.05$), suggesting that financial institutions may perceive microenterprises with higher expenditures as less solvent or riskier. The negative relationship between expenditure and financing access underscores the importance of efficient financial management to improve credit access.

Profitability: Profitability shows a small but positive marginal effect for both genders (8.84e-06 for men and 8.88e-06 for women), with strong statistical significance ($p < 0.01$). This suggests that an increase in business profitability slightly increases the probability of obtaining financing. The positive relationship between profit and credit access indicates that financial institutions view profitability as a key indicator of a microenterprise's ability to meet credit obligations.

Income Productivity: Income-based productivity has a positive and significant marginal effect (0.0002, $p < 0.05$) for both genders, indicating that higher productivity improves credit access. This finding reinforces the idea that productivity is a crucial factor in financial institutions' credit decision-making processes.

Gender: The marginal effect for gender shows a slight positive impact for men (0.0056) and an insignificant negative impact for women (-0.0154). Although these effects are not statistically significant, they suggest that gender may influence risk perception and credit decisions by financial institutions. The lack of significance could be due to additional factors affecting credit evaluation, highlighting that gender disparities in financing access require further investigation.

Conclusions

This research is significant because it provides empirical evidence on how gender disparities affect access to financing in a specific context such as the Morona Canton, a region with unique social and economic characteristics. The results not only confirm the existence of structural and cultural barriers faced by women micro-entrepreneurs but also offer valuable insights for the design of more equitable and inclusive public policies. Additionally, this analysis contributes to future research by opening lines of study focused on interventions to evaluate policies that reduce these inequalities, promoting financing models better adapted to the needs of women in rural areas.

This study has demonstrated that access to financing for microenterprises in Morona Canton is significantly influenced by various socioeconomic and business variables, with a particular focus on the gender of the entrepreneur. The econometric analysis, through a Logit model, revealed that women face greater barriers to obtaining financing compared to men. The odds ratio of 0.77 indicates that women are 23% less likely to access credit, even when controlling for other variables such as education, productivity, and sector. The marginal effects reinforce this conclusion, showing a 1.54% decrease in the probability of accessing financing for women. On the other hand, although the effect for men is positive, it was not statistically significant, highlighting the presence of gender disparities in the credit context of microenterprises.

The results of this study are consistent with previous research that has documented the barriers women face in accessing financing. Auguste y Galetto (2020) point out that women micro-entrepreneurs often encounter more restrictions when applying for credit, even when their business characteristics are comparable to those of men. This observation aligns with the findings of this study, where a negative odds ratio for the female gender indicates a significantly lower probability of women accessing financing in Morona Canton.

The theory of information asymmetry provides a useful framework for understanding these inequalities. According to Woolcott y Ramírez (2024), microenterprises led by women face stricter requirements from financial institutions due to a perception of higher risk. This bias not only affects women's credit opportunities but also limits their ability to compete on equal terms with men in the business environment. Financial institutions, lacking complete information on borrowers' repayment capacity and relying on gender stereotypes, may exacerbate these disparities.

Furthermore, the study by Pailhé (2023) reinforces the importance of gender bias in credit evaluation. Stereotypes associating women with lower business capability negatively impact lenders' decisions, restricting access to credit for women entrepreneurs. This result implies that gender barriers to financing access have not only an economic basis but also a sociocultural one, suggesting the need for a comprehensive approach that addresses both perceptions and practices in financial institutions.

The findings of this study also align with the recommendations of Clausen y Trivelli (2021), who propose implementing public policies that promote women's financial inclusion and the development of support networks. Such policies should be designed to reduce the structural barriers faced by women micro-entrepreneurs, fostering a more inclusive and equitable financial environment. In this regard, the present study underscores the urgency of institutional and political interventions in Morona Canton that contribute to the creation of financing programs tailored to the needs of women entrepreneurs.

Finally, the results of this study indicate that gender is a determining factor in access to financing for microenterprises in Morona Canton. Women, despite their entrepreneurial efforts, face a more restrictive credit environment, limiting their capacity for growth and economic development. To address these disparities, it is essential to design inclusive public policies that consider not only access to financing but also the creation of support networks, financial training, and mechanisms to reduce gender stereotypes in credit evaluation. By implementing a multidimensional approach, financial equity could be promoted, contributing to the sustainable development of women-led microenterprises in Morona Canton and similar contexts.

Academic Limitations

Although this study provides valuable insights into gender barriers in access to financing for microenterprises in Morona Canton, it presents some academic limitations that should be considered when interpreting the results.

First, the research approach was quantitative and based on a Logit model with data collected through surveys. This design limits the depth of qualitative analysis regarding gender perceptions and the lived experiences of women entrepreneurs when applying for financing. Future research could incorporate qualitative methods, such as interviews or focus groups, to gain a more comprehensive understanding of the social and cultural dynamics that affect financial institutions' credit decisions.

Second, the study used a non-probabilistic convenience sampling method due to limitations in data availability and resources. This may restrict the generalizability of the results to all microenterprises in Morona Canton and, by extension, to other regions. The specific characteristics of the studied sectors could influence the relationship between gender and access to financing, making it advisable to conduct comparative studies in different rural and urban areas to verify the applicability of the findings in a broader context.

Another limitation is the use of independent variables that, while relevant, do not capture all the complexities associated with the financing process. Variables such as the influence of social and business networks, lenders' perception of women's credit risk, and gender stereotypes could provide a more complete picture of the problem. Including these variables in future studies could help clarify the underlying mechanisms that generate the observed inequalities.

Finally, this study was conducted at a specific point in time with a cross-sectional approach, preventing the observation of variations over time in financing access conditions.

Longitudinal research could provide information on the evolution of gender barriers over time, especially as new public policies are implemented or economic changes impact financing opportunities for women-led microenterprises.

Despite these limitations, this study constitutes a significant contribution to the knowledge of gender inequalities in access to financing and lays the groundwork for future research that explores this issue from broader and more diverse perspectives.

Ethical considerations

The present research was carried out respecting fundamental ethical principles, guaranteeing the dignity, autonomy and privacy of the participants. We worked with data obtained from surveys applied to populations that did not represent any risk to life, the environment or human rights. Likewise, measures were taken to protect the confidentiality of the information and the safeguarding of the data, in compliance with current regulations on research ethics. Since the study did not involve direct interventions on people, animals, biological agents or sensitive data, it did not require the endorsement of an Ethics or Bioethics Committee.

Conflict of interest

All authors made significant contributions to the document and declare that there is no conflict of interest related to this article.

Declaration of authors' contribution

Rodolfo Moisés Espinosa Tigre: Conceptualization, Research, Writing - original draft, Acquisition of funds.

Elías Alvarado Lagunas: Validation, Data curation, Formal analysis, Supervision.

Juan Bautista Solís Muñoz: Methodology, Writing - revision and editing, Validation.

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