Born Unequal: Overcome Barriers and Traits of Female Entrepreneurs

Nacidas desiguales: superación de barreras y características de las mujeres emprendedoras

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Abstract

Female entrepreneurship has not been sufficiently studied. This article uses a Mexican survey to provide evidence for the rate of women-owned businesses, factors that promote female entrepreneurship, and intergenerational mobility as a metric of success. It was found that women-owned enterprises are successful in generating upward mobility, despite facing greater obstacles than male-owned businesses. Therefore, more studies with adequate representation of women are required. Finally, to advance toward parity in entrepreneurship, it is necessary to recognize women entrepreneurs as capable leaders, visionary employers, and provide them with unrestricted support within their social circles.

Keywords: Social mobility, social environment, self-employed, resilience, subjective wellbeing.

Resumen

Los emprendimientos de mujeres no han sido suficientemente estudiados. Este artículo usa una encuesta mexicana para documentar la tasa de negocios de mujeres, factores que promueven el emprendimiento y la movilidad intergeneracional como indicador de éxito. Se encontró que las empresas de mujeres son exitosas en generar movilidad ascendente, a pesar de enfrentar mayores obstáculos que los negocios de hombres. Por ello, se requieren más estudios con suficiente representación de mujeres. Finalmente, para avanzar hacia la paridad de emprendimientos es necesario reconocer a las mujeres empresarias como líderes capaces, empleadoras visionarias y brindarles un apoyo irrestricto en sus círculos sociales.

Palabras clave: Movilidad social, ambiente social, trabajador independiente, Resiliencia, bienestar subjetivo.

JEL Classification/ Clasificación JEL: J16, L26, E24, E71.

They say, she's gone too far this time
T. Swift

1. Introduction

In recent decades, research on women entrepreneurs has grown significantly. Women now make up about one-third of all entrepreneurs globally (Cardella et al., 2020). However, there is still a pressing need to explore the challenges faced by women entrepreneurs, especially in developing countries. Studies indicate that entrepreneurship can be particularly tough for women in these regions due to various external factors that are often beyond their control (Panda, 2018).

For economies to be dynamic and innovative, the continuous emergence of new firms is required. This can be partially achieved by closing the gender gap in entrepreneurship (OECD, 2019). Moreover, evidence suggests that greater economic participation of women positively impacts resilience in the face of crises (Meuner et al., 2017).

To encourage more entrepreneurship among women, we need to recognize the importance of understanding gender differences (Brindley, 2015). A single measure of success is insufficient because industries and cultural conditions vary widely. Research on women entrepreneurs shows that, besides financial success, they also value autonomy, personal growth, and recognition (Cabrera and Mauricio, 2017; Poggesi, 2016).

Innovation is another domain where scholars must contribute more to correct the perception that women-owned businesses are low-performing enterprises (Dabić et al., 2023). A more equitable assessment should cover a greater diversity of sectors and firm sizes, as well as integrate the different forms in which innovations occur. Notable, in industries dominated by women, technological innovation is less frequent, compared to organizational, environmental, or social innovations (Dabić et al., 2023).

To contribute to a broader and more substantiated discussion on women entrepreneurs, this paper conducted a quantitative analysis using an official nationally representative survey for Mexico. According to Fareed et al. (2017) note that Mexico has a larger share of women entrepreneurs compared to OECD countries, making it an interesting place to study the driving factors behind their businesses. The survey, conducted in 2021 to study subjective well-being, includes a chapter on the working conditions of men and women,

distinguishing between those who are self-employed and those who are employers. The number of observations is very high (n = 20,870; 35% women) and constitutes a robust sample that surpasses the studies reported in the literature (fewer than 5,000 individuals, see Discussion). Additionally, a variety of items were available that are not typically analyzed in quantitative research on women entrepreneurs.

Our purpose is to provide new evidence on female entrepreneurship in the context of a Latin American country and developing countries in general. The goal of this paper is to empirically evaluate the traits and factors that increase the likelihood of women becoming self-employed entrepreneurs or employers, comparing them to women employees, and identifying the adverse factors that prevent more entrepreneurship among females. To accomplish this, we estimated a multinomial logit model, and for comparative purposes, we also report results for the group of male entrepreneurs. We aimed to answer two research questions: What differences do female entrepreneurs have in comparison to women employees? What are the adverse factors that prevent more entrepreneurship among females?

The findings of this research highlight that female entrepreneurs face greater obstacles than men when trying to establish their businesses and improve their socioeconomic status. Women are more likely to be self-employed than men entrepreneurs. Some of the obstacles they face include lower levels of education, younger age, higher anxiety and stress, and limited intergenerational mobility. Studies show that these barriers contribute to women being more likely to be self-employed rather than entrepreneurs. While the evidence shows that women entrepreneurs encounter more challenges, it is important to recognize that they may have the same potential for entrepreneurship as men. To increase the low percentage of female entrepreneurs in Mexico and around the world, we need to reduce barriers, provide equal opportunities, and give equal recognition to both men and women as entrepreneurs and creators of wealth.

The results were reported using the predicted values from the multinomial logit estimation. Six distinct traits or factors affecting the probability of being an entrepreneur were analyzed separately. The probability was reported for different age groups when feasible. The discussion of the results was guided by statistically significant differences. Our paper contributes to the literature by utilizing intergenerational mobility of entrepreneurs as a performance metric.

The analysis is limited by the cross-sectional design of the data, which precludes a more in-depth exploration of causal mechanisms. Furthermore, financial data of firms, their industrial affiliations, and the year of their founding were not available. These data would have enabled a more comprehensive understanding of the success and contributions of female entrepreneurs. The structure of the remainder of the document is as follows: The next section reviews the literature related to female entrepreneurship, resilience, and innovation. The third section explains the method used to obtain the data and

the type of estimation employed. Subsequently, the final two sections report the results and present the conclusions.

2. LITERATURE REVIEW

This literature review focuses on three interrelated domains: female entrepreneurship, resilience, and innovation. First, it explores the unique characteristics and challenges faced by female entrepreneurs, highlighting differences compared to their male counterparts and disparities in the motivations driving their entrepreneurial endeavors. Next, it examines how personal and organizational resilience influences women's ability to adapt and overcome obstacles in their entrepreneurial journey. Finally, it analyzes the relationship between entrepreneurship and innovation, and how gender differences and social and economic barriers impact women's capacity to innovate in their businesses. Together, these three areas provide a comprehensive understanding of the factors influencing female entrepreneurship and underscore the importance of resilience and innovation in overcoming entrepreneurial challenges.

2.1. FEMALE ENTREPRENEURSHIP

Unlike their male counterparts, women who show high levels of commitment and responsibility receive some recognition. However, they face significant challenges in balancing family responsibilities with their entrepreneurial activities. Research has shown that the entrepreneurship of self-employed workers is determined by prior entrepreneurial spirit, which was influenced by having a father who was an entrepreneur and not necessarily by the individual's initial wealth or educational level (Velez Grajales and Velez Grajales, 2014). Research also shows women have different motivations for starting businesses. Some women identify market opportunities and aim for profit, while others focus on addressing unmet social needs (Solesvik et al., 2019)

In low-income countries, there tends to be a lower percentage of formal entrepreneurial activity among women, according to the Entrepreneurship Database -business registries and national statistical agencies- (Meunier et al., 2017). For women, self-employment is often linked to negative factors such as poor health or occupational disability. Additionally, certain socio-economic traits are common among women in self-employment, including being childless or divorced and having a high level of education (Roche, 2014).

Women are less likely to move from individual entrepreneurship to hiring employees. If they do hire, it usually happens within the first three years of starting their business. After this three-year mark, only a small percentage of businesses go on to hire their first employee (Fairlie and Miranda, 2017).

In high-income countries, conditions tend to become more equitable. Whether due to heightened awareness or legal mandates, there are reduced asymmetries, decreased discrimination, and comparable access to financing.

Consequently, only marginal differences persist between men and women regarding their propensity for autonomy or risk-taking behavior (Solesvik et al., 2018; Poggesi et al., 2016).

Ideally, there should be no additional barriers to entrepreneurship. In practice, it is documented that women encounter greater obstacles in securing sufficient resources to start a business. Even with high managerial acumen that favors them as entrepreneurs, they may face resistance from family members when seeking financial support. Consequently, rather than embarking on a family business venture, they may be compelled to pursue entrepreneurship independently (Welsh et al., 2017).

A woman's age also reveals whether she will become an entrepreneur. Female entrepreneurs aged 40 or older exhibit greater resilience, possess better tools to navigate challenging environments, encounter fewer difficulties in obtaining financing compared to their younger counterparts, and if they do not have young children, they may face fewer challenges in balancing family and work life (Welsh et al., 2018).

Discrimination is a negative experience encountered in many social situations (Shepherd et al., 2020), including those against women in the business world (Shafique et al., 2019). Stereotypes about masculine traits lead to significant discrimination and stress for women in high-level management roles (Ayala and Manzano, 2014; Gatrell and Cooper, 2007). As businesses grow, women's professional roles often clash with their traditional social roles. To handle these conflicts and remain committed to their entrepreneurial roles, women rely on optimism, self-efficacy, and resilience (Hundera et al., 2019).

2.2. Resilience and entrepreneurship

Resilience manifests as the ability to transform and adapt in the face of adversity (Korber and McNaughton, 2017). Particularly within the entrepreneurial context, resilience is linked to characteristics such as optimism, strength, and self-efficacy (Poggesi et al., 2016; Shepherd et al., 2020). Resilient individuals understand that failures are part of the complexity of the world and that confronting and overcoming them is implicit in the path of learning (Shafique et al, 2019). Thus, resilient individuals begin to fortify themselves as failure becomes a familiar terrain (Monllor and Murphy, 2017; Block and Block, 1980; Brodsky et al., 2011).

Resilience is a determining factor in the decision to become an entrepreneur (Korber and McNaughton, 2017). Given the close link between personal resilience and organizational resilience, resilient individuals positively contribute to their ventures (van der Vegt et al., 2015; Branicki et al., 2018; Bullough and Renko, 2013). For instance, owners and managers demonstrate personal balance in adverse external conditions (Hadjielias et al., 2022). Furthermore, drawing on their resourcefulness, optimism, and self-esteem, resilient entrepreneurs achieve higher business performance (Ayala and

Manzano, 2014) and foster resilience through leadership, enhancing their organizations' adaptability (Jaskiewicz et al., 2015; Hadjielias et al., 2022).

Resilience fosters adaptability in adverse circumstances by creating awareness of what is happening, enabling reflection on what needs to be done, and acknowledging the activities required for survival (Shafique et al., 2019; Sabatino, 2016). A series of steps have been described to promote adaptability (Brodsky et al., 2011); we will only highlight step four, where the entrepreneur uses conflict as a motivator, namely: appreciating and acknowledging resources, as well as reframing conflicts and stressors to use them as a driving force (p. 227-228).

In difficult situations, such as those caused by a natural disaster, resilient entrepreneurs manage to set aside their fear of failure, allowing them to focus on thriving (Monllor and Murphy, 2017). A notable example of resilience in leadership was seen during the COVID-19 crisis. By staying optimistic about the future, leaders fostered communication and provided support, which helped businesses make the necessary changes for survival (Hadjielias et al., 2022). Even in the face of ongoing challenges, optimism can shine through. For instance, Palestinian refugees in Lebanon have used proactive problem-solving and entrepreneurial activities to seek integration, achieve self-sufficiency, and boost their morale (Shepherd et al., 2020).

Resilience can create serial entrepreneurs. Those who have faced situations in which they became resilient, know the path as entrepreneurs, can start over, and give rise to new entrepreneurial ventures. When starting over in more familiar territory, their performance is greater than those starting for the first time (Dabić et al., 2023). In the long run, this translates into an improvement in the quality of life for entrepreneurs. In the United States, and using cross-sectional data, Qian (2020) found a relationship between entrepreneurship and upward intergenerational mobility. Entrepreneurs in Sweden with legally constituted enterprises experience greater upward mobility compared to wage earners, while those without legally constituted enterprises face downward mobility (Lindquist and Vladasel, 2023).

2.3. Entrepreneurship and innovation

In the Schumpeterian tradition, the innovative role of entrepreneurs is highlighted because of their willingness to take risks and their ability to create value (Autio et al., 2014). As a result, entrepreneurial activity plays a key role in economic growth, innovation, and job creation. Especially during times of crisis, the skills of innovative organizations can be crucial for survival. They help identify market opportunities, create new products or services, and provide fresh insights into existing offerings (Lopez Muñoz et al., 2023). This article defines entrepreneurs as individuals who identify themselves as self-employed or employers (Kato-Vidal and Martínez, 2019). However, it is important to note that other forms of entrepreneurship may also exist within organizations (Davidsson, 2004).

In a sample of 16 high-income countries, the gender of the entrepreneur was not a determining characteristic of innovation; the lack of statistical significance was justified by the presence of contextual conditions (Lopez Muñoz et al., 2023). Another possible explanation is the low number of female observations in the GEM data, which reduced the power of the tests and did not allow the true effect size to be detected. In regions marked by discrimination, female-owned businesses often face greater deficiencies in resources compared to male-owned enterprises, which consequently affect their innovation standards (Mari, 2024; López Muñoz et al., 2023). Among these gender biases are disparities in educational attainment and access to financing (Castellaneta et al., 2020; Hundera et al., 2019; Welsh et al., 2017; Ahuja, 2000), as well as disparities in business networks (Lopez Muñoz et al., 2023; Ahuja, 2000).

The link between entrepreneurship and innovation may not be so conclusive and may not be seen directly. For this reason, women could be considered less innovative (Dabić et al., 2023). To determine whether there is more innovation in firms owned by men or women, various criteria must be considered. Among these, the method used to measure innovation is crucial. In most studies, the indicator employed is either product innovation or investment in Research and Development (R&D). Both metrics could be distorted when making inter-industry comparisons, an aspect that needs to be carefully addressed given that a significant proportion of women participate in economic activities within the service sector (Mari, 2024). Moreover, some argue that innovation might actually be greater in firms owned by women (Jensen, 2014). The argument posits that judgments based on stereotypes trigger performance that surpasses the standard.

3. Method

The goal was to study the personal traits that promote entrepreneurial activity among men and women. We conducted a literature review to identify the barriers faced by women seeking to engage in entrepreneurial endeavors.

3.1. Model specification

To estimate the probability of belonging to a class of worker (entrepreneurs and employers), which depends on certain characteristics, the logit model specified in equation 1 is employed.

$$Class\ of\ worker_i = \alpha_i + Gender_i\gamma + w_i\beta_j + x_i\delta_j + (Gender_i \times w_i)\beta_j + (Gender_i \times x_i)\delta_i + \varepsilon_i \tag{1}$$

Three outcomes are possible: $Class\ of\ worker_i = 0$ if the individual i is a subordinate employee $Class\ of\ worker_i = 1$ if the individual is an employer and $Class\ of\ worker_i = 2$ if the individual is self-employed.

$Gender$, our variable of interest, was used to address the research question regarding the differences between female entrepreneurs and female

employees. The results reveal the estimated probability of a woman being an employer or self-employed worker, compared to an employee.

$Gender$ is male or female, w_i denotes a set of sociodemographic variables (Age_i, Edu_i, $Married_i$, $State_i$) and β_j denotes the parameters of the estimation. Age_i is equal to 1 when the individual i is less than 20 years old, 2 when is 20-30 years old, 3 when is 30-40, 4 when is 40-50, 5 when is 50-60, and 6 when they are 60 or over. $Edu_i = 0$, is equal to zero if the individual is uneducated, is equal to 1 if the individual has medium education and is equal to 2 if the individual has higher education, $Married_i = 1$ when the individual is married, $State_i$ is the state of residence.

X_i denotes a set of control variables (Exp_i, Soc_i, $Disc_i$, Anx_i IGM) and δ_j denotes the parameters. These binary control variables were constructed as described in Table 2. $Exp_i = 1$ if the individual evaluates that in five years, they will be between steps 8-10, $Soc_i = 1$, if the individual frequently has social group meetings. $Disc_i = 1$ if the individual has been discriminated against. $Anx_i = 1$, if the individual has anxiety or worry more than half of the day. $IGM = 1$ if there is intergenerational mobility. Finally, $Gender_i \times w_i$ and $Gender_i \times x_i$ are sets of interactions between the gender variable and independent variables.

In addition, from the interaction of $Gender$, with the socio-demographic and control variables, we can identify the adverse factors that prevent more entrepreneurship among females.

According to Cameron and Trivedi (2022) results are interpreted using relative risk ratios (RRR). Relative risk ratios are the relative probability of the possible outcomes $Class\ of\ worker_{ij}$ compared to the baseline group. As in the equations 2 and 3, the base category is employee $(Class\ of\ worker = 0)$

$$\frac{Pr(Class\ of\ worker = employer\ or\ entrepreneur)}{Pr(Class\ of\ worker = employee)} = e^{(w_i\beta_j)} \quad (2)$$

$$\frac{Pr(Class\ of\ worker = Self-employed)}{Pr(Class\ of\ worker = employee)} = e^{(w_i\beta_j)} \quad (3)$$

In the estimates where $Class\ of\ worker = employer$ or $entrepreneur$, a relative risk equal to 1 means that the relative probability of being an employer is the same as that of being an employee. A relative risk (RRR) equal to 1.5 means that the relative probability of being an employer is 0.5 times greater than being an employee or that the probability of being an employer increases by 50%. Finally, a relative risk of 0.5 means that the probability of being an employer is reduced to 0.5 times compared to being an employee.

The estimation does not include an income variable, as the survey did not collect this information. During the article review process, it was noted that omitting income could impact the estimated coefficients, and we appreciate this observation. To address this, two income proxies were used: (a) We used the questionnaire question "In your opinion, what would be a sufficient income to cover all the needs of your household for one month?" and (b) *Locality Size*,

which consists of four strata. The first proxy, the Income-Sufficient variable's coefficient, did not influence the likelihood of being an entrepreneur (RRR ≈ 1), and the coefficients of the other variables remained relatively unchanged. For *Locality Size*, it was found that outside large cities (populations under 100,000), the probability of being an entrepreneur increases, likely due to fewer job opportunities in medium or small cities. These results are not reported in the present paper.

3.2. Data

Our analysis was based on microdata from the Mexican Survey of Self-Reported Well-being (ENBIARE, for its initials in Spanish) collected by the National Statistical and Geography Institute (INEGI, 2021). The survey measures all positive or negative evaluations that people make of their lives and the affective reactions of people to their experiences. In accordance with OECD Guidelines on Measuring Subjective Well-being, the survey contains information on different dimensions of well-being measurement: a) Subjective well-being, b) Trust and support networks, c) Time use in activities and networks, d) Health, e) Job, f) Events, g) Social and community participation, h) Biography, and i) Intergenerational mobility. The ENBIARE survey complements the Global Entrepreneurship Monitor (https://www.gemconsortium.org/data). Although ENBIARE is not specialized in entrepreneurship, it has national representativeness and a high percentage of women surveyed.

The survey was conducted in 2021 among 31,166 individuals (men and women) aged 18 years or over who are literate in Spanish. Our sample was reduced when it was determined that 10,296 respondents were unemployed. The final sample consisted of 1,423 employers, 5,899 self-employed workers, and 13,548 subordinate employees. The literature review established that age, educational attainment, and marital status affect entrepreneurship. Other factors are:

·   *Optimism*: Entrepreneurs are ingenious and optimistic, exhibiting a prevalent sense of optimism. The survey is based on the Cantril ladder measure, where 0 represents the worst possible life, and 10 represents the best possible life, capturing a measure of prosperity and optimism. Respondents classified as thriving are those who evaluate their future state as 8 or higher (OECD, 2013).
·   *Resilience,* is defined as the ability to overcome adversity, and discrimination could be considered an adverse situation.
·   *Social circle*: Entrepreneurs have entrepreneurial connections. The survey captures those individuals who frequently connect with people in their environment, whether family members or not, and
·   *Risk and responsibility,* can be proxied by anxiety and stress.
     The dimensions utilized in the survey are presented in Table 1.

Table 1. Operationalization of key-concepts

Variable	Question	Description
Sex	Sex	1 Female 0 Male
Age	Age	1 Less than 20 years old, 2 for 20-30 years old, 3 for 30-40, 4 for 40-50, 5 for 50-60, and 6 for 60 or over
Marital status	Marital status	1 married or living with a partner, 0 singled, widowed, divorced or separated
Educat	Highest approved level	0 Basic Education (preschool, primary and secondary school), 1 Normal school (teacher college), high school or technical career in high school 2 Bachelor's, Graduate certificate ('especialidad'), master's or doctorate
State	State of Mexico	Codes 1 to 32
Expectations (*Optimism*)	As your best guess, overall, how satisfied do you expect to feel with your life in 5 years' time?	1 evaluate their future state as 8, 9 or 10, 0 otherwise.
Anxiety and Stress	Overall, how anxious, worried, or stressed did you feel yesterday? During the past two weeks, how often have you felt bothered by not being able to stop worrying or control your worry?	1 very anxious or have experienced more than half of the days with worry discomfort (if scales 8-10) 0 otherwise.
Social	How often do you have social gatherings with... neighbors, classmates, people from your church, coworkers, teammates?	1 very frequently or frequently 0 otherwise.
Class of worker	Do you have a job or own a business? Do you have employees?	0 subordinate employee, 1 self-employed 2 employer-entrepreneur
Discrimination	Have you ever had any experience where you feel you were treated differently because of your skin tone, your gender, age, sexual preference, religious beliefs, language or accent, weight, disability, ethnic origin?	1 Yes. 0 otherwise.
Inter-generational mobility	Have your opportunities to increase wealth been...	1 greater than that of your parents? 0 otherwise.

Note. The response variable in the model was Class of worker. The predictor variables are difficult to classify under Traits or Barriers; in some cases, a variable might be categorized as either, depending on the perspective taken. We define Traits as personal characteristics or demographic factors that may influence an individual's approach to starting and managing a business (variables: sex, age, marital status, expectations-optimism). We consider Barriers to entrepreneurship to be factors or conditions that hinder individuals from starting or sustaining a business (variables: anxiety and stress, social networking, discrimination, and intergenerational mobility). Finally, State was treated as a contextual variable, given that in regions with strong business ecosystems, entrepreneurs benefit from a more supportive environment.
Source: Data INEGI-ENBIARE, 2021.

4. Results

Table 2 shows the descriptive statistics for the selected variables at the national level, categorized by worker type: employer, self-employed worker, and employee. The age variable indicates that male employers are generally

older than female employers. In our sample, female employers have an average age of 43 years, with ages ranging from 19 to 81. In contrast, men can be employers at older ages.

Additionally, women tend to be less sociable, more optimistic, and face greater stress and discrimination compared to male employers. It is also noted that self-employed individuals are generally less sociable, less optimistic about the future, and experience less discrimination than employers. The last column of the table shows that these differences between men and women are statistically significant.

As shown in Table 2, the sample includes both men and women across three occupational categories, encompassing a range of situations to mitigate selection bias. Our methodology did not employ a matching approach; however, the data in Table 2 demonstrate balance in most predictor variables, except for the finding that female entrepreneurs tend to be older, married, and report experiencing social mobility relative to their parents. The mean differences between groups for these three variables are less than one standard deviation, suggesting that the imbalance might not be a significant issue.

TABLE 2. DESCRIPTIVE STATISTICS BY SEX AND CLASS OF WORKER

Gender	Males		Females				
Variable	Mean	SD	Mean	SD	Min	Max	Test *p*-value
a) Employer							
Age	44.8293	14.6905	--	--	18	94	0.005
	--	--	43.1607	12.7299	19	81	
Educat	0.9104	0.8677	0.9601	0.8588	0	2	0.992
Married	0.7617	0.4261	0.6257	0.4839	0	1	<0.001
Expect	0.6527	0.4760	0.7808	0.4137	0	1	<0.001
Discrim	0.2829	0.4504	0.3180	0.4657	0	1	0.124
Social	0.4592	0.4983	0.3841	0.4864	0	1	<0.001
Anxiety	0.2248	0.4175	0.3605	0.4801	0	1	<0.001
InterG Mob.	0.5100	0.4999	0.5241	0.4994	0	1	0.612
b) Self-employed							
Age	46.4538	15.6103	--	--	18	96	<0.001
	--	--	42.3084	14.1171	18	91	
Educat	0.5808	0.7824	0.5824	0.7675	0	2	<0.001
Married	0.7171	0.4504	0.6185	0.4857	0	1	<0.001
Expect	0.5871	0.4923	0.6783	0.4671	0	1	<0.001
Discrim	0.2260	0.4182	0.3030	0.4596	0	1	<0.001
Social	0.3572	0.4792	0.2434	0.4291	0	1	<0.001
Anxiety	0.2503	0.4332	0.3320	0.4709	0	1	<0.001
InterG Mob.	0.4254	0.4944	0.4201	0.4936	0	1	0.921
c) Subordinate employee							
Age	37.3139	13.2217	36.8199	11.9053	18	87	0.126
Educat	0.7907	0.8261	0.9379	0.8539	0	2	<0.001
Married	0.6204	0.4853	0.4744	0.4993	0	1	<0.001

Gender	Males		Females				
Variable	Mean	SD	Mean	SD	Min	Max	Test *p*-value
Expect	0.6994	0.4585	0.7472	0.4345	0	1	< 0.001
Discrim	0.2243	0.4171	0.3230	0.4676	0	1	< 0.001
Social	0.4114	0.4921	0.3253	0.4685	0	1	< 0.001
Anxiety	0.2293	0.4204	0.3297	0.4701	0	1	< 0.001
InterG Mob.	0.4019	0.4903	0.3752	0.4842	0	1	< 0.001

The final four variables (Discrim, Social, Anxiety, InterG Mob.) are considered Barriers. See the footnote in Table 1 for further details. Authors' calculations. Employer: Males, N = 2,658,882 (71.1%) Females: N = 1 077 881. (28.9%) Self-employed: Males N = 8,143,439 (51.14%), Females: N = 7,781,440 (49.86%). Employees: Males N = 21,700,000 (58.81%), Females: N = 15,200,000 (41.2%).

The estimation results are presented in Table 3. Column 1 shows the relative risks of being an employer, and Column 2 shows the relative risks of being a self-employed worker, with both probabilities interpreted relative to the base category: subordinate employee. The results for the variable of interest, gender, indicate that women have lower probabilities of being employers (RRR = 0.72) compared to subordinate employees.

Age becomes a relevant factor that, primarily at age 40 or older, triples the probability of being an employer compared to being a subordinate employee (RRR = 3.60). For being self-employed with respect to being a subordinate employee, it doubles after 50 years (2.26). *Higher education* increases the probabilities of being an employer relative to being an employee (1.57), while higher education reduces the probabilities of being self-employed relative to being an employee (0.56). *Marriage* and *social connections* increase the probabilities of being an employer relative to being a subordinate employee (1.41 and 1.39). *Discrimination* appears to be a determining factor that increases the probability of being an employer and self-employed worker relative to being a subordinate employee (1.54 and 1.19, respectively).

From the interactions of Gender, with *expectations* and *discrimination*, we can identify the characteristics that reduce or increase the probability of a woman of being an employer relative to being an employee and the probabilities of being self-employed relative to being an employee.

Women with low expectations or without *optimism* about the future (who evaluate their future state as 7 or less) have a lower probability of being self-employed [RRR = 0.62], and *non-discriminated* women have a higher probability of being employers (1.5). Specifically, the Relative Risk Ratio of 0.62 indicates that these women are 38% less likely (= 1 − 0.62) to be self-employed compared to being employees. Next, the results of the probabilities of being an employer and self-employed worker are analyzed when interacting with the control variables presented in Figure 1.

Based on the research objective, significant factors that increase the likelihood of women becoming entrepreneurs or self-employed, compared

to being employees, were analyzed. Figures 1, 2, and 3 present the results and illustrate the probability of women being employers and self-employed workers.

4.1. Entrepreneur traits and barriers

This section shows the results of the probabilities of women being entrepreneurs with respect to the traits and barriers in Figure 1: age, discrimination, and social groups. The estimates show that there is a higher probability of being an employer at an older age if one is resilient or participates in social groups. Both men and women have a higher probability of becoming entrepreneurs at an older age. However, at any age, women are more likely to be self-employed workers than employers.

Table 3. Multinomial logit regression results: relative risk ratios

Variables	Employer RRR		Self-employed RRR	
Female (Male = base)	0.722		1.569	**
	(0.187)		(0.245)	
Age (Less than 20 = base)				
20-30	1.679		1.096	
	(0.702)		(0.167)	
30-39	2.805	*	1.351	
	(1.151)		(0.210)	
40-49	3.602	**	1.672	**
	(1.480)		(0.259)	
50-59	4.476	**	2.261	**
	(1.843)		(0.357)	
60 and over	11.124	**	6.676	**
	(4.681)		(1.109)	
Edu (Lower education = base)				
Medium education	1.330	**	0.804	**
	(0.140)		(0.051)	
Higher education	1.571	**	0.569	**
	(0.156)		(0.038)	
Married (Single = base)	1.425	**	1.094	
	(0.164)		(0.084)	
Expectations (Future state 8-10 = base)	0.945		0.891	
	(0.102)		(0.064)	
Discrimination (Discriminated against = base)	1.542	**	1.191	*
	(0.172)		(0.093)	
Social group (Very frequent social gatherings = base)	1.398	**	0.932	
	(0.140)		(0.065)	
Anxiety & stress (very anxious = base)	0.949		1.055	
	(0.107)		(0.082)	
	1.238	*	0.907	

Variables	Employer RRR		Self-employed RRR	
InterGenerational Mobility (IGM)	(0.124)		(0.062)	
Single x Female	0.848		0.635	**
	(0.167)		(0.067)	
Low expectation x Female	0.626	*	0.803	*
	(0.131)		(0.086)	
No discrimination x Female	1.542	*	1.111	
	(0.304)		(0.123)	
No social group x Female	1.065		1.234	*
	(0.206)		(0.130)	
No anxiety x Female	0.765		1.095	
	(0.151)		(0.120)	
No IGM x Female	0.864		0.929	
	(0.159)		(0.093)	
Intercept	0.014	**	0.157	**
	(0.006)		(0.031)	
State effects	Yes		Yes	
Number of observations	20863			
Log pseudolikelihood	-42347528			
Pseudo R2	0.0811			
Prob > chi2	0.0000			

Note. ** $p<.01$, * $p<.05$. Robust standard errors in parenthesis. Base Category: Subordinate employee.

There was one variable (discrimination) for which we could not estimate the respective effect on women. In the survey, there are not enough cases of female employers who reported having been discriminated against ($n = 140$). This limited number of cases prevents conducting representative statistical tests for women. Our alternative approach was to report the effect of discrimination without differentiating between men and women (Figure 1b). By pooling a larger number of cases, it was possible to detect that individuals (men and women) with one or more episodes of discrimination have a higher probability of being employers. Additionally, *social life* increases the likelihood of becoming an employer for both men and women, but male employers benefit more from their social networks. For self-employed men and women, a common characteristic is low social activity (Figure c.2).

These results from Figure 1 show that: a) Older men face fewer obstacles to becoming employers, while women still encounter barriers (Figure a.1); b) Discrimination fosters resilience in both employers and self-employed workers (Figures b.1 and b.2); and c) Women who want to be employers often have limited social lives and may lack credibility as successful entrepreneurs compared to men within their social circles (Figure c.1).

4.2. Business outcomes

Figure 2 illustrates the probability of women being entrepreneur and self-employed, compared to employee, while considering the influence of other relevant characteristics identified in the literature as education, expectations, *anxiety and stress*, and intergenerational mobility. For women and men, higher educational attainment and higher risk (and anxiety-stress) are associated with a greater probability of being an employer and a lower probability of being a self-employed worker.

We found that if a woman exhibits traits of optimism and high educational attainment, the probability of being an employer increases by four percentage points (Figure 2a).

When it comes to success, evidence shows that the current generation of male and female employers is innovating and achieving higher living standards than their parents (intergenerational mobility). Being an employer typically leads to significantly higher income compared to self-employment or being an employee. Additionally, their socioeconomic status may be better than that of their parents.

Given the uncertainty of businesses and financial risks, *anxiety* and *stress* tend to be present in all entrepreneurs. However, for women, additional pressures arise from social roles, gender biases, and family commitments. The evidence from Figure 2b shows a spike in anxiety and stress in female employers around the age of 50, indicating a significant barrier. We did not detect any such spike in men (Figure 3b).

In Figure 2c, we see that those who report having more opportunities and fewer barriers than their parents to acquire assets (indicating intergenerational mobility) are also more likely to become employers compared to those who do not feel they have experienced intergenerational mobility.

Figure 1. Traits and Barriers: Probabilities of being employer entrepreneur and self-employed
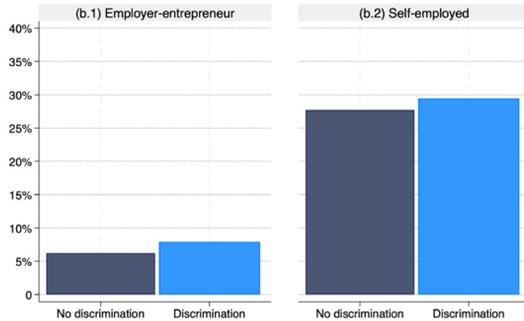

a) Women less likely to be employers (Percentage by age group)
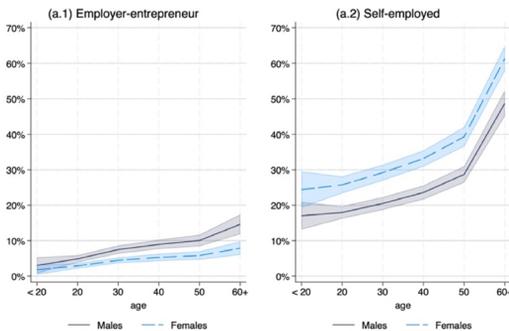
Note. The Chi-Square analysis showed a significant association between gender and age by class of worker. For employers $\chi2(5)$ = 43.51, p=0.000 For Self-employed $\chi2(5)$ = 71.31, p=0.000, n=20 873.
Source: Authors' calculation with data from INEGI-ENBIARE, 2021.

b) Resilient people are more likely to be employers (Male and Female)

Note. The Chi-Square analysis showed a significant association between discrimination and no discrimination, employers: $\chi2(2) = 2.86$, $p=0.0911$ self-employed $\chi2(2) = 7.41$, $p=0.006$. Discrimination effect increases the probability of being an employer, $n=20\ 863$. Source: Authors' calculation with data from INEGI-ENBIARE, 2021.

c) Social groups would give men credibility and enhance their role as employers
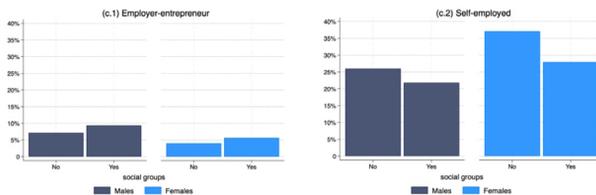
Note. The Chi-Square analysis showed a significant association between social connections and gender. For female employers $\chi2(1) = 4.38$, $p=0.000$ and male employers $\chi2(1) = 12.66$, $p=0.000$ and. For female self-employed $\chi2(1) = 15.14$, $p=0.000$ and male self-employed $\chi2(1) = 2.83$, $p=0.092$. Social circles increase men's likelihood of becoming employers, $n=20\ 863$. No statistics are reported for self-employment. Source: Authors' calculation with data from INEGI-ENBIARE, 2021.

FIGURE 2. BUSINESS OUTCOMES: PROBABILITIES OF BEING EMPLOYER ENTREPRENEUR AND SELF-EMPLOYED

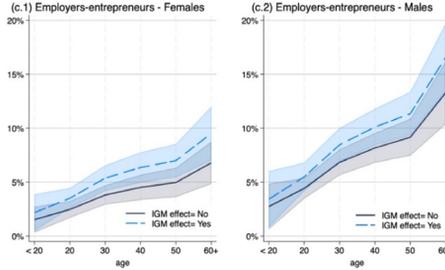## a) Female employers with greater education and future positive evaluation
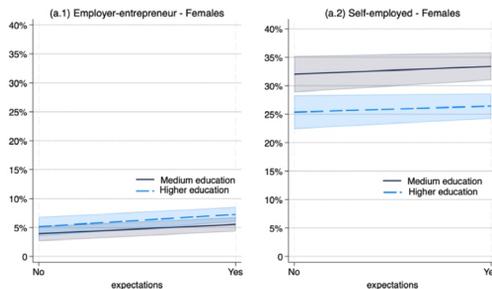
Note. The Chi-Square analysis showed a significant association between expectative and education level for female employers $\chi2(2) = 5.38$, $p=0.06$. Female self-employed is not reported because no significant differences were found, $n=20\ 873$. A higher educational level accompanied by an optimistic perspective increases the probability of being a female employer. Source: Authors' calculation with data from INEGI-ENBIARE, 2021.

b) Female employers report higher levels of anxiety and stress
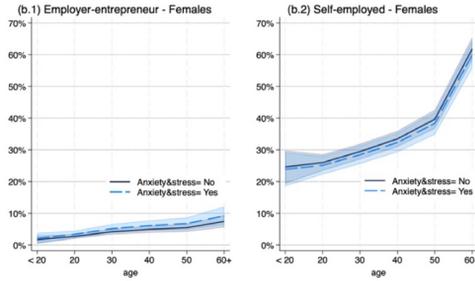
Note. The Chi-Square analysis showed a significant association between yes-no anxiety and stress and gender across all ages. For female employers $\chi2(5)$ = 36.71, p=0.000 and for female self-employed yes-no anxiety and stress $\chi2(5)$ = 353.76, p=0.000, n=20 863. Female employers are more likely to experience anxiety and stress. Source: Authors' calculation with data from INEGI-ENBIARE, 2021.
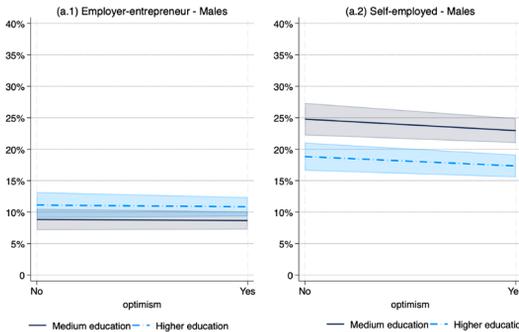
c) Being an employer fosters intergenerational mobility (IGM)

The Chi-Square analysis showed a significant association between I.G. and gender across all ages. For female employers $\chi2(5)$ = 6.06, p=0.013. For male employers $\chi2(5)$ = 6.01, p=0.014, n=20 863. Female employers are more likely to report intergenerational mobility. Only employers are reported, self-employment is not reported because no significant differences were found. Source: Authors' calculation with data from INEGI-ENBIARE, 2021.
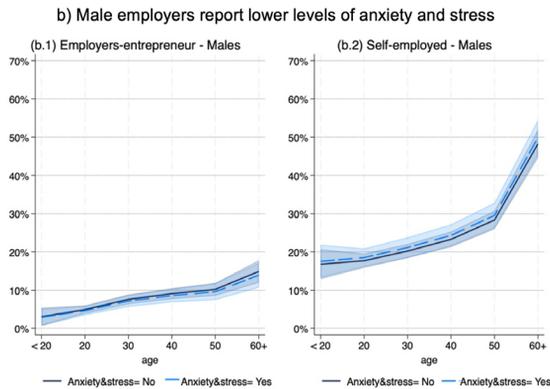
FIGURE 3. PROBABILITIES OF BEING MALE EMPLOYER AND SELF-EMPLOYED

a) Male employers with greater education and future positive evaluation

Note. The Chi-Square analyses showed for males employer and self-employed are not reported because no significant differences wee found. Source: Own Autors' calculations using data from INEGI-ENBIARE, 2021.

b) Male employers report lower levels of anxiety and stress

Note. The Chi-Square analysis showed a significant association between yes-no anxiety and stress and gender across all ages. For male employers $X^2(5) = 71.92$, $p=0.000$ and for males self-employed yes-no anxiety and stress $X^2(5) = 236.44$, $p=0.000$ (two-tails test), $n = 20\,863$. Males self-employed are more likely to experience anxiety and stress. Source: Authors' calculations using data from INEGI-ENBIARE, 2021.

5. Discussion and conclusions

This paper aimed to analyze the personal traits that promote entrepreneurial activity among women and men. To achieve this, a national survey from Mexico was utilized, containing self-reported information from employers, self-employed individuals, and employees. The literature suggests that there are differences when comparing entrepreneurial endeavors between men and women, such as the support they receive from their social circles or the credibility they project as entrepreneurs (Panda, 2018). Consequently, it is acknowledged that most women entrepreneurs start their businesses in a disadvantageous situation.

When assessing the performance of businesses owned by women, research often reports lower performance outcomes. This finding emerges when using traditional financial indicators (Cabrera and Mauricio, 2017; Poggesi et al., 2016). Similarly, studies comparing innovation levels in women-owned businesses suggest that broad comparisons are necessary and that is important to prioritize the industries where the representation of women-owned businesses is most prevalent, as well as their strategic priorities, which may be socially or financially driven (Dabić et al, 2023). The data were collected from a cross-sectional survey, which impedes the capacity to analyze respondents' career trajectories. Nevertheless, the results may hold validity beyond the sample, given the availability of over 20 000 questionnaires and national representativeness, which allows for more robust estimates that minimize biases and better reflect the diversity among both entrepreneurs and employees. Additionally, we observed that the variables in the model were significant and that the coefficients remained consistent across various specifications. This evidence suggests that relevant factors were included in

the decision to become an entrepreneur, potentially reducing selection bias to some extent.

We found a higher probability of being a female employer when the respondents reported having intergenerational mobility relative to their parents. This finding aligns with Qian (2020), who demonstrates that entrepreneurs can improve their standard of living in the long run. Our results show that the relationship between being an employer and having intergenerational mobility is more favorable for men than for women. When analyzing self-employed female entrepreneurs, we did not find a statistical difference between those who reported having intergenerational mobility and those who did not. This would imply that women aspiring to improve their socioeconomic status may struggle to achieve it as self-employed individuals; the evidence suggests that it is women with businesses that create jobs who report being in a better position than their parents' generation.

The available information reveals that few women succeed in becoming entrepreneurs and employers. An underexplored explanatory factor is the age of the female entrepreneur (Welsh et al., 2018). Data from Mexico shows that women aged 40 and above has an increased probability of becoming owners of their own businesses. This is likely because, at that stage of life, household responsibilities may have decreased, and sufficient work experience may have been attained.

The sample used in the survey shows few cases of women employers who reported having been discriminated against at some point in their lives. We believe there is an underreporting of cases of business-owning women who have faced discrimination. The most frequent causes of discrimination reported by employers are skin color, age, gender, and political ideology. The resilience hypothesis helps explain the apparent paradox that a negative event, such as discrimination, can result in a positive outcome, such as becoming an entrepreneur (van der Vegt et al., 2015; Branicki et al., 2018; Bullough and Renko, 2013).

The conventional view is that women participate more widely in social circles with groups of coworkers, sports, etc. In our analysis, we found that it is not women but men who report simultaneously having social activity with friends or acquaintances and also being entrepreneurs. We believe that a lack of credibility towards women results in a lack of confidence in their abilities as entrepreneurs. Another possible explanation is that women have less time available, which reduces their participation in social circles (Hundera et al., 2019).

In our exploration of factors that increase the probability of women becoming entrepreneurs, we integrated two strands that remain separate in the literature. On the one hand, it is known that education encourages entrepreneurial activity among women (Roche, 2014). On the other hand, it has also been documented that an optimistic attitude is linked with entrepreneurship (Ayala and Manzano, 2014; Hadjielias et al, 2022; Hundera et al., 2019). We analyzed the intersection to determine what happens when

women have higher education and simultaneously possess confidence and optimism. We found that this group of women has a higher probability of becoming entrepreneurs. This effect is exclusive to women. In men, greater optimism does not translate into a positive statistical effect that increases the probability of being an entrepreneur.

Women in business also differ from men in how they handle financial risk (Brindley, 2005). The data showed that women business owners with employees reported higher levels of anxiety and stress, which were not observed in male employers. This finding emphasizes that women entrepreneurs face greater demands than men. Our findings are generally consistent with existing literature. They indicate that social networks, resilience, and intergenerational mobility are key factors distinguishing between being employers or self-employed, as opposed to being employees, and also compared to men.

Furthermore, since women are still predominantly self-employed, our contribution identifies the adverse factors that prevent them from becoming employers. These factors include young age, lower educational levels, high levels of anxiety that increase with age, and lack of intergenerational mobility. These barriers are significant for women aspiring to become employers. Additionally, we tested the explanatory power of two further indicators: (i) intergenerational mobility, which assesses the success of women's entrepreneurial ventures, and (ii) the resilience hypothesis, which highlights a history of discrimination among many who eventually became entrepreneurs.

Another contribution was providing evidence for a Latin American country using a sample with thousands of individuals (n = 20,870; 35% women). In our review of the literature, we detected analyses with small samples in Spain (n = 534; 34.5% women [Ayala and Manzano, 2014]) and Morocco (n = 116; 28% women [Welsh et al., 2018]). In some cases, there were large samples in Asia (n = 1 039; 41% women [Jensen, 2014]) and in industrialized countries (n = 4 430; 35% women [Lopez Muñoz et al., 2023]).

We encountered data limitations in conducting the study. The survey did not collect financial information about the businesses, so the analysis was primarily constructed on qualitative aspects (yes/no). Additionally, we also lacked information about the entrepreneurs' experience or trajectory. We believe this limitation is partially mitigated by reporting the results using age groups.

Our findings highlight specific barriers that hinder true equality between male and female entrepreneurs. Given these barriers, it is important to increase the visibility and recognition of women who have successfully become entrepreneurs. The next step is to identify what types of policies could help reduce these obstacles. Possible interventions include creating mentorship programs tailored for young female entrepreneurs, where experienced businesswomen provide guidance and inspiration to those starting out. Another policy to reduce barriers for women could involve strengthening women's business networks, enabling them to benefit from these social groups similarly to male entrepreneurs. Future research might adopt new methodologies suited

to the unique characteristics of women-owned businesses, such as conducting in-depth analyses of microcredit programs for young female entrepreneurs, comparing different age groups and incorporating regional economic indicators (e.g., economic specialization, unemployment).

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