

A photograph of two women, one with curly hair and one with straight hair, both smiling and looking at a document held by the woman with straight hair. The image is overlaid with a green and blue gradient and diagonal line patterns.

Four case studies on
**women in
business
in Central
America**

Women in Business and Management:

Four case studies on

women in business in Central America



ACT/EMP
The Bureau for Employers' Activities

December 2019

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Preface

Women as business owners play a critical role from an economic and social standpoint. They generate new business opportunities, create employment, contribute to income and re-invest in their families and communities. Worldwide, women are starting businesses at a faster rate than men, significantly contributing to economic growth.

Yet compared to men, women running their own businesses tend to predominate among micro and small businesses in the informal economy in many countries. The businesses women own are smaller than those of men and they tend to operate in smaller-scale industries that are less profitable, thus, women are concentrated in low-profitability or low-growth sectors. Moreover, with the exception of family businesses, it is generally known that women have fewer opportunities and less access to financial credit and information to start and expand businesses in economic sectors dominated by men.

The economic case for advancing women and achieving gender equality in business is not new. If women, who account for half the world's working population, are able to fully and freely participate in economic activity as business owners, the global economy would be set for growth. The International Labour Organization (ILO) Bureau for Employers' Activities (ACT/EMP) has been working with employer and business membership organizations (EBMOs) to raise awareness on the tangible business and economic benefits of gender diversity and inclusion. Specifically, five years ago, we decided to take a closer look at the benefits of gender diversity in business and management through a global process of collecting data on how enterprises in ILO member States are benefiting from this opportunity.

The first of these efforts resulted in the 2015 publication of the global report, *Women in Business and Management: Gaining momentum*. Since then, region-specific information and data have been gathered and published in five reports for Asia and the Pacific, the Caribbean, Eastern Europe and Central Asia, the Middle East and North Africa and Latin America and the Caribbean.

Building on this series of publications, we are pleased to present this paper which includes four in-depth case studies from Central America to demonstrate various factors that influence women's decision-making related to owning a business. The studies show that improving economic opportunities for business women not only benefits them and their families, but also their national

economies and labour markets. Women have demonstrated their abilities in business and have made progress in their education levels, yet there is still much to be done by governments, EBMOs and women's organizations to create a level playing field for women in business. In particular, women in business would benefit from mainstream business support services that are more gender responsive.

This paper supplements the global report on *Women in Business and Management: The business case for change*. We would like to acknowledge the authors of this paper: Jose Luis Viveros Añorve, who led the drafting and analysis, and Jae-Hee Chang, who managed the coordination and drafting from ILO-ACT/EMP. We also extend our appreciation to Randall Arias, Senior Employers' Specialist from ILO-San Jose who reviewed the report.

We hope that this paper provides thought-provoking insights to the work of the ILO in the Americas region to promote gender equality and assists with developing further research that enables our constituents and stakeholders to advance policy-making. We also hope the findings of this paper complement the activities conducted under the ongoing ILO regional project, *Win:Win: Gender equality means good business*.

Finally, as we work towards the attainment of the Sustainable Development Goals, especially Goal 5 on advancing gender equality and women's empowerment, we encourage all businesses and their representative organizations, governments and other stakeholders to take a proactive and considered approach to achieving this goal.

Deborah France-Massin



Director

Bureau for Employers' Activities
International Labour Office

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Abbreviations and acronyms

ACT/EMP	Bureau for Employers' Activities
EBMO	employer and business membership organizations
ENOE	National Occupation and Employment Survey (Mexico)
GDP	gross domestic product
ILO	International Labour Organization
OECD	Organisation for Economic Co-operation and Development

Overview of the case studies

Globally, women have increased their economic activity as entrepreneurs and business owners, as employers and own-account workers. The International Classification of Status in Employment defines “employers” as workers who hold self-employment jobs, in which remuneration is directly dependent upon the profits derived from the goods and services produced, and in this capacity, have engaged one or more employees. “Own-account workers” also hold self-employment jobs, but they have not engaged any employees to work for them.

Data from the International Labour Organization (ILO) show that the share of women worldwide among all employers has increased from 17.3 per cent in 1991 to more than 22 per cent in 2018. In particular, steady growth in women-owned businesses has taken place in Latin America and the Caribbean (from 13.9 per cent in 1991 to 24.5 per cent in 2018), North America (from 26.5 per cent in 1991 to 33.7 per cent in 2018) and Asia and the Pacific (from 15.4 per cent in 1991 to 20.2 per cent in 2018).¹

Behind these global and regional statistics, there is considerable variation between countries as well as between regions, with women in some countries representing a small percentage of those engaged in business activity while in others, women run nearly half of all businesses.

In this paper, we present four case studies on women in business in Central America for Costa Rica, El Salvador, Mexico (Chihuahua) and Panama. The case studies examine various features of businesses run by women in relation to profitability as compared to those run by men. We assess the potential of certain conditions to contribute to the success of women entrepreneurs and employers, and we also identify challenges faced by women due to gender bias in society that is mirrored in the world of business.

The data presented in the case studies reflect the global trend of women increasingly running more businesses, not only micro and small enterprises, but also medium and large enterprises. On average, women are 22.3 per cent of business owners in Costa Rica, 29 per cent of employers in El Salvador, 15.3 per cent of business owners in Chihuahua, Mexico, and 22.4 per cent of employers in Panama.

We find that women are often driven to start up their own business due to economic necessity that could be caused by poverty, the lack of career prospects in existing companies, or the lack of paid employment in the labour market. Women’s success as business owners and employers can be influenced by the size of their enterprise, the economic sectors in which they operate, education and professional experience.

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¹ ILO: *Women in business and management: The business case for change* (Geneva, 2019).

Enterprise size. Growing a business can be more of a challenge for women than men. The El Salvador study shows that the largest profit gaps between men and women employers are observed in medium-sized enterprises, with women making just 16.2 per cent of what men make. Furthermore, among all female employers, those who run large enterprises generate the lowest profits.

Gender differences across sectors. Women and men business owners are often concentrated in certain economic sectors in most economies and this varies across countries. In El Salvador, our study shows that men make more profits than women in all sectors with the exception of construction and electricity, gas and water supply. In the electricity, gas and water supply sector, women employers not only do better; they do significantly better. The mining sector, by contrast, has no women employers, and it remains a relatively lucrative sector for men.

Education helps advance women in business. We find that there are various gender differences in relation to education and profitability. While in El Salvador the level of education of men and women is similar, in Costa Rica, Panama and Chihuahua women have more years of education than men. Nevertheless, in all four countries, the average levels of profit from their businesses were less than men's. For example, in Panama the average monthly profits for men own-account workers and employers are higher than for women by more than 78 per cent and 40 per cent, respectively. However, in Costa Rica, our case study shows that women benefit more than men from education, with each additional year of education being associated with an average increase of nearly 6 per cent in their hourly profits. The importance of the enabling business environment, one that is free from discrimination and violence, comes out in our case study for Chihuahua, where we see that women are less likely to be entrepreneurs despite having higher levels of education.

Professional experience counts too. The case study on Costa Rica demonstrates that the more experience women acquire running a business, the more successful they become. It shows that while new and relatively young enterprises (from start-ups through nine years of operation) are more profitable when they are run by men, this is not true of mature enterprises. When mature enterprises are managed by women, who have on average more years of education than men, enterprises are as profitable or even significantly more profitable.

Conclusion. The case studies stress the importance of various factors that influence women's decision-making about running a business and demonstrate the need to have comprehensive policies to foster women's entrepreneurship based on opportunities for business success rather than as a basic survival strategy. The studies also show that improving economic opportunities for women in business not only benefits them and their families, but also their national economies and labour markets.

01 | Costa Rica

How education positively impacts women employers





The economy in Costa Rica has been stable over the past two decades. Income per capita grew at an average annual rate of 4.5 per cent during the period 2000–13, above the average rate of the Latin America region (3.8 per cent). Despite its successful economic expansion, persistent inequality and the potential of a fiscal crisis due to the country's deepening public debt may jeopardize its sustainable development.¹ Within this context, this case study assesses how education impacts women business owners. We analyse microdata from 2010 to 2016² to examine the correlation between hourly profits and years of schooling, estimate the returns on education and calculate the predicted probability of women being business owners given their level of education.

Enterprises are mainly owned by men in Costa Rica. As shown in table 1, among business owners, women and men account for 22.3 and 77.7 per cent, respectively. Women and men business owners have, on average, 11.2 and 9.7 years of education, respectively. In other words, women employers have 1.5 more years of schooling than men. However, women make lower hourly profits than men, which can be partially explained by the fewer hours of work and years of professional experience they have. Enterprises run by women have fewer employees (3.3) than enterprises managed by men (3.5). Moreover, enterprises managed by men have been in operation 4.1 more years on average. Regardless of the owner's sex, more than 42 per cent of enterprises operate in the informal economy.

Table 1. Characteristics of enterprises and business owners in Costa Rica, average 2010–16

Variables	Women	Men
Share of total business owners (percentage)	22.3	77.7
Share of informal businesses (percentage)*	42.7	42.2
Individual level		
Years of education	11.2	9.7
Years of professional experience	26.6	29.8
Age	43.8	45.5
Median working hours (weekly)	48	55
Average real hourly profits (US dollars)	6.4	7.0
Enterprise level		
Number of workers	3.3	3.5
Enterprise age	8.7	12.8

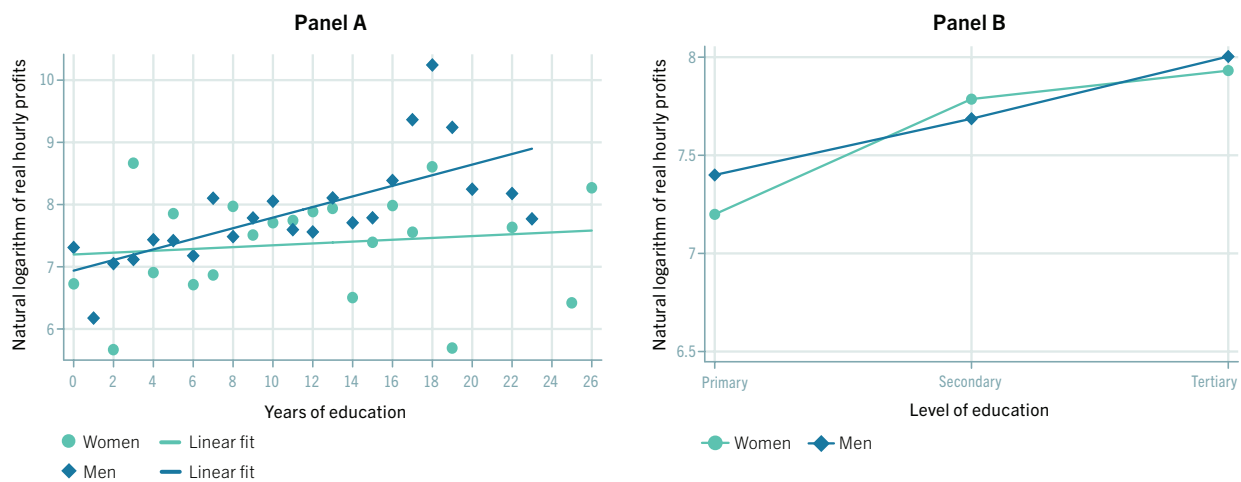
*The rate of informal employers is measured as the share of employers who are not registered in the Costa Rican Social Security Institute.

¹ S. Araújo and S. Guichard: *Costa Rica: Restoring fiscal sustainability and setting the basis for a more growth-friendly and inclusive fiscal policy*, Economics Department Working Papers No. 1484 (Organisation for Economic Co-operation and Development (OECD), 2 July 2018); and World Bank: *Costa Rica - Country partnership framework for the period FY2016–20 (English)* (Washington, D.C., World Bank Group, 2015).

² Microdata were collected from the Continuous Employment Survey (ECE) of Costa Rica's National Institute of Statistics and Census. The empirical strategy consisted in the construction of a database of the third quarters of all available years (2010–16). Due to the rotating structure of the ECE, the use of observations that are derived only from the third rounds of surveys each year ensures that individuals appear only once in our constructed sample. Since we focus on people in the labour market, we restricted the sample to 38,133 employees and 13,288 independent workers (business owners and own-account workers) aged 25–65 who are not studying.

Women employers who make higher profits tend to have more years of education. The data show that the years of schooling have a strong positive correlation with hourly profits for women and men business owners. Interestingly, we find that an additional year of education is associated with a larger percentage change in profits for women employers than for men (see figure 1, panel A). Such a correlation is also evident when profits are analysed by level of education. Regardless of sex, the higher the education level, the larger the hourly profits made by business owners. Primary education is associated with lower profits for women than for men, however, secondary education shows larger returns for women than for men. Tertiary education results in higher profits for women and men, but the effects are greater for men.

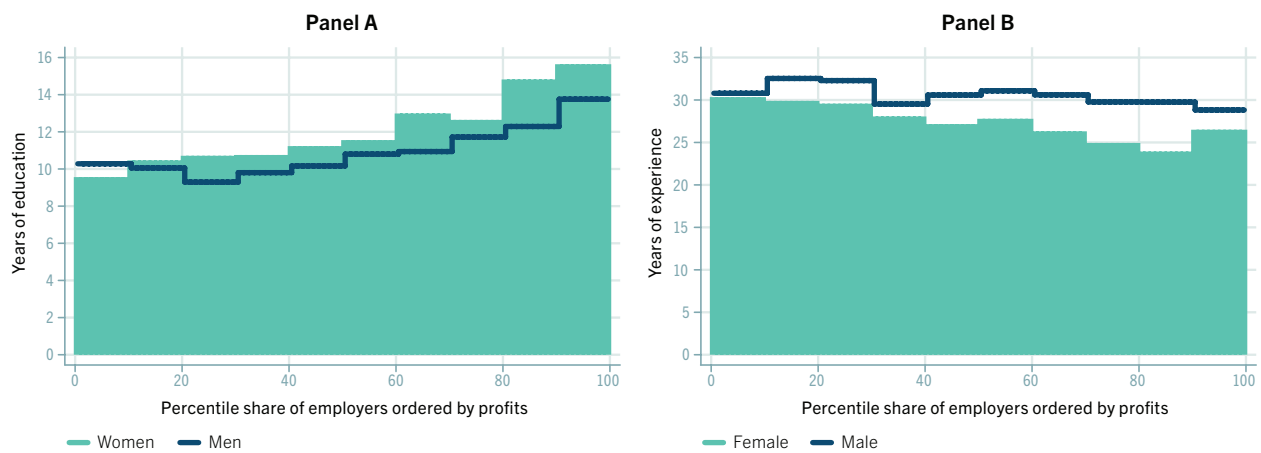
Figure 1. Employers' median hourly profits in Costa Rica, 2010–16: (A) by years of education; and (B) by education level



At the top 10 per cent earnings level (90–100 percentile), women business owners have nearly two more years of education than men (see figure 2, panel A). Among all employers, women in the middle of the profit distribution have one more year of schooling than men, whereas women at the bottom of the profit distribution have less education than men (difference of 0.7 years). In general, the results show that the higher the profits, the more education women have compared to men.

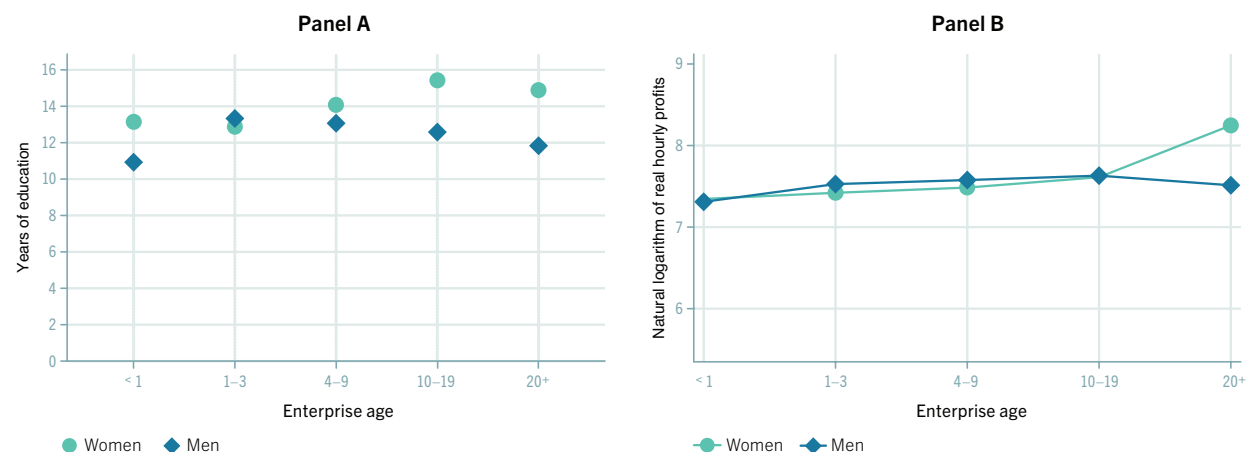
The data on years of professional experience reveal that women employers have fewer years of professional experience as the earning level increases (see figure 2, panel B). For instance, women employers with lowest profits have on average 3.8 more years of professional experience than women employers with highest profits, and 0.5 fewer years of professional experience than men employers with lowest profits.

Figure 2. Distribution of employers' average total profits in Costa Rica, 2010–16: (A) by years of education; and (B) by years of professional experience



We also find that women with more years of education are more likely than men to lead mature enterprises than younger businesses. Our results reveal that among leaders of start-ups (less than 1 year of operation) and mature enterprises (those with 10 or more years of operation) women have more years of education than men (see figure 3, panel A). Moreover, enterprises with 19 years of operation that are managed by men are marginally more profitable than those managed by women. Mature enterprises managed by women are shown to be as profitable, for enterprises with 10-19 years of operation, or significantly more profitable, for enterprises with more than 20 years of operation (see figure 3, panel B). Enterprises managed by women with more than 20 years of operation are about 10 per cent more profitable than those run by men.

Figure 3. Average enterprise age in Costa Rican, 2010–16: (A) by employers' years of education; and (B) by hourly profits



Returns on education are larger for women while professional experience counts more for men. Our assessment shows that each additional year of education is associated with an average increase of 5.9 per cent in hourly profits for women employers (see Annex, table A1). For self-employed women, our findings suggest an even larger return on education of 6.6 per cent compared to a 3.1 per cent return for self-employed men.

In contrast, professional experience has greater returns for men: each additional year of professional experience is associated with an increase of about 4.6 per cent in hourly profits for self-employed men, compared to 2.1 and 1.7 per cent for self-employed women and women employers, respectively.

Our findings suggest that women employers – who on average have more years of education – have the ability to capitalize on education to a greater degree than men, which could be associated with several factors including the type of education and up-skilling. As education is positively correlated with improved management practices, it is plausible that Costa Rican women employers with tertiary education are more likely to be familiar with modern management practices,³ which are associated with significant improvements in productivity and profitability.⁴

Women with tertiary education are more likely to be employers as opposed to wage workers. Our assessment shows that employers with tertiary education are 6.9 per cent more likely to be women (as opposed to men). In contrast, secondary education and years of professional experience appear to have, albeit marginal, the opposite effect⁵ (see Annex, table A2). Moreover, the higher the education level, the greater the effect of education on the probability of women to be employers as opposed to wage workers. Among women, those with secondary and tertiary education are 0.6 and 2.7 per cent, respectively, more likely to be employers compared to women with only primary education. By contrast, years of professional experience have a marginal effect close to zero. Each additional year of professional experience is associated with a 0.1 percentage point increase in the likelihood of women to be employers (as opposed to wage workers). As shown in figure 2, we have seen that women employers with more years of professional experience make the lowest level of profits and have fewer years of education than men. Hence, education stands out as a variable with larger effects than years of professional experience on women's probability to be employers.

Overall our findings from this case study show that improved quality, coverage and access to education, as well as the uptake of new and relevant skills would enhance the likelihood for women to be successful employers.

³ N. Bloom et al.: "Management practices across firms and countries". *Academy of Management Perspectives* (2012, Vol. 26, No. 1), pp. 12–33.

⁴ N. Bloom et al.: "Why do firms in developing countries have low productivity?". *American Economic Review* (2010, Vol. 100, No. 2), pp. 619–623.

⁵ Each additional year of professional experience lowers employers' probability of being women by 0.3 percentage points, while the effect of secondary education on the employers' likelihood to be women is not statistically different from zero.

02 | El Salvador

The variation in profits between women and men employers





El Salvador has experienced depressed economic growth over the years with its real gross domestic product (GDP) growth among the lowest in Latin America and the Caribbean, and among structurally-comparable countries. GDP growth averaged 2.6 per cent between 2010 and 2016.

Poverty reduction has consequentially been modest; the poverty rate dropped from 39 per cent in 2007 to 31 per cent in 2016 and the extreme poverty rate also declined from 15 per cent to 10 per cent over the same period.¹ Examining a period of ten years (2008–17), this case study focuses on El Salvadorian employers and assesses how their profits vary according to their sex, economic activity and enterprise size.²

Among employers, men are more profitable than women. Men represent 70.8 per cent of employers in El Salvador (see table 2). While there is only a marginal difference in years of schooling between women (6.7) and men (6.9),³ men make US\$235 more real profits per month than women. The profit differential can partially be explained by the difference in average working hours per week, where men work 32.2 hours and women work 25.6 hours. In addition, male employers tend to hire more personnel. On average, men have 3.7 employees while women have 2.4 employees. Notably, employers in El Salvador are overwhelmingly in the informal economy regardless of their gender.⁴

Table 2. Characteristics of enterprises and employers in El Salvador, average 2008–17

Variables	Women	Men
Share of total employers (percentage)	29.2	70.8
Share of informal enterprises (percentage)	80.8	84.3
Individual level		
Years of education	6.7	6.9
Average monthly real profits (US dollars)	505.3	740.1
Average weekly working hours	25.6	32.2
Enterprise level		
Average number of employees	2.4	3.7

¹ World Bank: *Progress Report on the Country Partnership Strategy for the period FY2016-FY2019*. Report No. 95185-SV. Available at: <http://documents.worldbank.org/curated/en/942061467986289288/pdf/95185-CAS-R2015-0105-IFCR2015-0161-MIGAR2015-0039-Box391454B-OUO-9.pdf> [27 Apr. 2019].

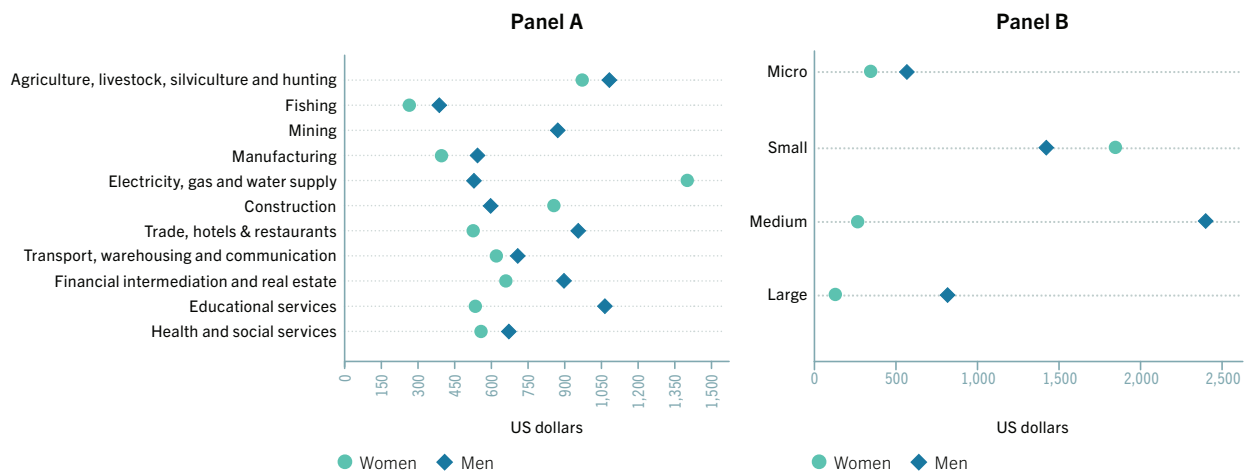
² The analysis used microdata from the Continuous and Multiple Purpose Household Survey, 2008–17

³ In comparison to Panama and Costa Rica, women employers in El Salvador have 5.15 and 4.5 fewer years of education and men employers have 4.05 and 2.8 fewer years of education (see case studies on Panama and Costa Rica).

⁴ The rate of informal employers is measured as the share of employers who are not registered in the El Salvadorian Social Security Institute.

The difference in profits between men and women employers in different economic activities is notable. We find that men make more profits than women in all sectors with the exception of construction and electricity, gas and water supply. Interestingly, in the electricity, gas and water supply sector, women employers not only do better, they do significantly better: the profit gap is the largest between women and men among all sectors (see figure 4, panel A). The mining sector, by contrast, has no women employers, and it remains a relatively lucrative sector for men.

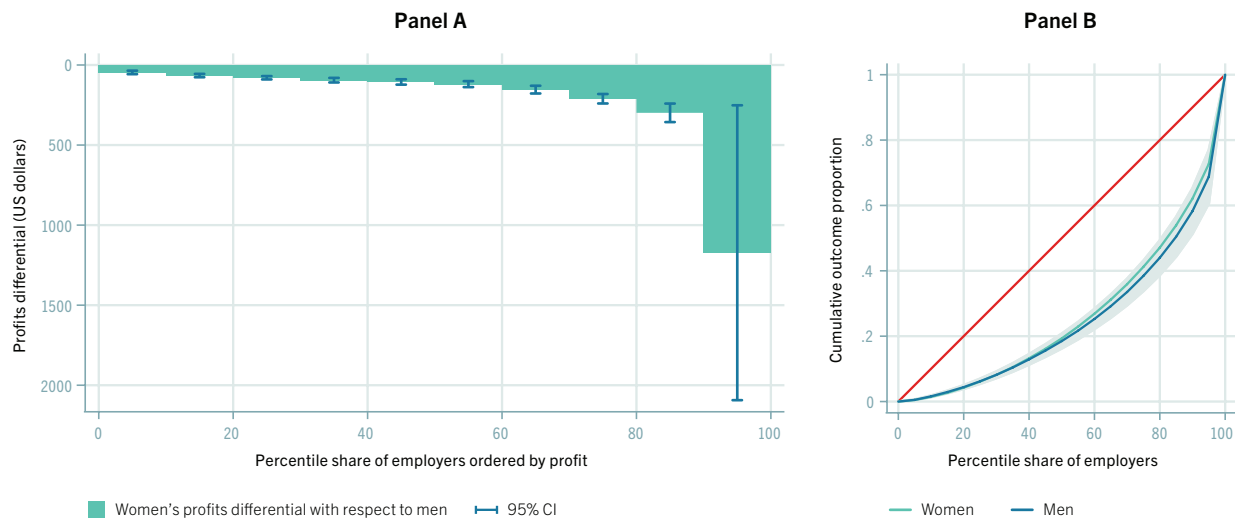
Figure 4. Employers' average monthly real profits in El Salvador, 2008–17: (A) by economic activity; and (B) by enterprise size



Across enterprise size, we see that male employers are overall more profitable with the exception of small enterprises, where women on average make US\$420 more per month, or approximately 26.7 per cent more than men's profits from small enterprises (see figure 4, panel B). The largest profits gaps between men and women employers are observed in medium-sized enterprises where the differential is equivalent to US\$2,134 per month. This means that women employers make 16.2 per cent of what men make. It is also worth noting that, among all female employers, those who run large enterprises generate the lowest profits (below US\$300 a month).

But the profit disparity is wider among men employers. We further estimate the average profit differentials between women and men employers by profit percentile groups. A negative difference means that women tend to earn, on average, lower monthly profits than men, and we see that the difference is greater at the higher end of the profit distribution. For instance, women in the top 10 per cent of the distribution (90–100 percentile) make, on average, US\$1,173 less than men, whereas women in the bottom 10 per cent make US\$46 less (see figure 5, panel A). Using the Lorenz curves, we further find that there is greater disparity in profits earned among men employers than female employers (see figure 5, panel B).

Figure 5. Average profit differential in El Salvador by employers' sex, 2008–17: (A) by profit percentile; and (B) Lorenz curves



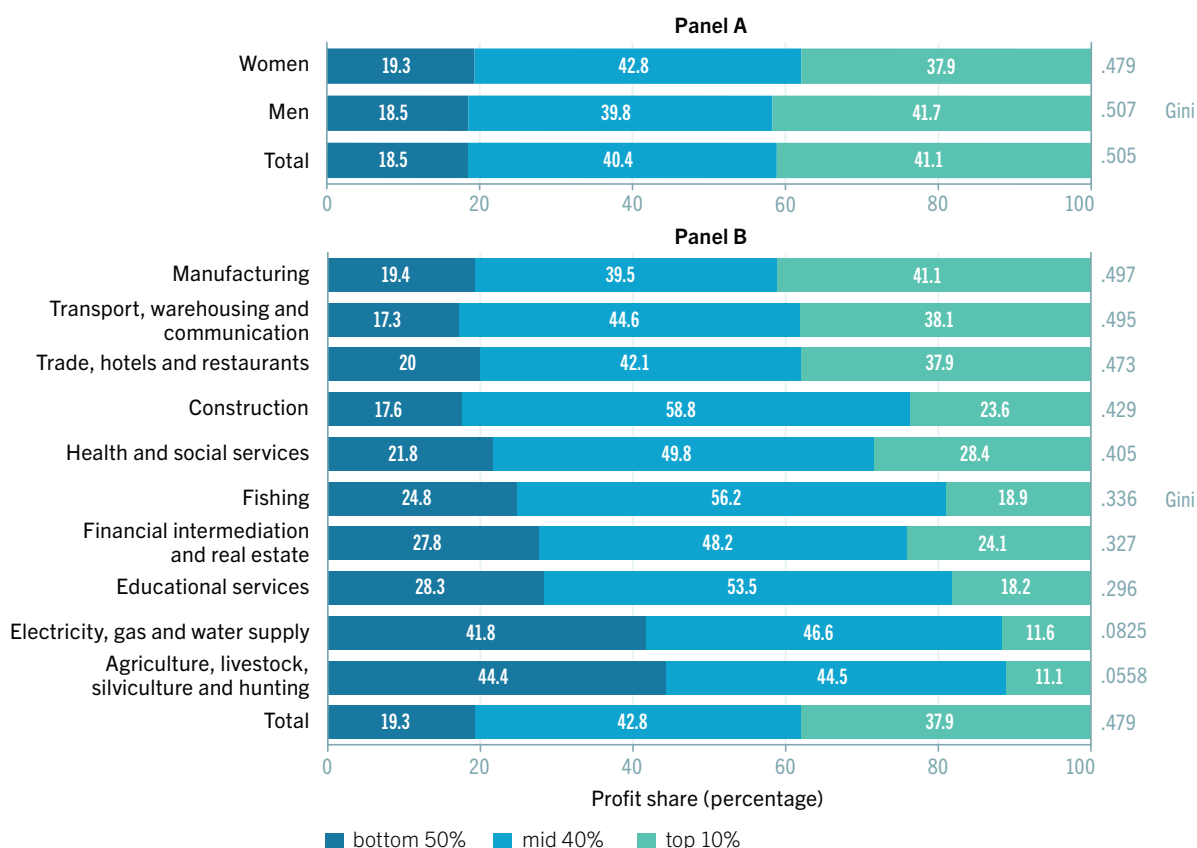
Note: The entire distribution is presented in the Annex, table A3. Grey areas in panel B, refer to 95-per cent confidence intervals. The Lorenz curve provides a graphic representation of the distribution of profits of employers by sex. The further away from the diagonal (red line), the more unequal the profit distribution.

As seen in figure 6, panel A, male employers in the bottom 50 per cent of the profit distribution earn 18.5 per cent of total profits, the middle 40 per cent take 39.8 per cent, and the top 10 per cent generate 41.7 per cent. Among female employers, the top 10 per cent make 37.9 per cent of profits, the middle 40 per cent take 42.8 per cent, and the bottom 50 per cent earn 19.3 per cent. Furthermore, our estimation of the Gini coefficient confirms the wider disparity of profits among male employers.⁵ The Gini coefficient for female and male employers is 0.479 and 0.507, respectively.

The profit disparity widens depending on the economic activity. Among female employers, the Gini coefficient is the highest for the manufacturing sector (0.497), followed by transport, warehousing and communication (0.495), and trade, hotels and restaurants (0.473). In these three sectors, the top 10 per cent earners take 41.1, 38.1, and 37.9 per cent of profits, respectively (see figure 3, panel B). In contrast, the most equitable distribution of profits occurs in agriculture, livestock, silviculture and hunting (0.056), followed by electricity, gas and water supply (0.083), sectors in which the bottom 50 per cent and middle 40 per cent of the distribution earn more than 40 per cent of profits.

⁵ The Gini coefficient measures the degree of income/wealth/profits equality in a population from 0 (perfect equality) to 1 (perfect inequality). It is equal to the area between the Lorenz curve and the line of perfect income equality (45-degree red line in the Lorenz graph).

Figure 6. Average share of employer's profits by profit percentile and Gini coefficient in El Salvador, 2008–17: (A) by sex; and (B) by economic activity of female employers



Improving the profitability of women employers. Overall, El Salvador employers' years of education remain low compared to other countries in Central America. Hence, access to training and opportunities for continuous learning would allow women and men employers to adopt productivity-enhancing management practices. Given the accentuated profit disparity between women and men who run medium-sized enterprises, EBMOs could, for example, offer women employers information, training and tools that enable them to enhance their profitability.

While more research is required to examine all factors that contribute to the wide differential in profits between female and male employers, our analysis shows that women employers have the potential to improve their earnings to at least where men stand. For example, women earn less than men in part because they complete fewer hours of paid work, while shouldering the majority of unpaid family care work. One way to reduce the burden on women is to improve the geographical coverage of social infrastructure and facilitate access to public child-care centres, which could further encourage women who are economically inactive to join the labour force. With the right guidance and support, women may succeed in "opportunity" entrepreneurship based on their individual aspirations and where economic and social conditions are right for a new product or service, either in an existing market or a new one. Additionally, facilitating access to finance or affordable cost of capital through development banking is critical to fostering an enabling environment for employers. If women employers have access to capital they may become more profitable. This may also increase competition in the commercial banking system and improve the functioning of credit markets.

03 | Chihuahua, Mexico

The negative effect of crime and violence on women's entrepreneurship





Located at the border with the United States, Chihuahua is one of the richest and most dynamic states in Mexico.¹ Over the period of 2003–17, Chihuahua's GDP grew at an annual average rate of 3.2 per cent, above the national average (2.4 per cent) (see Annex, figure A1). However, Chihuahua has been continuously confronted with violent crimes that negatively impact its businesses and communities. Incidents of crime in Chihuahua have declined since 2010, compared to the upward trend

seen for the entire country, and yet Chihuahua remains among the most violent regions in Mexico (see Annex, figure A2).² This case study assesses the effect of years of schooling, professional experience, and violence on the likelihood for women to be entrepreneurs, either as an employer or own-account worker (sole proprietor) in Chihuahua.³

Business owners are predominantly men. Among business owners in Chihuahua, women account for 14.6 per cent of employers and 28.4 per cent of own-account workers (see table 3). Women business owners, regardless of the type of business, are more educated than men. Women employers have, on average, 12.4 years of schooling, while women own-account workers have 9.4 years. Notably, regardless of sex, employers have more years of education than own-account workers. Among employers, women and men have about the same average years of professional experience, whereas men own-account workers have 3.1 more years of experience than women own-account workers.

Table 3. Characteristics of enterprises and entrepreneurs in Chihuahua, average 2011–16

Variables	Entrepreneurs			
	Employers		Own-account workers	
	Women	Men	Women	Men
Share of total entrepreneurs (percentage)	14.6	85.4	28.4	71.6
Individual level				
Years of education	12.4	11.2	9.4	8.3
Years of professional experience	28.6	28.4	27.4	30.5
Age	47	45.5	42.8	44.8
Average working hours (weekly)	46.6	48.1	34	42.6
Average real hourly earnings (Mexican pesos)	59.86	56.21	30.62	33.38

¹ OECD: OECD Territorial Reviews: Chihuahua, Mexico (OECD, 2012). Available at: <http://www.oecd.org/cfe/regional-policy/oecdterritorial-reviewschihuahuamexico.htm> [27 Apr. 2019].

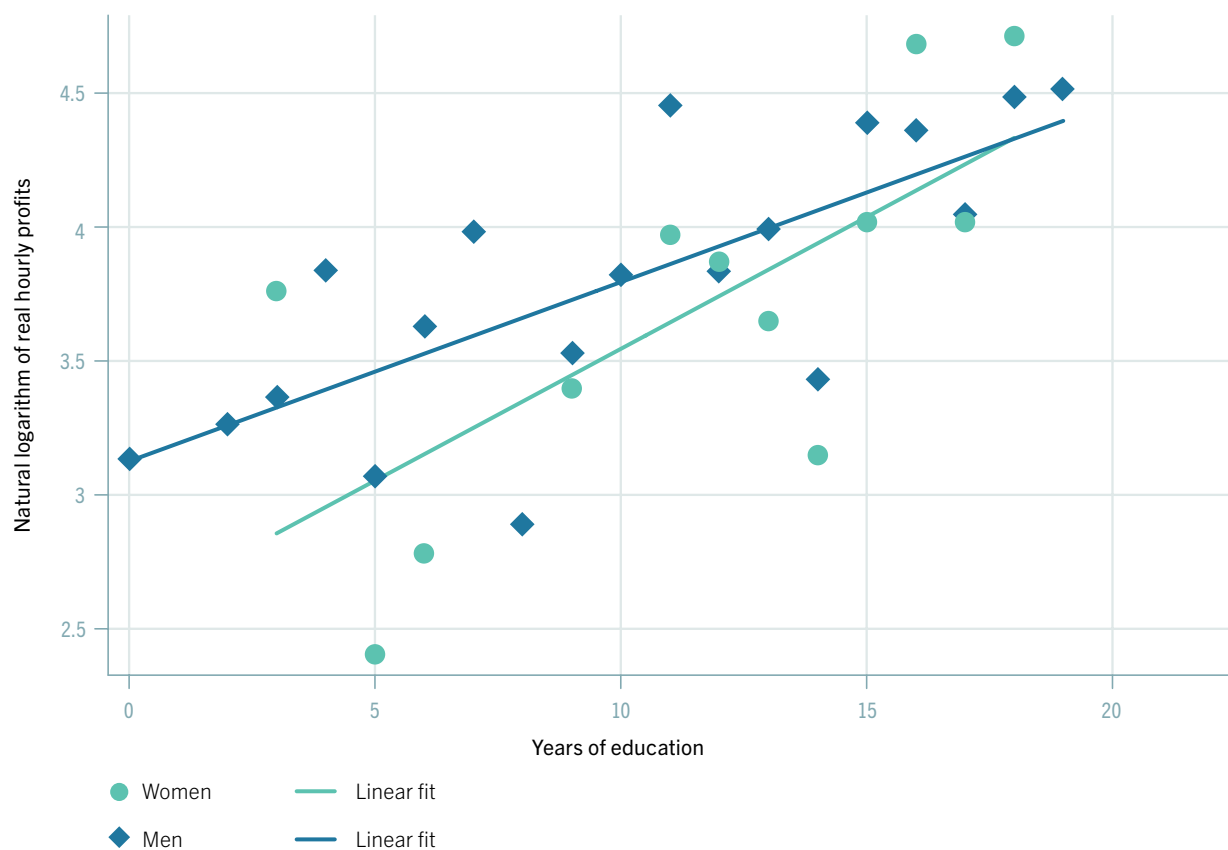
² See National Institute of Statistics and Geography: *Anuario estadístico y geográfico por entidad federativa 2017*, chapter 7, figure 7.5. Available at: http://internet.contenidos.inegi.org.mx/contenidos/Productos/prod_serv/contenidos/espanol/bvinegi/productos/nueva-estruc/aegef_2017/702825097929.pdf [27 Apr. 2019]

³ This research uses data from the National Occupation and Employment Survey (ENOE) conducted by the National Institute of Statistics and Geography. The ENOE gathers information on national population characteristics, as well as other demographic and economic variables to allow a deeper analysis of labour aspects. It is a random and multi-stage rotating panel in which people stay for one year and three months (5 quarters). We built a pooled dataset using first quarters of ENOE 2011–16. We eliminated the repeated individuals in the panel.

Employers in Chihuahua are older than own-account workers. The average age of women employers is 1.5 years more than men, whereas the average age of men own-account workers is 2 years more than women own-account workers. Moreover, men business owners tend to work more hours per week than women do. Nonetheless, men employers earn 6.1 per cent less than women employers, whereas women own-account workers earn 9 per cent less than men own-account workers. This finding suggests that enterprises run by women are more profitable than those run by men, which may also be associated with the fact that women have more years of schooling than men.

Years of education are positively correlated with business owners' earnings. Assessing the relationship between years of education and earnings confirms a positive correlation between both variables.⁴ Higher levels of earnings are associated with more years of schooling for women and men (see figure 7).

Figure 7. Business owners' average hourly earnings in Chihuahua by years of education, 2011–16



Women are less likely to be business owners. Our results show that every additional year of education is associated with a 0.7 percentage point increase in the probability to be an employer. However, women are, on average, 1.5 per cent less likely to be employers than men (see Annex, table A4). Among employers, our findings suggest that years of schooling have a larger effect than years of professional experience, whereas among own-account workers, years of professional experience appear to have a larger effect. In

⁴ We measure the correlation between years of education and the natural logarithm of hourly earnings by assessing the Spearman's rank correlation coefficient. Results show a statistically significant correlation of 0.44.

contrast, we find that each additional year of schooling is associated with a 1 percentage point⁵ decrease in the probability to be an own-account worker. Taking the representative sample of employers and own-account workers together, women in Chihuahua are about, on average, 4.7 per cent less likely to be business owners than men are.

Willingness to set up a business is associated with a high probability to be a business owner. We assess to the extent to which women and men are likely to set up a business when they explicitly expressed their willingness to do so. Results show that men and women's predicted probabilities to set up a business are 99.8 and 98.5 per cent, respectively (see Annex, table A5). This evidence suggests that women and men with a strong drive to become self-employed are very likely to embark on entrepreneurship. Moreover, when we examine the effect of receiving government transfers and remittances, we find a statistically significant larger effect for women than men. When women receive remittances, their probability to set up a business is 45.3 per cent, whereas that of men is 18.3 per cent. When women receive government transfers, their probability to be business owners is 19.6 per cent, while the probability for men is 8.8 per cent.⁶ The fact that remittances and transfers play such a role uncovers the importance of facilitating women's access to financing so that they are able to embark on entrepreneurship.

However, crime and violence in Chihuahua discourages entrepreneurship. Crime and violence is negatively associated with women and men's likelihood to be business owners, even when they explicitly expressed their willingness to become so.⁷ Our analysis shows that violence is associated with negative prospects to be business owners and to embark on entrepreneurship to become an employer. We find that individuals are 4.6 per cent less likely to be business owners, and about 1 per cent less likely to be employers because of violence, whereas it does not have any statistically significant effect on the likelihood to be an own-account worker (see Annex, table A6).

In sum, this case study highlights the importance of education for women business owners to be profitable in Chihuahua. Access to finance has also played a critical role in enhancing women's entrepreneurship activity. In addition to sound and stable macroeconomic conditions, a conducive environment to attain, preserve and guarantee peace, political and social stability, and rule of law aimed at lowering criminal incidence and violence, is vital to unlock private investment and encourage women to become successful business owners.

⁵ At the 10 per cent significance level.

⁶ Statistically significant at the 10 per cent level.

⁷ A binary variable is used to identify whether the individual has the willingness to become independent. Question 9d on the ENOE about the main reason to quit his/her last job and answer 02 (to become independent) are applied to construct the binary variable. Subsequently, we apply a homicide rate per 10,000 inhabitants and create an interaction between the willingness to become independent and the homicide rate to assess whether violence inhibits the decision to shift from wage employment to set up a business (either as an employer or own-account worker).

04 | Panama

Women in business, driven by necessity or opportunity?





Panama is one of the fastest growing middle-income countries in the world. Its average annual GDP growth was 7.2 per cent in the period 2001–13, more than double the Latin American average. With a population of 4 million people, Panama has made significant progress in reducing poverty and generating jobs, and it is considered to have one of the most promising growth prospects in Latin America.¹ As Panama continues to make progress, a closer look at their economic and social structures reveals further opportunities for growth. This case study examines how Panama could make economic gains by creating a more gender-inclusive society through women’s entrepreneurship, as employers or as own-account workers, based on data from 2002 to 2016.²

The gender gap in entrepreneurship. Entrepreneurship, both own-account workers and employers, is dominated by men in Panama. Women represent 29.5 per cent of own-account workers and 22.4 per cent of employers. While women own-account workers and employers have on average more years of education on average than men and relatively lower rates of informal employment, they earn less than men. Average monthly profits are higher for men own-account workers and employers by more than 78 per cent and 40 per cent, respectively, than for women (see table 4).

Table 4. Characteristics of enterprises and entrepreneurs in Panama, average 2002–16

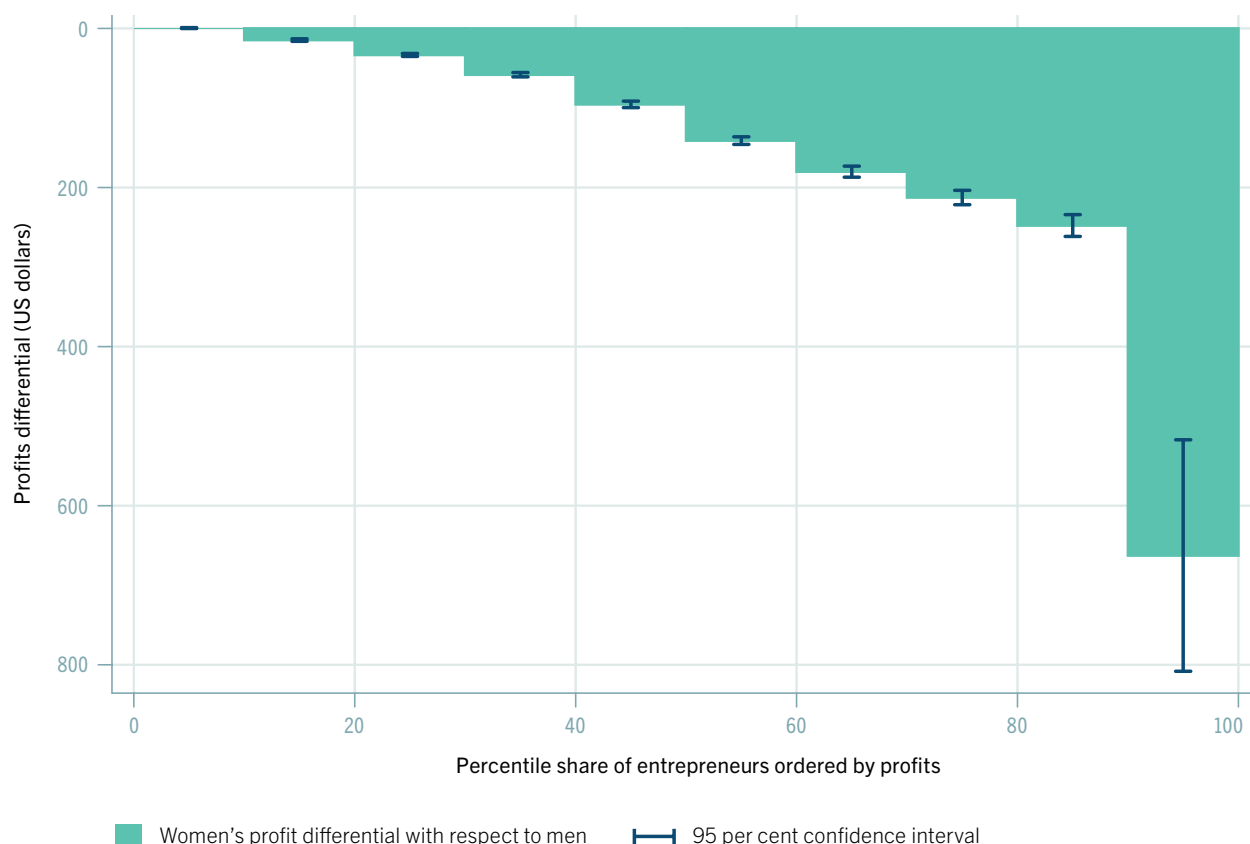
Variables	Entrepreneurs			
	Own-account workers		Employers	
	Women	Men	Women	Men
Share of total entrepreneurs (percentage)	29.47	70.53	22.39	77.61
Share of informal enterprises (percentage)	56.54	75.58	44.10	56.85
Individual level				
Years of education	8.44	7.70	11.85	10.95
Average monthly real profits (US dollars)	162.35	289.08	737.27	1,034.85
Enterprise level				
Number of employees	—	—	2.26	2.52

The difference in profits between men and women entrepreneurs is accute when moving up the earnings distribution. At the top 10 per cent earnings level (90–100 percentile), women make on average, US\$663 less than men (see figure 8).

¹ World Bank: *The World Bank in Panama: Overview*. Available at: <https://www.worldbank.org/en/country/panama/overview#2>

² Individual-level microdata are from the National Institute of Statistics (Panama), covering the period 2002-16 (even years).

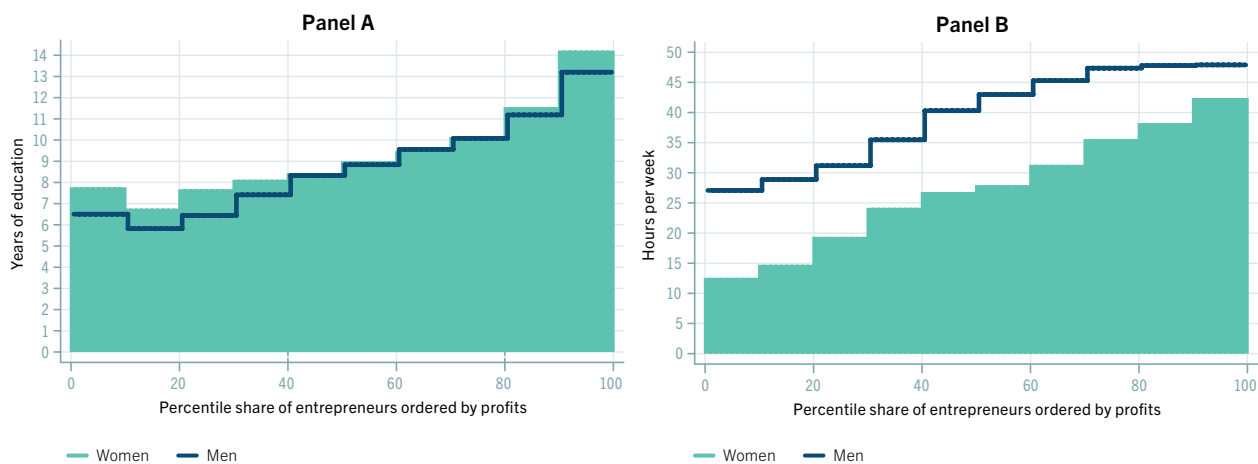
Figure 8. Average monthly income differential between women and men entrepreneurs in Panama by profit percentile, 2002–16



Education provides positive returns. On average, women who earn higher profits tend to have more years of education (see figure 9, panel A). Women at the highest earnings level (top 10 per cent of the profit distribution) have 6.5 more years of education than those at the lowest level. Women and men in the middle of the distribution have about the same percentil-average years of education (percentiles 40–80), whereas men in the bottom 10 per cent and top 10 per cent have, on average, fewer years of schooling than women. Moreover, each additional year of education is associated with an average increase of 10.38 per cent in monthly real profits for all women entrepreneurs. When analysed by category, returns on education are slightly higher for women employers (10.47 per cent), and lower for own-account workers (9.33 per cent). A conventional Mincer regression model is used to confirm this correlation (see Annex, table A7).³

³ We acknowledge some degree of endogeneity bias from omitted variables such as, for instance, unobserved ability. However, we do not have additional variables, such as mother or father years of education, to use an instrumental-variable approach. Nonetheless, we believe our estimates are within a plausible range compared to what other applied studies have estimated for Panama. For instance, Freire-Seoane and others estimate returns to education that range from 11.5 to 12.7 per cent using data from the 2001, 2004 and 2009 household surveys. See M.J. Freire-Seoane et al.: “Evolución de la rentabilidad de la educación superior en Panamá”, in *Revista iberoamericana de educación superior* (2018, Vol. 9, No. 24), pp. 17–41. Herrera and Madrid estimate returns between 10.5 and 16.2 per cent using the 1994 household survey. See V. Herrera and M. Madrid: *Perfiles de ingresos y retornos de la educación en Panamá*. (Panamá, CLICAC, 2009).

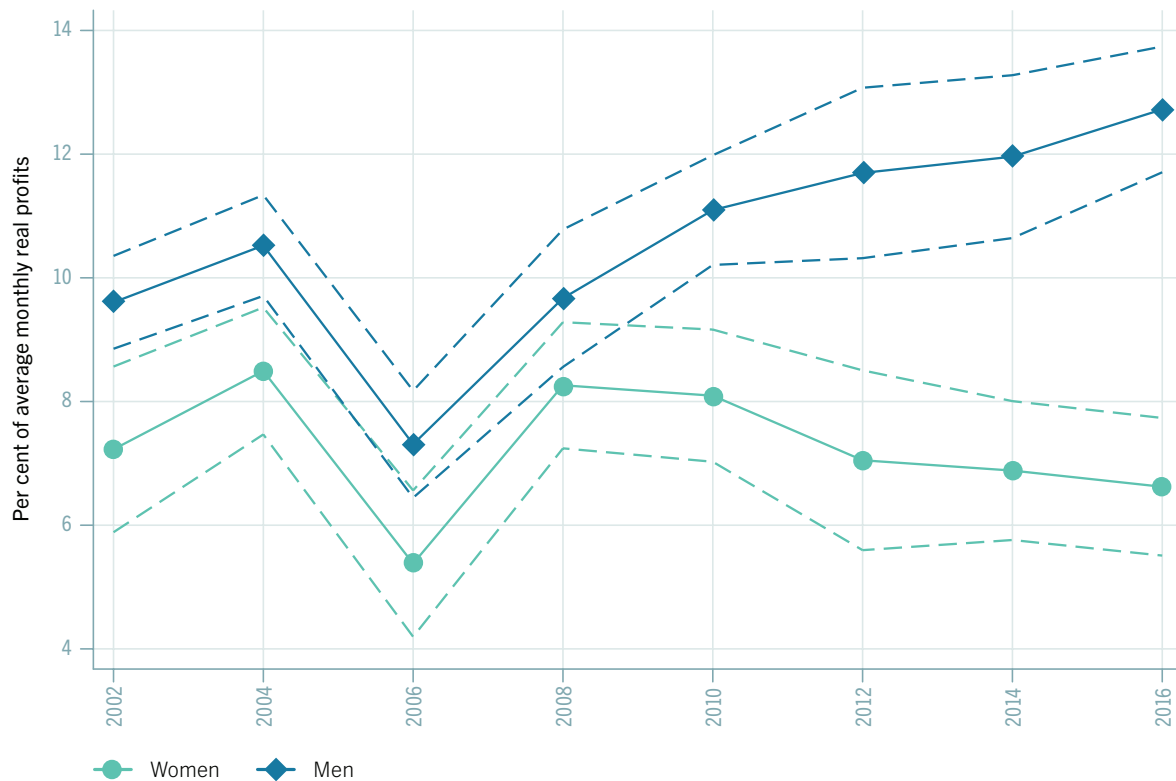
Figure 9. Profit percentile of entrepreneurs in Panama, 2002–16: (A) by average years of education; and (B) by average weekly hours of paid work



Women with higher earnings tend to work longer hours (see figure 9, panel B). There is a difference of 29.8 hours per week between women entrepreneurs with the highest and the lowest monthly real earnings. When comparing the bottom 1 per cent versus the top 1 per cent, women at the bottom work 18 hours a week whereas those at the top work 45.8 hours a week. Men have more hours of paid work on average than women. Men in the middle of the earnings distribution (percentile 50) work 41.64 hours, compared to 27.38 hours for women in the same percentile. The burden of unpaid family care work is typically carried by women, which reduces their ability to take on more paid working hours and reduces women’s overall earnings. Improving the distribution of unpaid work, or providing better access to child care would encourage and enable women to take on more paid working hours.

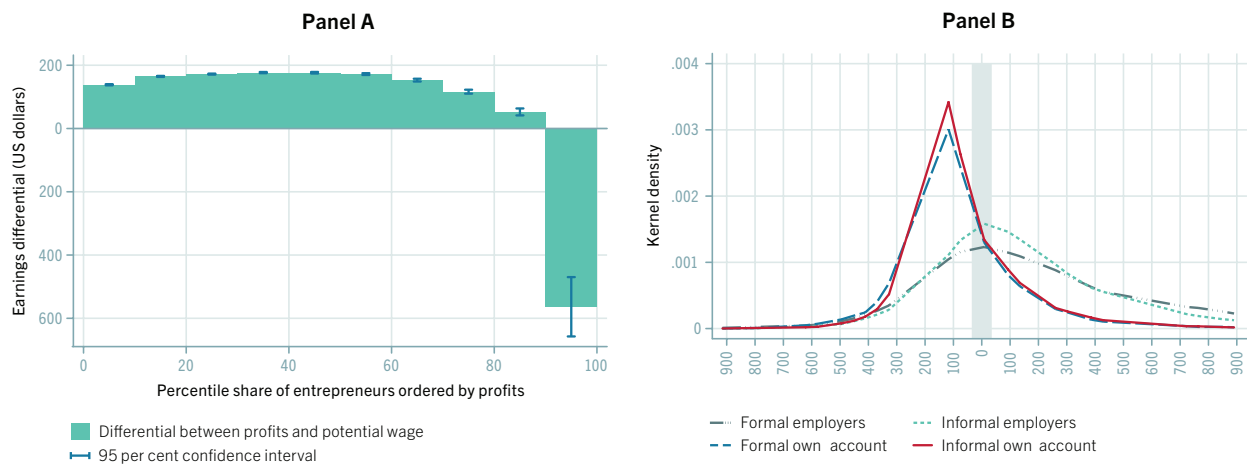
In the bottom 50 per cent of the earnings distribution, men’s and women’s monthly profits dropped by 3 percentage points in 2006. On the one hand, men’s earnings rebounded annually after 2006, reaching 12.7 per cent in 2016. Women’s earnings, on the other hand, showed a brief recovery in 2008, but exhibited a continuous drop through 2016. On average, women entrepreneurs in the bottom 50 per cent of the earnings distribution earned only 6.6 per cent of total profits in 2016, mirroring a significant earnings inequality between women and men entrepreneurs (see figure 10).

Figure 10. Share of total monthly profits for entrepreneurs in Panama in the 0–50 percentile, 2002–16 (even years)



The opportunity cost of women’s entrepreneurship depends on the level of earnings. The forgone wages women could have earned in wage employment can be considered the opportunity cost of entrepreneurship or otherwise the “potential wage”. Our assessment shows that the potential wage tends to be higher than profits made as an entrepreneur for most women with the exception of women in the top 10 per cent of the earnings distribution. Simply put, the bottom 90 per cent of women entrepreneurs have better earnings prospects in wage employment. Women in the top 10 per cent are better off as entrepreneurs (see figure 11, panel A). Additionally, there is a high density of women in informal entrepreneurship (either as employers or sole proprietors) who would be better off by entering into wage employment (see figure 11, panel B).

Figure 11. Difference between average profits from entrepreneurship and potential wage for women in Panama, 2002–16: (A) by population percentile; and (B) depicted as density distribution in the formal and informal economy



Note: For panel B, after estimating the difference between profits and potential wages, a Kernel density estimate reveals the density of women entrepreneurs whose profits are lower than their potential wage [a negative difference].

A low-level equilibrium trap. The fact that some women entrepreneurs would have higher income through wage employment can be explained by a number of factors such as the lack of entrepreneurial skills (business and technical) to organize and manage the production process of goods or the provision of services. This translates into low productivity and, consequently, lower profits. Other factors are associated with poor profitability, such as owners and workers' lack of training, financial constraints such as a lack of seed capital or barriers to access bank credit, high operating costs, excessive regulation, unfair competition (informal economy), as well as a mismatch in supply and demand. This context can create a low-level equilibrium trap: monthly real profits are at or near a subsistence level. At low-level equilibrium, savings and investment rates are negligible or zero, thus preventing entrepreneurial activities from growing and further developing.

Why do Panamanian women entrepreneurs situated in the lower earnings distribution continue their business despite uncertain prospects? This is likely associated with their pessimism about economic and labour market conditions, lack of information about vacancies, or adverse labour market prospects given their skills, years of education and professional experiences. In addition, recruitment and retention decisions may be biased and the business culture may not be favourable towards women even though women tend to have more years of education than men. The overall lack of decent job opportunities – along with a probable preference for self-employment and possibly a moderate risk aversion – contribute to entrepreneurship by necessity, in which women start their own business and remain with it as a survival alternative to make a living.⁴

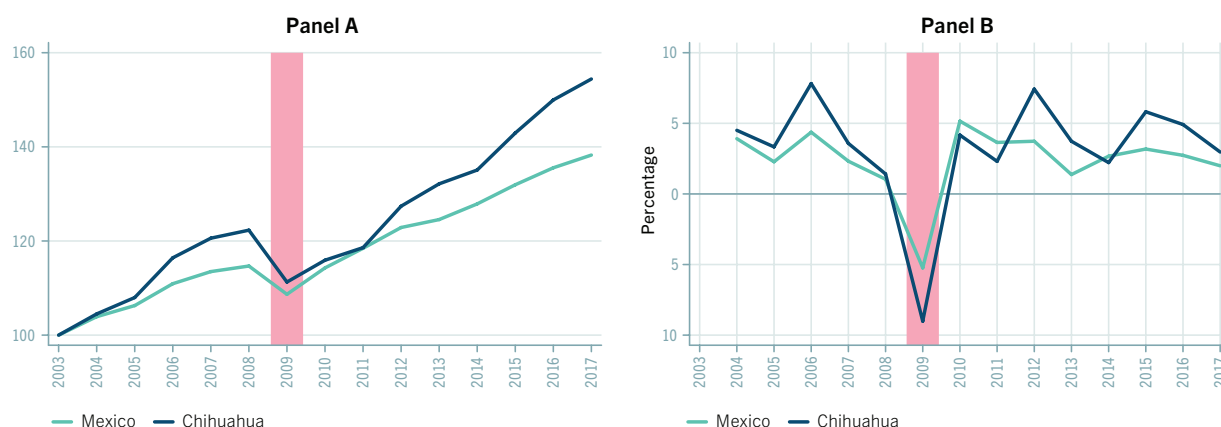
⁴ Acs, Z.: "How is entrepreneurship good for economic growth?", *Innovations: technology, governance, globalization* (2006, Vol. 1(1), pp. 97-107); Poschke, M.: "Who becomes an entrepreneur? Occupational choice and the firm size distribution", *IZA Institute of Labour Economics Discussion Paper*, 3816 (2010); Poschke, M.: "Entrepreneurs out of necessity: a snapshot". *Applied Economics Letters* (2013, Vol. 20(7), pp 658-663); S.C. Parker: *The economics of entrepreneurship* (Cambridge University Press, 2018).

These findings suggest that, on the one hand, it is key to allocate resources to women with entrepreneurial potential who have a real business case or have foreseen a business opportunity (opportunity entrepreneurship) associated with new innovative products, services, or production technologies, methods or processes. On the other hand, up-skilling and re-skilling of women to meet employers' needs would contribute to lowering the skills mismatch in the labour market, and ensuring women understand labour market conditions and are informed of vacancies. This may prevent low-profit entrepreneurship by necessity. It is also important to enable women entrepreneurs to develop skills to improve business performance and formalize their economic activities. Moreover, enabling women entrepreneurs to take on more paid working hours, could potentially enable them to earn higher profits. This can be done by reducing women's unpaid work by fostering better gender balance in shouldering unpaid work or by improving access to child care and other social infrastructure.

Annex: Supplementary figures and tables

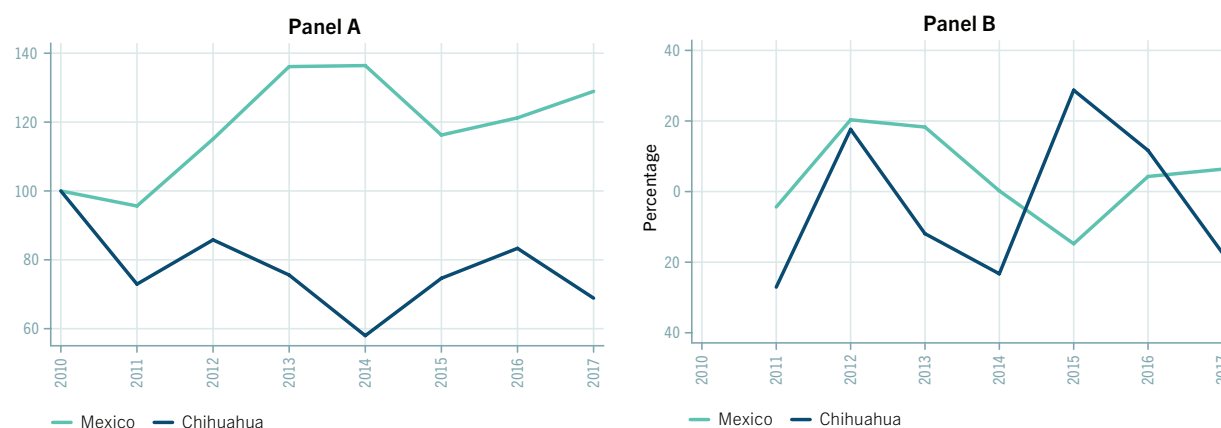
Figures

Figure A1. GDP for Mexico and Chihuahua, 2013–17: (A) by GDP index, base year 2003=100; and (B) annual GDP growth rate



Note: GDP is adjusted for inflation from 2013. The pink areas represent the 2008–09 global financial crisis.
Source: System of National Accounts, National Institute of Statistic and Geography.

Figure A2. Crime incidence for Mexico and Chihuahua by occurrence, 2010–17: (A) by crime incidence index, base year 2010=100; and (B) crime incidence annual growth rate



Source: National Institute of Statistic and Geography.

Tables

Table A1. Average marginal effects of years of education and years of professional experience on employers' earnings in Costa Rica, by sex and status of employment

Variables	Self-employed (employer and own-account)		
	Women	Men	Women employers
Years of education	6.632*** (0.0166)	3.117*** (0.00945)	5.920*** (0.0113)
Years of experience	2.102* (0.0126)	4.580*** (0.00770)	1.753*** (0.00246)
Constant	998.0*** (0.262)	1,130*** (0.152)	1,095*** (0.198)
Observations	3,452	7,892	309
R-squared	0.239	0.141	
Employment position FE	Yes	Yes	Yes
High school degree FE	Yes	Yes	Yes
College degree FE	Yes	Yes	Yes
Foreign language FE	Yes	Yes	Yes
Urban/rural population FE	Yes	Yes	Yes
Economic activity FE	Yes	Yes	Yes
Region FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: FE=fixed effects.

Table A2. Average marginal effects on the probability for women in Costa Rica to be employers, by education level and years of professional experience

Variables	Average marginal effects on the probability of an employer being a woman (as opposed to a man)	Average marginal effects on the probability of a woman being an employer (as opposed to an employee)
Level of education (reference: primary)		
Secondary	-0.211 (0.0231)	0.640*** (0.00179)
Tertiary	6.943** (0.0300)	2.739*** (0.00344)
Years of professional experience	-0.272*** (0.000917)	0.0977*** (9.24e-05)
Observations	1,957	14,313
Foreign language FE	Yes	Yes
Marital status FE	Yes	Yes
Urban/rural population FE	Yes	Yes
Economic activity FE	Yes	Yes
Region FE	Yes	Yes
Year FE	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: FE=fixed effects.

Table A3. Profit differential between female and male employers in El Salvador: (A) by profit percentile; and (B) Lorenz curves, average 2008–17

Panel A. Profits differentials

Percentile group	Profits differential
Female employers (ref: male employers)	
0–10	-46.28*** (5.588)
10–20	-66.00*** (5.362)
20–30	-79.70*** (5.292)
30–40	-94.78*** (7.269)
40–50	-106.0*** (8.517)
50–60	-119.4*** (9.578)
60–70	-153.8*** (12.34)
70–80	-210.8*** (15.10)
80–90	-298.7*** (29.52)
90–100	-1,173** (469.9)
Observations	7,012

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Panel B. Lorenz curves

Percentile	Employers	
	Female	Male
0	0 (0)	0 (0)
5	0.00475*** (0.000277)	0.00519*** (0.000553)
10	0.0143*** (0.000663)	0.0160*** (0.00116)
15	0.0267*** (0.00106)	0.0292*** (0.00192)

Percentile	Employers	
	Female	Male
25	0.0612*** (0.00209)	0.0620*** (0.00395)
30	0.0817*** (0.00265)	0.0817*** (0.00516)
35	0.105*** (0.00334)	0.104*** (0.00655)
40	0.132*** (0.00401)	0.129*** (0.00808)
45	0.161*** (0.00474)	0.156*** (0.00972)
50	0.193*** (0.00557)	0.185*** (0.0115)
55	0.229*** (0.00647)	0.217*** (0.0135)
60	0.269*** (0.00742)	0.253*** (0.0156)
65	0.312*** (0.00843)	0.292*** (0.0180)
70	0.359*** (0.00952)	0.335*** (0.0207)
75	0.412*** (0.0107)	0.385*** (0.0237)
80	0.471*** (0.0120)	0.440*** (0.0270)
85	0.539*** (0.0133)	0.504*** (0.0308)
90	0.621*** (0.0147)	0.583*** (0.0354)
95	0.727*** (0.0157)	0.688*** (0.0415)
100	1 (0)	1 (0)
Observations	7,012	7,012

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A4. Average marginal effects on the probability to be business owner in Chihuahua, by years of education, years of professional experience and sex

Variables	Business owner	Employers	Own-account
Years of education	-0.313 (0.00564)	0.678*** (0.00242)	-1.045* (0.00554)
Years of experience	1.276** (0.00497)	0.328* (0.00193)	1.101** (0.00487)
Women (reference: men)	-4.762** (0.0196)	-1.508*** (0.00527)	-3.121 (0.0196)
Observations	3,197	3,046	3,197
Year FE	Yes	Yes	Yes
Economic activity FE	Yes	Yes	Yes
Marital status FE	Yes	Yes	Yes
Population urban/rural FE	Yes	Yes	Yes
Migration status FE	Yes	Yes	Yes

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1
 Note: FE=fixed effects.

Table A5. Predicted probability to be a business owner in Chihuahua by interaction between variables

Variables	Predicted probabilities
Interactions	
Women#willingness to set up a business	98.53*** (0.0260)
Women#any support from government	19.59** (0.0840)
Women#remittances	45.31*** (0.141)
Men#willingness to set up a business	99.8*** (0.0041)
Men#any support from government	8.80* (0.0469)
Men#remittances	18.30** (0.0817)
Observations	3,197
Year FE	Yes
Economic activity FE	Yes
Marital status FE	Yes
Population urban/rural FE	Yes
Migration status FE	Yes

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1
 Note: FE=fixed effects, #=interactions

Table A6. Average marginal effects of violence on the probability to be a business owner in Chihuahua

Variables	Self-employed	Employers	Own-account
Interaction between expressed desire to set up a business and homicide rate	-4.605* (0.0235)	-0.897*** (0.00343)	0.384 (0.0177)
Observations	3,197	3,046	3,197
Year FE	Yes	Yes	Yes
Economic activity FE	Yes	Yes	Yes
Marital status FE	Yes	Yes	Yes
Population urban/rural FE	Yes	Yes	Yes
Migration status FE	Yes	Yes	Yes

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1
 Note: FE=fixed effects.

Table A7. Average marginal effects of years of education on earnings of women entrepreneurs in Panama

Returns to education			
Variables	All	Employers	Own-account
Years of education	10.38*** (0.00563)	10.47*** (0.0202)	9.334*** (0.00675)
Constant	456.2*** (0.0732)	452.1*** (0.318)	288.0*** (0.0891)
Observations	13,813	889	9,739
R-squared	0.515	0.272	0.287
Years FE	Yes	Yes	Yes
Provinces FE	Yes	Yes	Yes
Economic activity FE	Yes	Yes	Yes
Marital status FE	Yes	Yes	Yes
Urban/rural population FE	Yes	Yes	Yes

Robust standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1
 Note: FE means fixed effects.

Earnings regression model

$$\log w_{ijts} = \alpha_1 + \alpha_2 edu_{ijts} + \alpha_3 ex_{ijts} + \alpha_4 ex_{ijts}^2 + \alpha_5 gen_{ijts} + \alpha_6 firm_{ijts} + \alpha_7 pob_{ijts} + \psi_s + v_t + \pi_j + \gamma_c + \varepsilon_{ijts}$$

Where: w_{ijts} – natural logarithm of monthly real wage of individual i in region j , economic activity s , and year t ; edu_{ijts} and ex_{ijts} are years of education and years of potential labour market experience. The latter is estimated in line with Lemieux (2006): age minus years of schooling minus 6. gen_{ijts} , $firm_{ijts}$, and pob_{ijts} are binary variables for gender (reference: women), firm size (reference: micro), and population type (reference: rural), respectively. ψ_s , v_t , π_j , and γ_c are fixed effects for economic activity, year, province, and marital status, while ε_{ijts} is the error term.

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Women in business and management: Four case studies on women in business in Central America

This paper presents four case studies on women in business in Central America for Costa Rica, El Salvador, Mexico (Chihuahua), and Panama. The case studies examine various features of businesses run by women and assesses the potential of women to be more successful as entrepreneurs and employers if certain conditions are met. *Women in Business and Management: Four case studies on women in business in Central America* supplements the global report on *Women in Business and Management: The business case for change*.

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