

ENTREPRENEURIAL PUERTO RICAN WOMEN: A SPECIAL IN KIND?

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Abstract

This paper outlines the entrepreneurial Puerto Rican women characteristics and determines whether there are distinctive characteristics of becoming females' business owners in PR. This paper utilizes data from the Adult Population Survey (APS) for 2007 from the GEM Project. In general, the business owners in PR are sole owners, have many competitors, and do not export. The primary reason for pursuing the business was to take advantage of an opportunity and the most important motive for pursuing that opportunity was obtaining greater independence. Finally, the logistic regression's results imply that the probability of women having a business in PR is more probable as their education level increases.

Introduction

In recent years there has been a dramatic expansion of scholarly interest and activity in the field of women's entrepreneurship. Initiatives such as the Diana Project, founded in the late 1990s by U.S. scholars¹, have grown rapidly into a global network of researchers from over 20 countries, sparking numerous conferences, symposia, and publications.

Such activity has done a great deal to consolidate knowledge about women's entrepreneurship and to correct the historical scholarly omission to women's entrepreneurial activity, still Puerto Rico (PR) is not represented in such literature. Women entrepreneurs are vastly understudied, despite the fact that they are "one of the fastest rising populations of entrepreneurs and that they make a significant contribution to innovation, job, and wealth creation in economies across the globe" (deBruin, Brush & Welter, 2006).

The objectives of this study are to outline entrepreneurial Puerto Rican women characteristics and to determine whether there are distinctive characteristics of females business owners in PR. Specifically, the profile of women is compared with their counterparts in certain characteristics, such as sole ownership, number of competitors, and clients outside PR, among other variables. Moreover, characteristics that influence the opportunity recognition and thus business creation (opportunity recognition, fear of failure, social networks, and self-perception), are explored to determine whether they are significant in the probability of women pursuing entrepreneurship in PR.

This paper utilizes data from the Adult Population Survey (APS) for 2007 from the GEM Project. GEM is an ongoing large-scale academic project designed to study the causes and implications of entrepreneurial behavior across countries. For 2007, data consists of a stratified

¹ For additional information about Diana Project access www.dianaproject.org.

representative sample of individuals in 39 countries, including PR, the US, and seven Latin American countries (Argentina, Brazil, Chile, Colombia, Peru, Uruguay and Venezuela).

The results shows that there is not a significant difference between genders in terms of ownership, number of competitors, export experience, reason for pursuing a business, and motive for pursuing the business opportunity. In general, the business owners in PR are sole owners, have many competitors, and do not export. The primary reason for pursuing the business was to take advantage of an opportunity and the most important motive for pursuing that opportunity was obtaining greater independence. Finally, the logistic regression's results imply that the probability of women having a business in PR is more probable as their education level increases. This result is consistent with Kobeissi (2010) which also found a positive relationship between female education and female entrepreneurial activities for an international sample.

The results might have been limited because of the sample size. From the initial sample of 1,996 respondents, only 4% had businesses at the time of the survey. In addition, some of the proxies used in the statistical analysis might not be a perfect measure of the concept the author tried to measure. Despite these limitations, the study shed some light on the profile of females' business owners in PR and provides a basis of comparison with males.

The paper proceeds as follows. Section 2 discusses the relevant literature about opportunities identification and the variables that might influence it. Section 3 describes the data sources, sample selection, variables of interest and the descriptive statistics. The methodology is presented in Section 4 followed by the empirical results in Section 5. Concluding remarks are presented in Section 6.

2. Relevant Literature

Mainstream entrepreneurship research argues that the exploitation of opportunities is the essence of entrepreneurship (De Carolis & Saporito, 2006; Shane & Venkataraman, 2000; Eckhardt & Shane, 2003). The search and recognition of opportunities are influenced by self perceptions and personal ambitions. Both of these concepts are regarded as gendered due to the underlying assumption that men and women do not behave equally.

Individuals' self perceptions might lead to entrepreneurial intentions. In turn, these intentions are related to personal perceptions with respect to the supportiveness of a given society, the business environment, and one's own abilities (Bird, 1989; Weick, 1995). Anna, Chandler, Jansen and Mero (2000) have proposed that women might self-impose barriers by perceiving the lack of right opportunities and know-how to start or grow their own businesses. Justo, Cruz, de Castro, and Coduras (2007) add the enterprise life cycle and gendered expectations of work and family also impact female entrepreneurship.

Very close to self perceptions, personal ambitions are also elements that influence opportunity recognition. Gatewood, Shaver, and Gartner (1995) argue that how entrepreneurs think about themselves and their situation will influence their willingness to persist towards the achievement of their goal. Here societal roles and values might hinder women's ambitions to pursue entrepreneurial ideas by their own.

At the same time, the environment in which women are located might also influence their perceptions and ambitions. Culture, as the underlying system of values peculiar to a specific group or society, shapes the development of certain personality traits and motivates individuals in a society to engage in behaviors that may not be evident in other societies (Mueller & Thomas,

2000). Moreover, the country's administrative heritage, as a result of its political environment, may also shape entrepreneurship (George & Zahra, 2002).

In sum, opportunities recognition and thus business creation might be influenced by diverse variables such as: environment, prior knowledge of individuals (or social networks), personal ambitions, and self perceptions. These relationships are depicted on Figure 1.

// FIGURE 1 ABOUT HERE //

3. Data

GEM is an ongoing large-scale academic project designed to study the causes and implications of entrepreneurial behavior across countries. For 2007, data consists of a stratified representative sample of individuals in 39 countries, including PR, the US, and seven Latin American countries (Argentina, Brazil, Chile, Colombia, Peru, Uruguay and Venezuela).

The author uses the Adult Population Survey (APS) for 2007 from the GEM Project. The survey was conducted using a standardized questionnaire designed by GEM's Consortium research team. The survey was conducted through telephone interviews to at least 2,000 individuals from each country². The questionnaire includes an array of questions related to the individual's demographics, business characteristics as well as attitudes and awareness of entrepreneurship in each country.

Table 1 provides the sample size per country and gender. Females represent the majority (54.9%) of respondents of the questionnaire for 2007 in the selected countries. This trend is repeated in each of the individual countries with the exception of Argentina, Brazil, and Peru, where males have a higher representation with 53%, 52.1%, and 59.6%, respectively. It is interesting to note that PR provides the highest percentage of females' respondents, 72.4%, well above the other countries. In the US the proportion of respondents is almost equal by gender.

// TABLE 1 ABOUT HERE //

Figure 2 depicts the percentage of respondents of the entire sample that were business owners at the time of the survey³ per country. The top three countries with the highest proportion of self-reported business owners were Peru (32%), Colombia (30%), and Brazil

² Puerto Rico and Venezuela's samples consisted of 1,996 and 1,794 individuals, respectively.

³ The respondents were asked whether they own a company at the time of the survey.

(22%). PR provides the lowest percentage of business owners (4%) of the selected countries, a figure 7% below from the next lower country: Uruguay (11%).

// FIGURE 2 ABOUT HERE //

These business owners are further analyzed by gender in Figure 3. Although the majority of the samples of the selected countries were females, males were the highest overall proportion as business owners, 53.1%. By contrast in PR, Colombia, Peru, and Venezuela women represent a higher percentage of business owners with 53.7%, 56%, 58.3%, and 52.4%, respectively.

// FIGURE 3 ABOUT HERE //

Variables

Table 2 lists the variables included in the study. The table provides the name, the GEM code and a brief description of the question in the survey. All the variables are either dichotomous or categorical in nature, except age which was aggregated into six classes.

// TABLE 2 ABOUT HERE //

The demographic characteristics of the sample (age, working status, education, and income) are included in Table 3 by gender. The majority of the sample (80.56%) reported having over 35 years of age, being evenly distributed between females and males. Working full time or part time represents the category of the 79.3% of the whole sample, without any significant difference between the genders. Over half of the total sample, 55%, has some graduate experience, with males doubling the proportion of women. This result is interesting given the fact that currently women represent the majority in universities. Finally, 54.2% of the overall sample reported that their household income is in the upper 33% category. Given these facts we can say that business owners of the sample are working and educated adults with high income.

// TABLE 3 ABOUT HERE //

4. Methodology

For outlining entrepreneurial Puerto Rican women characteristics the following nine variables were measured against males: sole owner, competitors, international business, reason for business, opportunity type, social networks, opportunity perception, self-perception, and fear of failure. The null hypothesis that the mean of these variables were different between the genders was tested using univariate *t*-tests.

Furthermore, for assessing whether there are distinctive characteristics of females business owners in PR a logistic regression was estimated. The dependent variable is business owners in PR (OWNER-GENDER). This variable was computed adding the values of OWNER and GENDER. Then, responses were coded 1 if the owner was a female and 0 if the owner was a male. The sample size was reduced to 67 observations because only completed cases for all variables were used for this analysis. A stepwise logistic procedure was used to identify the significant independent variables, which explained the probability of being a female business owner in PR. A significance level of 95% was used to determine which variables entered and remained in the model. Equation (1) shows the model based on the relationship depicted in Figure 1:

$$OG_i = \alpha + \beta_1SN + \beta_2OP + \beta_3SP + \beta_4FF + \beta_5CONTROL + \varepsilon \quad (1)$$

where

OG = is the dependent variable (OWNER-GENDER) and represents observations *i*'s of business owners in PR. This dichotomous variable is coded 1 if the owner is a female and 0 if the owner is a male.

SN = Social networks as defined in Table 2.

OP = Opportunity perception as defined in Table 2.

SP = Self perception as defined in Table 2.

FF = Fear of failure as defined in Table 2.

CONTROL = Control variables for age, education, and income as defined in Table 2.

5. Results

In general, the business owners in PR are sole owners, have many competitors, and do not export. The primary reason for pursuing the business was to take advantage of an opportunity and the most important motive for pursuing that opportunity was obtaining greater independence. Table 4 provides the descriptive statistics for the sample for sole owner, competitors, international business, reason for business, opportunity type, social networks, opportunity perception, self-perception, and fear of failure. The univariate *t*-tests fail to reject null hypothesis of mean difference between genders for the variables sole owner, competitors, and self perception⁴.

// TABLE 4 ABOUT HERE //

The majority of the owners (76.5%) reported that he or she were the sole owner of the business. In addition, the majority of the respondents, 63%, perceive many others businesses offering the same product or services to potential customers. Moreover, the core of customers for Puerto Rican businesses is local, given that 66% of the owners have no customers living outside the Island. For all these variables, there is not a major discrepancy of opinions between the genders given the small percentage difference reported.

Taking advantage of a business opportunity was the primary reason for establishing the business for 52% of the sample. Furthermore, for those pursuing the business opportunity, obtaining greater independence was their principal motive (42.4%), followed by increasing personal income (30.3%), and just to maintain income (24.2%). A higher percentage of women (27.3%) reported greater independence for pursuing the business as compared to their counterparts (15.2%).

⁴ The significance level of confidence was 95% for sole owner and self perception, and 99% level for competitors, respectively.

Both genders equally reported (27.5%) that they knew someone personally who started a business in the 2 years preceding the survey. Therefore, the social networks of these groups seem to be equal. However, females reported a higher percentage for opportunity perception, self-perception, and fear of failure. Specifically, 20.5% of females believe that, in the 6 months following the survey, good business opportunities would exist in the area they lived as compared with 15.4% of males. In addition, 47.5% of females believe to have the knowledge, skill and experience required to start a business, a 32.2% of difference with males. Finally, 12.5% of females perceive that fear of failure would prevent them from starting a business as compared with 10% of males. These results support previous studies that have found that there are no significant differences between genders in terms of achievement motivation, autonomy, persistence, aggression, independence, non-conformity, goal-orientation, leadership or locus of control (Birley, 1989).

Table 5 presents the results for equation (1). The final logistic regression reveals a significant relationship between the dependent variable, the constant, and EDUCATION. This result implies that the probability of women having a business in PR is more probable as their education level increases. This result is consistent with Kobeissi (2010) which also found a positive relationship between female education and female entrepreneurial activities for an international sample.

// TABLE 5 ABOUT HERE //

Table 6 indicates that the model correctly predicted 64.2 percent of the cases in our sample of 67 business owners. Of the 44 women that were business owners the model correctly classified 47.7%. Furthermore, of the 38 men that were business owners the model correctly classified 57.9%.

// TABLE 6 ABOUT HERE //

6. Conclusions

This study outlines entrepreneurial Puerto Rican women characteristics and determines whether there are distinctive characteristics of females business owners in PR. The results shows that there is not a significant difference between genders in terms of ownership, number of competitors, international business, reason for pursuing a business, and motive for pursuing the business opportunity. In general, the business owners in PR are sole owners, have many competitors, and do not export. The primary reason for pursuing the business was to take advantage of an opportunity and the most important motive for pursuing that opportunity was obtaining greater independence. Finally, the logistic regression's results imply that the probability of women having a business in PR is more probable as their education level increases.

Given the limitations of the sample and some proxies, this study might be further extended in the future. A greater sample might provide a better profile of business owners in PR, especially females. Moreover, better refined variables might support the mainstream entrepreneurship research arena that opportunity recognition, self-perceptions, personal ambitions, and social networks indeed are fundamentals for pursuing businesses.

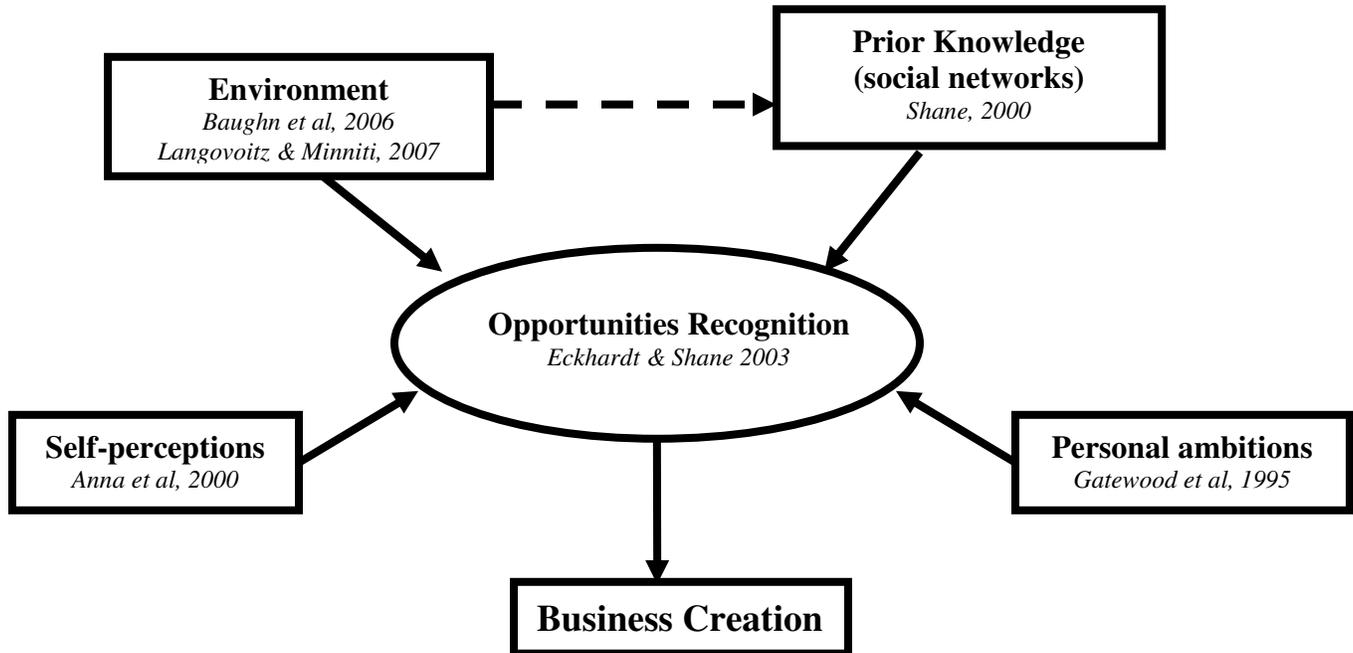
References

- Anna, A., Chandler, G., Jansen, E., & Mero, N. (2000). Women business owners in traditional and nontraditional industries. *Journal of Business Venturing*, 15(3), 279–303.
- Bird, B. (1989). *Entrepreneurial behavior*. Glenville, IL: Scott Foresman.
- Birley, S. (1989). Female entrepreneurs: Are they really different? *Journal of Small Business Management*, 27(1), 32 -37.
- Brush, C. G. & Gatewood, E. J. (2008). Women growing businesses: Clearing the hurdles. *Business Horizons*, 51, 175 -179.
- de Bruin, A., Brush, C., & Welter, F. (2006). Towards building cumulative knowledge on women's entrepreneurship. *Entrepreneurship Theory and Practice*, 30(5), 585-594.
- De Carolis, D.M. & Saporito, P. (2006). Social capital, cognition, and entrepreneurial opportunities: A theoretical framework. *Entrepreneurship Theory and Practice*, 30(1), 41–56.
- Eckhardt, J. & Shane, S. (2003). Opportunities and entrepreneurship. *Journal of Management*, 29(3), 333–349.
- Gatewood, E.J., Shaver, K.G., & Gartner, W.B. (1995). A longitudinal study of cognitive factors influencing start-up behaviors and success at venture creation. *Journal of Business Venturing*, 10(5), 371–391.
- George, G. & Zahra, S.A. (2002). Culture and its consequences for entrepreneurship. *Entrepreneurship Theory and Practice*, 26, 5-8.
- Gupta, V., Hanges, P.J., & Dorfman, P. (2002). Cultural clusters: methodology and findings. *Journal of World Business*, 37, 11-15.
- Justo R., Cruz C., De Castro J., and Coduras C. (2007): "Entrepreneurs' perceptions of success: examining differences across gender and family status", IE Working Paper, N° 06-07, Instituto de Empresa Business School.
- Kobeissi, N. (2010). Gender factors and female entrepreneurship: International evidence and policy implications. *Journal of International Entrepreneurship*, 8, 1 – 35.
- Mueller, S.L. & Thomas, A.S. (2000). Culture and entrepreneurial potential: a nine country study of locus control and innovativeness. *Journal of Business Venturing*, 16, 51–75.
- Shane, S. (2000). Prior knowledge and the discovery of entrepreneurial opportunities. *Organization Science*, 11(4), 448 – 469.

Shane, S. & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25(1), 217–226.

Weick, K. (1995). *Sensemaking in organizations: Foundations for organizational science*. Thousand Oaks, CA: Sage Publications.

Figure 1 – Variables of Entrepreneurial Behavior



Country	Females	Males	Total
Puerto Rico	1,445 (72.4%)	551 (27.6%)	1,996
United States	1,087 (50.2%)	1,079 (49.8%)	2,166
Argentina	949 (47.0%)	1,069 (53.0%)	2,018
Brazil	959 (48.0%)	1,041 (52.0%)	2,000
Chile	2,028 (50.6%)	1,980 (49.4%)	4,008
Colombia	1,359 (64.7%)	743 (35.3%)	2,102
Peru	809 (40.5%)	1,191 (59.5%)	2,000
Uruguay	1,339 (67.0%)	661 (33.0%)	2,000
Venezuela	1,049 (58.5%)	745 (41.5%)	1,794
TOTAL	11,024 (54.9%)	9,060 (45.1%)	20,084

Figure 2. Percentage of Business Owners by Country

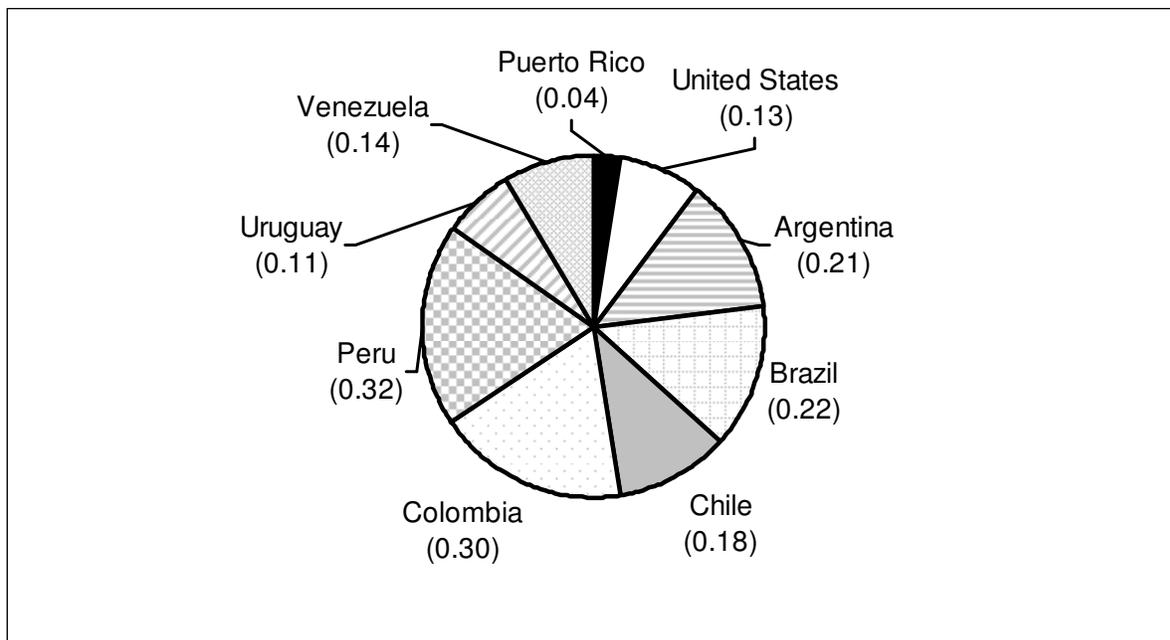


Figure 3. Percentage of Business Owners by Country and Gender

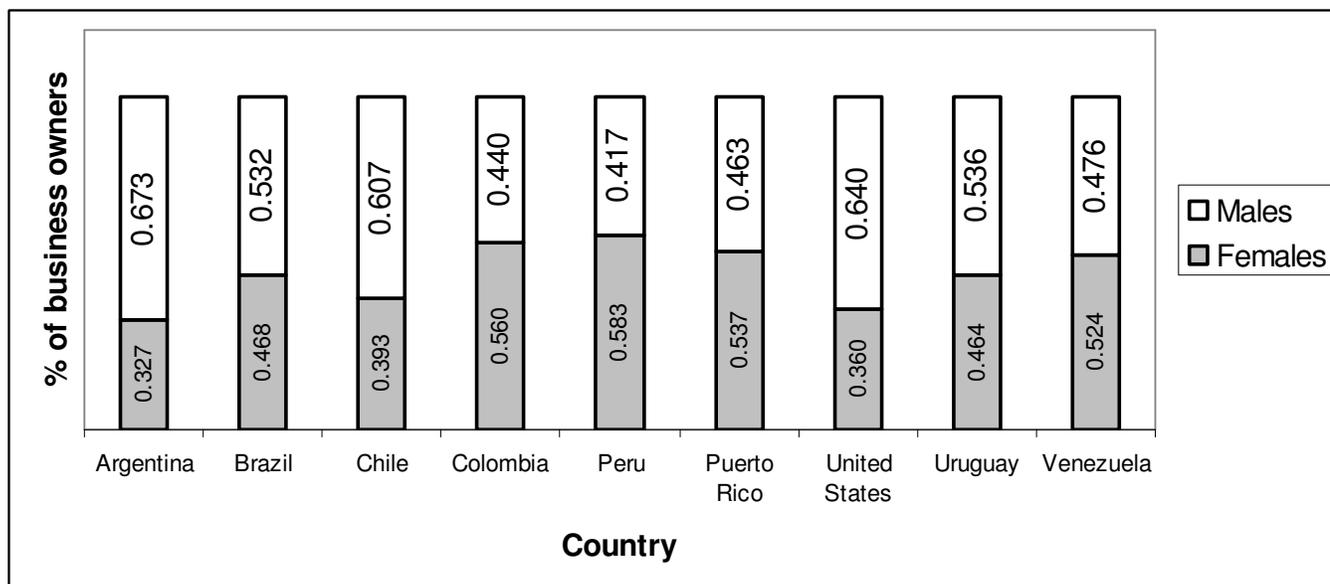


Table 3. Descriptive Demographics of Sample

	Female	Male	Total
Age (N=72)			
18 – 24 years	0 (0.00%)	2 (2.78%)	2 (2.78%)
25 – 34 years	5 (6.94%)	7 (9.72%)	12 (16.67%)
35 – 44 years	10 (13.85%)	11 (15.28%)	21 (29.17%)
45 – 54 years	7 (9.72%)	11 (15.28%)	18 (25.00%)
55 – 64 years	10 (13.85%)	9 (12.50%)	19 (26.39%)
Working Status (N=82)			
Full or Part Time	32 (39.02%)	33 (78.57%)	65 (79.27%)
Part Time only	5 (6.10%)	9 (10.98%)	14 (17.07%)
Retired; Disabled	0 (0.00%)	1 (1.22%)	1 (1.22%)
Homemaker	0 (0.00%)	1 (1.22%)	1 (1.22%)
Student	1 (1.22%)	0 (0.00%)	1 (1.22%)
Education (N=82)			
Some Secondary	3 (4.17%)	1 (1.22%)	4 (4.88%)
Secondary Degree	8 (9.76%)	9 (10.98%)	17 (20.73%)
Post Secondary	12 (14.63%)	4 (4.88%)	16 (19.51%)
Graduate	15 (18.29%)	30 (41.67%)	45 (54.88%)
Income (N=72)			
Lowest 33%	6 (8.33%)	8 (11.11%)	14 (19.44%)
Middle 33%	8 (11.11%)	11 (15.28%)	19 (26.39%)
Upper 33%	22 (26.83%)	17 (23.61%)	39 (54.17%)

Table 2. Variables

Name	GEM Code	Description
Owner	<i>OWNMGE</i>	Respondents who, at the time of the survey, were the owner of a company that they manage, self-employed or selling any goods or services to others. YES/NO Answers
Gender	<i>GENDER</i>	Respondents' gender
Age	<i>AGE</i>	Respondents' year of birth. Six categories: 18 – 24 yrs; 25 – 34 yrs; 35 – 44 yrs; 45 – 54 yrs; 55 – 64 yrs; 65 – 74 yrs.
Working status	<i>GEMWORK</i>	Respondents' occupational status at the time of the survey. Six categories: Full/Full or part time; Part time only; Retired/disabled; Homemaker; Student; Not working
Education	<i>GEMEDUC</i>	Respondents' highest degree. These responses were harmonized across all the countries into a five-category variable. Categories: Some secondary school; Secondary degree; Post-secondary degree; Graduate experience; No education
Household income	<i>GEMHHINC</i>	Respondents' household income; divided in three categories based on the income distribution of their country of origin. Three categories: Lower 33%; Middle 33%; Upper 33%
Sole owner	<i>OMOWNERS</i>	Number of people owning and managing the business. Three categories: One; Two; Three
Competitors	<i>OMCOMPET</i>	Respondents' perceptions on the existence of others businesses offering the same product or services to potential customers. Three categories: Many; Few; No business competitor
International business	<i>OMEXPORT</i>	Respondents' proportion of customers living outside the country. Seven categories: 100 – 91%; 90 – 76%; 75 – 51%; 50 – 26%; 25 – 11%; 10 – 1%; None
Reason for business	<i>OMREASON</i>	Respondents' reason for pursuing business opportunity. Four categories: Take advantage of business opportunity; No better choices for work; Combination of both of the above; Have a job but seek better opportunities
Opportunity type	<i>OMOPTYPE</i>	Of those respondents taking advantage of business opportunity, the most important motive for pursuing it. Four categories: Greater independence; Increased personal income; Just to maintain income; None of these
Social networks	<i>KNOWENT</i>	Respondents were asked whether they knew someone personally who started a business in the 2 years preceding the survey. YES/NO Answers
Opportunity perception	<i>OPPORT</i>	Respondents were asked whether they believe that, in the 6 months following the survey, good business opportunities would exist in the area they lived YES/NO Answers
Self-perception	<i>SUSKILL</i>	Respondents were asked whether they believed to have the knowledge, skill and experience required to start a business. YES/NO Answers
Fear of failure	<i>FEARFAIL</i>	Respondents were asked whether fear of failure would prevent them from starting a business. YES/NO Answers

Table 4. Descriptive Characteristics of Sample

	Female	Male	Total
Sole Owner (N=68)**			
Yes	28 (41.18%)	24 (35.29%)	52 (76.47%)
No	11 (66.18%)	5 (7.35%)	16 (23.53%)
Competitors (N=68)***			
Many	21 (30.88%)	22 (32.35%)	43 (63.24%)
Few	15 (22.06%)	7 (10.29%)	22 (32.35%)
None	3 (4.41%)	0 (0.00%)	3 (4.41%)
International Business (N=64)			
None	26 (40.63%)	16 (25.00%)	42 (65.63%)
1 – 10%	4 (6.25%)	6 (9.38%)	10 (15.63%)
More than 10%	7 (10.94%)	5 (7.81%)	12 (18.75%)
Reason for business (N=62)			
Take advantage of business opportunity	18 (29.03%)	14 (22.58%)	32 (51.61%)
No better choice for work	5 (8.06%)	6 (9.68%)	11 (17.74%)
Combination of above	9 (14.52%)	7 (11.29%)	16 (25.81%)
Have a job but seek better opportunity	1 (1.61%)	2 (3.23%)	3 (4.84%)
Opportunity type (N=33)			
Greater independence	9 (27.27%)	5 (15.15%)	14 (42.42%)
Increase personal income	6 (18.18%)	4 (12.12%)	10 (30.30%)
Just to maintain income	4 (12.12%)	4 (12.12%)	8 (24.24%)
None of these	0 (0.00%)	1 (3.03%)	1 (3.03%)
Social networks (N=80)	22 (27.50%)	22 (27.50%)	44 (55.00%)
Opportunity perceptions (N=78)	16 (20.51%)	12 (15.38%)	28 (35.90%)
Self-perception (N=80)**	38 (47.50%)	31 (38.75%)	69 (86.25%)
Fear of failure (N=80)	10 (12.50%)	8 (10.00%)	18 (22.50%)

***, ** - Mean is statistically different between genders at the 99% and 95% level, respectively.

Table 5. Logistic Regression Results

	Parameter Estimate	Standard Error	Wald	P-value	Exp(B)
α	-4.901	2.093	5.482	0.019	0.007
β_1	0.002	0.001	5.565	0.018	1.002

N=67
Pseudo R²
 α = Constant
 β_1 = Education

Table 6. Predictive Ability of Logistic Regression Model

Actual Gender	Predicted Gender of Business Owner	
	Female	Male
Female	21	11
Male	13	22

Total correctly predicted = 21 + 22 = 43 cases (64.2% of sample)