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# **Feminization of entrepreneurship in developing countries? Evidence from GEM data\***

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## **Abstract**

Certain analyses have studied gender differences in entrepreneurial activity, but, in general, the lack of specific controls may have led to biased results. In this paper, we analyze whether male or female individuals have a higher probability of becoming entrepreneurs in developing regions (Eastern Europe, Latin America and the Caribbean, South-East Asia, and Africa). Using GEM data from 2009 to 2014, we avoid the potential confounding problems arising from the definition of entrepreneurship. We find that the descriptive statistics show constant gender gaps in entrepreneurial activity in favor of males, for all the regions. However, when individual and environmental entrepreneurial characteristics are taken into account, these gaps diminish significantly in Eastern Europe, disappear in Asia and Africa, and are reversed in Latin America.

Keywords: Gender; Feminist; Entrepreneurship; Developing countries; GEM Data

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## 1. Introduction

Gender differences have been analyzed in a range of economic settings, including entrepreneurial activity, and in general it is found that women are less willing to be entrepreneurs and have lower rates of success in doing so (Boden and Nucci, 2000; Du Rietz and Henreckson, 2000; Fairlie and Robb, 2009; Robinson and Stubberud, 2009), although it is not known exactly whether these differences are tied to personal attributes or to universal phenomena (Minniti and Nardone, 2007). However, as proposed in Artz (2016), most of these analyses suffer from a lack of key controls, biasing conclusions. Examples of such controls are individual heterogeneity (Cliff, 1998), scale (Robb and Watson, 2012), and business size (Artz, 2016). Further, many of these studies are carried out in the context of developed economies.

In developing countries, there has been an increasing interest in the promotion of entrepreneurship in recent years (Naudé, 2010; Minniti and Naudé, 2010). Despite that, entrepreneurship in the developing countries remains an under-researched phenomenon (Naudé, 2008). In these countries, women still have lower rates of labor force participation (Mondragón-Vélez and Peña, 2010; Giménez-Nadal, Molina and Ortega, 2012), although female labor force participation tends to grow in the developing areas (Campaña, Giménez-Nadal and Molina, 2017a). Among the reasons for the focus on entrepreneurship in developing economies are: the promotion of growth through entrepreneurship, the effects on household welfare, and the reduction of poverty (Acs, 1992; Audretsch, Keilbach and Lehmann, 2006; Audretsch, 2007; Naudé et al., 2008; Campaña, Giménez-Nadal and Molina, 2017b). In particular, Terjesen and Amorós (2010) find that, in Latin America and the Caribbean, there is gender inequity with respect to entrepreneurship, but women are gaining in importance. (See Naudé (2010) for a review of entrepreneurial activity in the developing countries and its links to development.)

The study of women's entrepreneurship has attracted the attention of researchers in recent years. Minniti and Naudé (2010) show how the study of female entrepreneurship has evolved from the 1970s to the present. According to Cabrera and Mauricio (2017), entrepreneurial activities of women have increased over the past decade to about two-thirds the level of men's (Blanchflower, 2004; Carter and Shaw, 2006; O'Shea, Chugh and Allen,

2008; Kelley et al., 2016). Entrepreneurial activities of women perform poorly compared to those of men for a range of reasons (Kanzawa, 2005; Allen, Langowitz and Minniti, 2007; Coleman, 2007; Minniti and Naudé, 2010; Elam and Terjesen, 2010; Klapper and Parker, 2011; Kelley et al., 2016; Artz, 2016). Minniti (2010) studies and reviews the causes of gender differences in entrepreneurial activity. Minniti (2009), Jennings and Brush (2013), and Cabrera and Mauricio (2017) provide reviews of the literature on women's entrepreneurship, and De Vita, Mari, and Poggesi (2013) present a review of women's entrepreneurship in the particular case of the developing economies.

In the study of entrepreneurship, the Global Entrepreneurship Monitor (GEM) is “the world's foremost study of entrepreneurship” (<http://www.gemconsortium.org>). GEM researchers and experts provide high quality data and reports to the scientific community, in order to analyze, promote, and understand global entrepreneurial activity (Global Entrepreneurship Monitor, 2017). Cacciotti and Hayton (2015) and Stephan, Hart and Drews (2015) offer recent reviews of the existing literature on GEM, using GEM data. (See Kelley et al. (2016) for the most recent report about women's entrepreneurship from the point of view of GEM, where it is shown how gender gaps in entrepreneurial activity have narrowed, especially in some countries of Latin America and the Caribbean, Asia, and Africa; also see Allen et al., 2008; Kelley et al., 2011; Kelley et al., 2013, for previous GEM reports on women's entrepreneurship).

Against this background, the present paper aims to empirically analyze the individual participation in entrepreneurial activity, in four developing regions (Eastern Europe, South-East Asia, Latin America, and Africa), emphasizing the role of gender and controlling for certain attributes related to the individual appreciation of the entrepreneurial environment and social norms, and for the features and characteristics of entrepreneurial spirit. To the best of our knowledge, the combination of these macro- and micro-economic variables is not a common approach in entrepreneurship empirical models, but may meaningfully reduce the unobservable factors and provide more accurate results, hence avoiding confounding problems. A linear probability model on the dummy identifying entrepreneurs is developed using the GEM Adult Population Survey (APS) data for the years 2009 to 2014, and we find that, in Europe, men are or become entrepreneurs at a rate that is slightly, but significantly higher than women, while the opposite happens in Latin American countries. In Asia and

Africa, no gender gaps are found at the regional level, although different patterns emerge at country level. This document is an updated version of Molina, Ortega and Velilla (2017), where the data used, the sample size, the number of countries analyzed and the conceptual framework have been revisited.

The contributions of the paper are twofold: First, we use six waves of the GEM APS data to show how, according to descriptive results, men are or become entrepreneurs more frequently than women in the four regions analyzed, with the entrepreneurial rates in Latin America and Africa being significantly higher than in Eastern Europe and Asia. The use of several waves of the GEM APS data is, to the best of the authors' knowledge, new in the literature on entrepreneurship. Second, we define from the GEM data specific entrepreneurial controls at individual and country-environment levels, and find that the previous gaps significantly decrease in Eastern Europe, disappear in Asia and Africa, and reverse in Latin America, where women are found to be more prone to be or become entrepreneurs than are men. We repeat the analysis at country level to confirm these results.

The rest of the paper is laid out as follows: the data and summary statistics are shown in Section 2; the conceptual framework is described in Section 3, and Section 4 sets the econometric strategy and presents our empirical results. Finally, Section 5 contains our main conclusions.

## **2. Data and summary statistics**

The data is taken from the GEM 2009 to 2014 Adult Population Survey (APS) databases, which contain harmonized, cross-sectional micro-data on entrepreneurial-related factors of individuals worldwide. The major advantage of this data is the definition of entrepreneur, arising from the contribution to the TEA (*Total Early-Stage Entrepreneurial Activity*) Index, which assesses the percentage of the population that is either about to begin, or has already established an entrepreneurial activity, for a maximum of 42 months). (More information about GEM data can be found at <http://www.gemconsortium.org/data/sets>.)

Our sample is limited to those individuals who are not retired or (not temporarily) disabled, between 18 and 64 years old, and living in developing areas of Eastern Europe

(Hungary, Romania, Poland, Lithuania, Latvia, Croatia, Slovenia, Bosnia & Herzegovina, Macedonia, and Slovakia), Latin America and the Caribbean (Peru, Mexico, Argentina, Brazil, Colombia, Guatemala, Panama, Ecuador and Uruguay), South-East Asia (Malaysia, Thailand, South Korea, China, India, and Taiwan), and Africa (South Africa, Algeria, Tunisia, Nigeria, Angola, Uganda, Zambia and Botswana). These restrictions leave us with a selection of 363,950 individuals; 176,997 males and 186,953 females. The selection of the countries of the sample arises from the availability of data, given that the countries for which the GEM APS data is available vary across years. A detailed summarization of the countries that make up the sample, by year, is shown in Table 1.

(Table 1 about here)

The variable of interest of our analysis is the entrepreneurial participation of individuals, measured through the dummy variable “entrepreneur”, that identifies entrepreneurs (value 1), against non-entrepreneurs (value 0). This variable is defined from the GEM data from the individual contribution to the TEA index, i.e., it identifies those individuals who are about to begin, or have begun in the last 42 months, an entrepreneurial activity.

In general, there is no consensus about how entrepreneurs should be defined, e.g., self-employed (Blanchflower and Oswald, 1998; Molina, Ortega and Velilla, 2016; Campaña, Giménez-Nadal and Molina, 2017a; 2017b), business owners (Cagetti and De Nardi, 2006); businessmen without employees (Artz, 2016); or all together (Akyol and Athreya, 2009). As explained in Mondragón-Vélez and Peña (2010), the identification of entrepreneurs may not be important in countries such as the US, but is especially important in other cases, such as Colombia. Within this framework, GEM’s definition and data have achieved great importance in the scientific field and have become a source of agreement. Consequently, we directly adopt this definition of entrepreneur given by GEM, which prevents us from selection biases.

The key independent variable to analyze in this study, in relation to entrepreneurial activity, is the gender of individuals, which is also defined as a dummy variable that identifies males (value 1) and females (value 0). From the 363,950 individuals of the whole sample, 176,997 are males and 186,953 are females. Further, 15.55% of the total population are entrepreneurs, i.e., there are 56,599 entrepreneurs in the sample, of whom 31,654 are males

and 24,945 females, with this difference being statistically significant at the 99% level. Given the major proportion of females in the whole sample, it seems *a priori* that men are more prone to entrepreneur than women, given the higher number of male entrepreneurs. This result is in line with prior research, where it is generally found that men are or become entrepreneurs more frequently than women (Blanchflower, 2000; Boden and Nucci, 2000; Du Rietz and Henreckson, 2000; Fairlie and Robb, 2009; Robinson and Stubberud, 2009; Mussurov and Arabsheibani, 2015; Artz, 2016; Molina, Velilla and Ortega, 2016, 2017)

Table 2 shows, by region, that 12.5% of Eastern European male individuals are entrepreneurs, against 6.1% of the females. In the case of Asian countries, 13.2% and 10.0% of the males and females are entrepreneurs, respectively. In Latin America and Africa, these proportions are markedly higher, with 21.1% of males and 16.6% of females being entrepreneurs in Latin America, and 23.2% and 19.4% in Africa, respectively. All of the differences across gender are significant at the 99% level. These summary statistics show that, overall, individuals tend to be or become entrepreneurs most often in Africa, followed by Latin America, Asia and, finally, Eastern Europe. Figure 1 shows the evolution of male and female entrepreneurial levels from 2009 to 2014, by region. It can be seen how the greater relative differences across gender are found in Eastern Europe, where there is more than double the number of male than female entrepreneurs. Furthermore, it appears that the differences have remained constant in the analyzed period, with only a small sign of convergence in the case of Africa. Finally, the entrepreneurial levels have followed a positive trend in Eastern Europe and in Latin America, in contrast with a negative slope in Asia and a constant linear fit in Africa.

Despite this empirical evidence, we cannot yet conclude that men are more prone to be or become entrepreneurs than women, given the degree of unobserved heterogeneity and the lack of specific controls that may be interacting in the complex entrepreneurial phenomena (Coduras *et al.*, 2016; Orazem, Jolly and Yu, 2015; Artz, 2016). Several variables have been found to determine entrepreneurship, both at individual or at country-institutional level (the Institutional Theory, North, 1990). In this present study, since we are specifically analyzing the entrepreneurial activity from a micro-economic perspective, the point of view of individuals, which has been shown to predominate over the macro-economic context (see Giménez-Nadal *et al.*, 2016), we primarily consider individual characteristics, but also the

effect of Media and social norms. In particular, we consider the following independent variables from the GEM APS databases: formal education (defined through three dummies: basic education, secondary education, and University education), consideration of entrepreneurial opportunities, consideration of own entrepreneurial skills, peer effects (whether individuals have met other entrepreneurs), and consideration of the appearance of entrepreneurship in the Media. These variables have been defined as dummies. We also include the dummies for fear of failure, may consider being an entrepreneur in the future, have helped other entrepreneurs, and have invested in other business; along with, averaged at the national level, desire for equity, social status of entrepreneurs, and social status of business success (taking values between 0 and 1). The descriptive statistics of these variables, by gender and group of countries, are shown in Table 2.

(Table 2 about here)

### **3. Conceptual framework**

We propose a conceptual framework based on the existing literature to determine the direction of the relationship between the features described in the previous section, and the dependent variable, i.e. participation in entrepreneurial activity. In particular, Figure 2 shows the scheme of the proposed model, which can be summarized as follows:

Hypothesis 1: age. Young individuals are more prone to be or become entrepreneurs than females (Davidsson, 1989; Schott and Bagger, 2004; Kelley, 2009; Wennekers et al., 2010; Giménez-Nadal et al., 2016).

Hypothesis 2: education. Highly educated individuals with specific entrepreneurial skills, or who perceive entrepreneurial opportunities in their background, are more prone to be or become entrepreneurs (Cooper, Gimeno-Gascon and Woo, 1994; Kostova, 1997; Bosma et al., 2004; Clarysse and Moray, 2004; Minniti and Nardone, 2007; Minniti, 2009; Jenssen and Aasheim, 2010; Levie and Autio, 2013; Reynolds et al., 2013; Brixiová, Ncube and Bicaba, 2015; Fritsch et al., 2015; Kyrö, 2015). Skills and opportunities are related to formal education, since individuals who want to acquire skills, or who perceive opportunities, may pursue specific courses or University degrees. On the other hand, it may also be that



individuals who have attended specific courses have acquired the required skills to be an entrepreneur, or that the courses give them the ability to identify an entrepreneurial opportunity (Gnyawali and Fogel, 1994; Glaeser et al., 2004; Castro and Santero, 2014; Cho, 2014; Velilla and Ortega, 2017).

Hypothesis 3: specific entrepreneurial individual attributes. Existing studies have found that certain psychological and idiosyncratic individual characteristics, such as calling and vocation (Orazem Jolly and Yu, 2015; Viinikainen *et al.*, 2016), innovation (Schumpeter, 1934; Holmes and Schmitz, 1990; Baumol, 2002; Audretsch, 2004; Acs et al., 2005; Gilbert, McDougall and Audretsch, 2006; Braunerhjerlm *et al.*, 2010; Jenson, et al., 2016) entrepreneurial attitudes (Beynon, Jones and Pickernell, 2016), and positivism (Dawson *et al.*, 2015; Molina, Velilla and Ortega, 2016; Viinikainen *et al.*, 2016), may make individuals more prone to be an entrepreneur. The GEM APS data contains information on certain psychological and individual characteristics: fear of failure, consider being an entrepreneur in the future, help others to become an entrepreneur, and invest in a business. Thus, we develop a Principal Components Analysis of these four variables, by region, to extract the most information possible and avoid confounding results. We find that a single principal factor emerges, with an eigenvalue greater than 1 (see Table A1 in Appendix A), which is negatively related to the fear of failure, and positively related to the rest of these features. That is to say, individuals with little fear of failure, who may consider being an entrepreneur in the future, who have helped others with their entrepreneurial activities, and who have invested in another business, have a higher value of that principal factor, which we define as “entrepreneurial spirit”.

Hypothesis 4: the entrepreneurial environment. Individuals in an appropriate environment, in which entrepreneurship is well considered, will be more likely to be or become an entrepreneur (Acs, 1992; Kostova, 1997; Minniti, 2005; Cooper and Yin, 2005; Terjesen and Szerb, 2008; Santos, Curreal and Caetano, 2010; Wennekers et al., 2005; Wennekers et al., 2010; Barrado and Molina, 2015; Coduras et al., 2016; Roskrige, Poot and King, 2016; Giménez-Nadal et al., 2016; Velilla and Ortega, 2017). The GEM data contains information about the individual perceptions of the social consideration of entrepreneurs, the social consideration of success in business, the desire for equity, and the importance given by the Media to entrepreneurship. Given the high level of multicollinearity arising from the three

former features (with a mean Variance Inflation Factor value of 4.08), we develop a PCA to find that a single variable should be defined (according to the eigenvalues), at country level. This principal factor, which we call “social norms”, is positively related to the three initial variables (see Table A2 in Appendix A). Finally, the GEM data also contains information on peer effects, which can also be considered as environmental features, and have been found to influence entrepreneurship (Holcomb et al., 2009; Klyver, Hunter and Watne, 2012; Blumberg and Pfann, 2015; Giménez-Nadal et al., 2016; Okumura and Usui, 2016; Viinikainen et al., 2016).

(Figure 2 about here)

#### 4. Empirical analysis

A linear probability model is developed as follows: for an individual “ $i$ ” residing in country “ $j$ ” in year “ $t$ ”, let  $Y_{ijt}$  be the dummy variable determining whether he/she is an entrepreneur (value 1 for entrepreneurs, 0 in other case),  $G_{ij}$  be the gender (1 for males, 0 for females), and  $X_{jti}$  a vector of individual and social controls. We then OLS estimate the following equation:

$$Y_{ijt} = \beta_0 + \beta_G G_{ij} + \beta_X X_{ijt} + \alpha_j + \alpha_t + \varepsilon_i \quad (1)$$

where  $\alpha_j$  and  $\alpha_t$  are country and year fixed-effects, respectively, and  $\varepsilon_i$  are unmeasured factors. Under this specification, the sign of the coefficient associated with gender,  $\beta_G$ , would determine whether men are or become entrepreneurs more frequently than women ( $\beta_G > 0$ ), whether women are or become entrepreneurs more frequently than men ( $\beta_G < 0$ ), or if there are no significant differences in entrepreneurial participation between males and females ( $\beta_G$  not statistically different than 0).

##### 4.1. Results by region

We estimate Equation 1 for each region in Table 3, first using a simple specification in which only gender, age, and formal education are considered (Columns (1), (3), (5) and (7)), and then a complete model in which all the features are included, to show the importance of

including specific variables to control by observed individual and social heterogeneity and avoid confounding results (Columns (2), (4), (6) and (8)).

Columns (1) and (2) in Table 3 show estimates for Eastern Europe. We can see how the parameter  $\beta_G$  decreases from 0.064 to 0.010 when the complete model is estimated, in contrast to the simple model, showing a decrease of more than 80 percentage points in the effect of gender over the probability of being an entrepreneur. However, the effect of being male remains positive and significant, showing that, although gender gaps tend to decrease, they do not disappear. The inclusion of controls in Column (2) also affects the other regressors in Column (1), since education turns from having a significant and positive effect to having a non-significant effect, in favor of the effect of entrepreneurial skills. Peer effects are also significant and positively related to entrepreneurship, as are the factor of entrepreneurial spirit. Age, opportunity, Media, and social norms appear not to have a significant relationship with the probability of being an entrepreneur in the case of Eastern Europe.

Columns (3) and (4) contain estimates for South-East Asia, showing that, in the presence of the controls, the effect of gender meaningfully decreases from a significant 0.033 in Column (3) to a non-significant 0.002 in Column (4), showing no evidence of significant gender gaps in the entrepreneurial activity in Asia, in the presence of the controls. Regarding the rest of the regressors, we find that University education shows a negative coefficient, while skills are positive and significantly related to entrepreneurship. This may suggest that highly-skilled individuals who do not consider that they have skills may prefer to look for regular wages and salaries, rather than establish a business. Peer effects are significant and positively correlated with entrepreneurship, as is entrepreneurial spirit. In contrast to the case of Europe, Media in Asia presents a significantly positive (at the 90% level) conditional correlation with entrepreneurial activity.

Estimates for the Latin American and Caribbean countries are shown in Columns (5) and (6). In this case, the parameter  $\beta_G$  turns from a positive and significant 0.045 in the estimates of Column (5) to a negative and significant -0.012 in Column (6), showing how gender gaps not only disappear in the presence of the control regressors, but even reverse, and that women are more prone to be or become entrepreneurs than men in Latin American and Caribbean

regions, when the rest of the variables are considered. It is also found that age is positively related to entrepreneurship in Column (6), in contrast to Hypothesis 1; individuals who have a secondary education level are less likely to be entrepreneurs, and skills, peer effects, and the entrepreneurial spirit are significant and positively related to the entrepreneurial participation of individuals.

Finally, Columns (1) and (2) in Table 3 show estimates for Africa. As in the case of Asia, the parameter  $\beta_G$  is significant and equal to 0.040 in the absence of controls, but becomes a non-significant 0.000 in Column (8). Thus, we find an absolute disappearance of gender gaps in entrepreneurial activity in Africa, in the presence of controls. Regarding the rest of the variables, as in the previous cases, skills, peer effects, and the entrepreneurial spirit are significant and positively correlated with entrepreneurship. Finally, we find that individuals who have gone to University are less prone to be entrepreneurs in Africa. This result may be due to the specific labor conditions of the region, where highly-skilled individuals may prefer high-qualified job positions, as is also the case in Asia.

In sum, we find that, in general, the inclusion of controls significantly conditions the results, since the significant and positive gender gaps found turn out not to be significant gaps in Asia and Africa, meaningfully decrease in Eastern Europe, and even turn in favor of women in Latin America. Furthermore, we find no evidence in favor of Hypothesis 1, while the positive effect of education is mainly concentrated through entrepreneurial skills (Hypothesis 2). The individual features capturing the entrepreneurial spirit of individuals are positive and significantly correlated with entrepreneurship, as expected (Hypothesis 3), and peer effects are positively related to entrepreneurship, perhaps capturing the effect of Media (partially supporting Hypothesis 4).

## 4.2. Results by country

We now repeat the estimates for each of the countries in the sample, in order to study differences within regions. Estimated coefficients associated with gender,  $\beta_G$ , are shown in

Table 4.<sup>1</sup> We can see that, among Eastern European countries, in seven of the ten cases (Hungary, Lithuania, Latvia, Croatia, Slovenia, Macedonia, and Slovakia) the conditional correlation between being male and being an entrepreneur is positive, indicating that men tend to be entrepreneurs more often than women. On the other hand, in Romania the estimated coefficient is negative (-0.009) and significant, while in Poland and Bosnia estimated  $\beta_G$ 's are positive but not significant.

In the case of Latin American countries, estimated  $\beta_G$  are negative in seven of the nine cases, but only negative and significant in five countries (Mexico, Brazil, Guatemala, Panama, and Ecuador). These negative parameters vary, from a maximum decrease in the probability of an entrepreneur being male, relative to female, of 3 percentage points in Brazil, to 1 percentage point in Mexico. In Peru and Uruguay, estimates are positive, but only significant in the latter country, and in Argentina and Colombia, estimates are negative but not significant.

In the case of Asian countries, we find mixed results, with Malaysia, China and South Korea showing no significant difference from zero estimated  $\beta_G$ 's, a slightly positive, and significant, parameter in the case of Taiwan, and two meaningful and significant parameters of 0.033 and -0.033 in South Korea and Thailand, respectively, which may compensate for each other in the pool estimation. Nonetheless, in general the parameters for the case of Asia are positive (except in Thailand).

Finally, in Africa we estimate three positive parameters in Algeria, Tunisia, and Nigeria, with this being significant in the first two (0.024 and 0.027, respectively). The five remaining cases show negative estimates of  $\beta_G$ , although only slightly significant in the case of Uganda.

To sum up, Table 4 shows that, in general, the small gender gaps in favor of men are confirmed in the Eastern European economies, and the same happens with the gaps in favor of women in Latin American and Caribbean countries. However, in Asia and Africa, where no gender gaps were found in the pooled estimates at regional level, the cross-country estimates show significant differences within regions, with countries where men are more often entrepreneurs, others where women predominate, and others where no gaps are found.

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<sup>1</sup> Tables B1 to B4 in Appendix B show the additional estimates for Eastern Europe, Latin America, South-East Asia, and Africa, respectively.

Nevertheless, the higher overall coefficients, which are found in the cases of Thailand and South Korea, are of -0.033 and 0.033 respectively, indicating a relatively small variation of 3.3 percentage points in the probability of becoming an entrepreneur, *ceteris paribus* the rest of the features considered (see Appendix B), depending on gender.

## 5. Conclusions

We use the GEM APS data from years 2009 to 2014 to determine gender differences in entrepreneurial participation in Eastern Europe, Latin America, South-East Asia, and Africa. Results show that, even when descriptive statistics and simple models demonstrate that men are more prone to be or become entrepreneurs, when controlling for both individual and environmental entrepreneurial variables, gaps decrease in Europe, reverse in Latin America, and tend to disappear in Asia and Africa, with these latter cases showing different results within regions. These findings are partially in line with those of the work of Kelley et al. (2016) on the GEM Report on Women's Entrepreneurship, in regard to the trends of female entrepreneurial activity at the country level. In addition, some general rules are found with regard to control features, with entrepreneurial activity exhibiting positive conditional correlations with peer effects, managerial and entrepreneurial skills, and individual entrepreneurial characteristics, measured through the entrepreneurial spirit.

The limitations of our study are due, mainly, to the nature of the data. Since the GEM data is an international database, but countries where the GEM operates vary in time, we do not have a sufficiently large and homogenized number of observations to propose cross-country results for all the countries in the analyzed region. Then, we must acknowledge certain selection biases. Further, cross-sectional analyses have the limitation of not allowing us to perform causality analyses, and only conditional correlations can be estimated.

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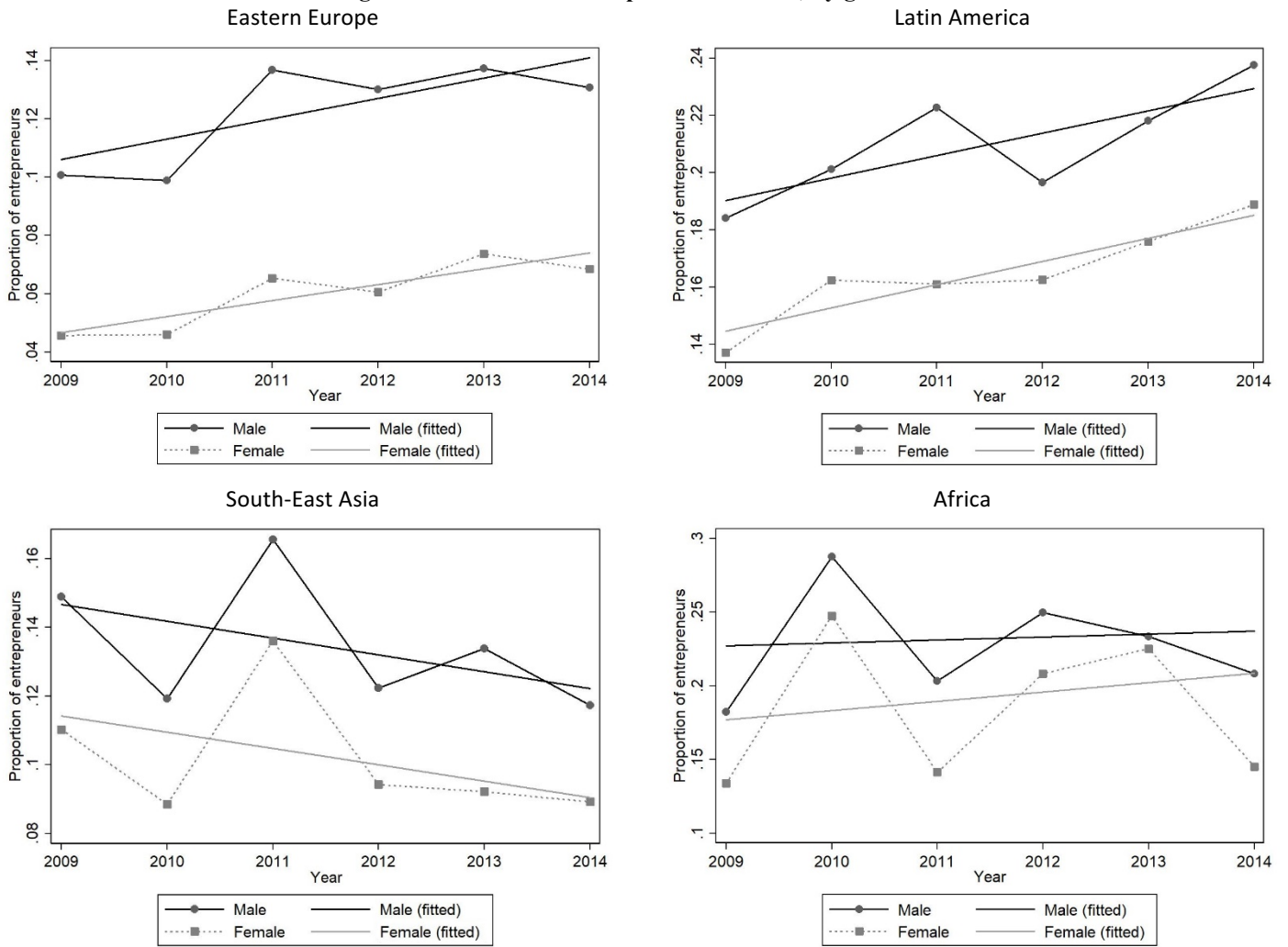
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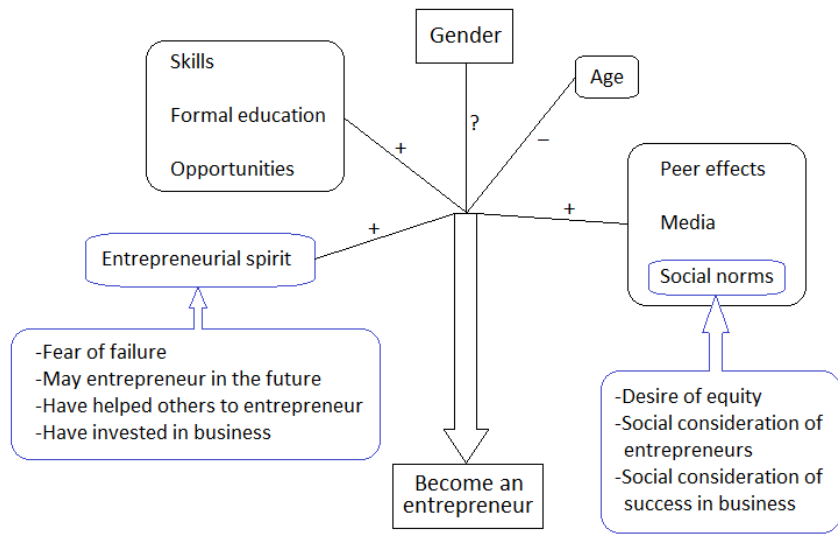
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**Figure 1. Evolution of entrepreneurial levels, by gender**



Note: The sample (GEM APS 2009 to 2014 data) is restricted to individuals between 18 and 64 years old, who are not retired or disabled.

**Figure 2. Theoretical framework**



**Table 1. Countries of the sample, by year**

Country	Year					
	2009	2010	2011	2012	2013	2014
<b>Eastern Europe</b>						
Hungary	X	X	X	X	X	X
Romania	X	X	X	X	X	X
Poland			X	X	X	X
Lithuania			X	X	X	
Latvia	X	X	X	X	X	X
Croatia	X	X	X	X	X	X
Slovenia	X	X	X	X	X	X
Bosnia	X	X	X	X	X	
Macedonia		X		X	X	X
Slovakia			X	X	X	X
<b>Latin America</b>						
Peru	X	X	X	X	X	X
Mexico		X	X	X	X	X
Argentina	X	X	X	X	X	X
Brazil	X	X	X	X	X	X
Colombia	X	X	X	X	X	X
Guatemala	X	X	X		X	X
Panama	X		X	X	X	X
Ecuador	X	X		X	X	X
Uruguay	X	X	X	X	X	X
<b>South-East Asia</b>						
Malaysia	X	X	X	X	X	X
Thailand			X	X	X	X
S. Korea	X	X	X	X	X	X
China	X	X	X	X	X	X
India				X	X	X
Taiwan		X	X	X	X	X
<b>Africa</b>						
South Africa	X		X	X	X	X
Algeria	X		X	X	X	X
Tunisia	X	X		X		X
Nigeria			X	X	X	
Angola		X		X	X	
Uganda	X	X		X	X	
Zambia		X		X	X	
Botswana				X	X	X



**Table 2. Summary statistics, by region and gender**

VARIABLES	Eastern Europe			South-East Asia			Latin America			Africa		
	Male	Female	<i>p</i> -value	Male	Female	<i>p</i> -value	Male	Female	<i>p</i> -value	Male	Female	<i>p</i> -value
<b>Being an entrepreneur</b>	0.125 (0.330)	0.061 (0.240)	(<0.001)	0.132 (0.339)	0.100 (0.300)	(<0.001)	0.211 (0.408)	0.166 (0.372)	(<0.001)	0.232 (0.422)	0.194 (0.395)	(<0.001)
<b>Age</b>	38.99 (12.38)	39.16 (12.05)	(0.019)	37.98 (12.08)	38.14 (11.94)	(0.077)	36.28 (12.57)	37.06 (12.54)	(<0.001)	33.67 (11.56)	33.68 (11.61)	(0.874)
<b>Basic education</b>	0.043 (0.204)	0.058 (0.234)	(<0.001)	0.097 (0.296)	0.134 (0.340)	(<0.001)	0.189 (0.391)	0.227 (0.419)	(<0.001)	0.197 (0.398)	0.235 (0.424)	(<0.001)
<b>Secondary education</b>	0.718 (0.450)	0.653 (0.476)	(<0.001)	0.650 (0.477)	0.646 (0.478)	(0.336)	0.667 (0.471)	0.647 (0.477)	(<0.001)	0.653 (0.475)	0.630 (0.482)	(<0.001)
<b>University education</b>	0.239 (0.426)	0.289 (0.453)	(<0.001)	0.253 (0.434)	0.219 (0.413)	(<0.001)	0.143 (0.350)	0.124 (0.330)	(<0.001)	0.149 (0.356)	0.134 (0.340)	(<0.001)
<b>Entrepreneurial Opportunities</b>	0.227 (0.418)	0.191 (0.393)	(<0.001)	0.319 (0.466)	0.273 (0.445)	(<0.001)	0.531 (0.499)	0.471 (0.499)	(<0.001)	0.537 (0.498)	0.486 (0.499)	(<0.001)
<b>Entrepreneurial Skills</b>	0.560 (0.496)	0.390 (0.487)	(<0.001)	0.393 (0.488)	0.283 (0.450)	(<0.001)	0.640 (0.479)	0.537 (0.498)	(<0.001)	0.660 (0.473)	0.583 (0.492)	(<0.001)
<b>Peer effects</b>	0.441 (0.496)	0.339 (0.473)	(<0.001)	0.466 (0.498)	0.378 (0.485)	(<0.001)	0.502 (0.499)	0.394 (0.488)	(<0.001)	0.623 (0.484)	0.530 (0.499)	(<0.001)
<b>Entrepreneurship in Media</b>	0.425 (0.140)	0.424 (0.139)	(0.091)	0.649 (0.191)	0.654 (0.189)	(0.002)	0.588 (0.201)	0.586 (0.202)	(0.047)	0.553 (0.237)	0.564 (0.235)	(<0.001)
<b>Entrepreneurial spirit</b>	0.171 (1.294)	-0.190 (1.016)	(<0.001)	0.088 (1.125)	-0.075 (1.008)	(<0.001)	0.131 (1.212)	-0.129 (1.064)	(<0.001)	0.106 (1.199)	-0.108 (1.081)	(<0.001)
<b>Fear of failure</b>	0.378 (0.485)	0.472 (0.499)	(<0.001)	0.362 (0.480)	0.393 (0.488)	(<0.001)	0.285 (0.451)	0.352 (0.477)	(<0.001)	0.247 (0.431)	0.264 (0.411)	(<0.001)
<b>May entrepreneur in the future</b>	0.247 (0.431)	0.160 (0.366)	(<0.001)	0.229 (0.420)	0.191 (0.393)	(<0.001)	0.407 (0.491)	0.343 (0.478)	(<0.001)	0.441 (0.496)	0.393 (0.488)	(<0.001)
<b>Have helped other entrepreneurs</b>	0.125 (0.331)	0.065 (0.247)	(<0.001)	0.105 (0.306)	0.075 (0.216)	(<0.001)	0.169 (0.374)	0.118 (0.322)	(<0.001)	0.196 (0.397)	0.147 (0.354)	(<0.001)
<b>Have invested in others' business</b>	0.069 (0.253)	0.039 (0.193)	(<0.001)	0.051 (0.220)	0.036 (0.187)	(<0.001)	0.067 (0.250)	0.038 (0.191)	(<0.001)	0.135 (0.342)	0.090 (0.286)	(<0.001)
<b>Social norms</b>	-0.283 (1.283)	-0.279 (1.300)	(0.226)	-0.496 (1.418)	-0.432 (1.411)	(<0.001)	0.401 (1.640)	0.392 (1.645)	(0.278)	0.016 (1.807)	0.068 (1.771)	(<0.001)
<b>Desire for equity</b>	0.631 (0.183)	0.633 (0.186)	(0.048)	0.458 (0.245)	0.463 (0.248)	(0.076)	0.609 (0.187)	0.608 (0.188)	(0.857)	0.493 (0.186)	0.497 (0.182)	(<0.001)
<b>Social status of entrepreneurs</b>	0.517 (0.162)	0.520 (0.164)	(<0.001)	0.547 (0.176)	0.556 (0.174)	(<0.001)	0.689 (0.224)	0.688 (0.224)	(0.291)	0.634 (0.233)	0.642 (0.228)	(<0.001)
<b>Social status of business success</b>	0.542 (0.612)	0.539 (0.163)	(<0.001)	0.591 (0.170)	0.599 (0.168)	(<0.001)	0.631 (0.194)	0.629 (0.194)	(0.159)	0.652 (0.240)	0.658 (0.236)	(<0.001)
<b>Observations</b>	42,399	45,277		35,613	35,265		65,463	72,558		33,522	33,853	

Note: Statistics shown: means, and standard deviations in parentheses. The sample (GEM APS 2009 to 2014 data) is restricted to individuals between 18 and 64 years old, who are not retired or disabled. All variables are dummies, except variables Entrepreneurial spirit and Social norms, which are Principal Components (see Appendix A), and thus are normally distributed; and Age, which is measured in years. *P*-values of Kruskal-Wallis test for the differences in parentheses.

**Table 3. Linear Probability Model Estimates, by region**

VARIABLES	Eastern Europe		South-East Asia		Latin America		Africa	
	(1) Simple	(2) Controls	(3) Simple	(4) Controls	(5) Simple	(6) Controls	(7) Simple	(8) Controls
<b>Being male</b>	0.064*** (0.004)	0.010*** (0.003)	0.033** (0.012)	0.002 (0.008)	0.045*** (0.011)	-0.012** (0.004)	0.040*** (0.006)	-0.000 (0.006)
<b>Age</b>	- 0.001*** (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.001** (0.000)	0.000 (0.001)	-0.000 (0.001)
<b>Secondary ed.</b>	0.032*** (0.008)	0.002 (0.008)	0.015 (0.007)	-0.012 (0.008)	0.037** (0.014)	-0.014** (0.005)	0.026** (0.009)	-0.009 (0.007)
<b>University ed.</b>	0.076*** (0.011)	0.011 (0.009)	0.021** (0.006)	-0.028* (0.012)	0.084** (0.029)	-0.016 (0.011)	0.022 (0.018)	- (0.010)
<b>Entrep. Opportunities</b>		0.004 (0.003)		0.016** (0.005)		0.001 (0.007)		-0.001 (0.001)
<b>Entrep. Skills</b>		0.040*** (0.005)		0.065*** (0.016)		0.036*** (0.008)		0.059*** (0.011)
<b>Peer effects</b>		0.080*** (0.009)		0.074*** (0.014)		0.158*** (0.023)		0.128*** (0.018)
<b>Entrep. in Media</b>		0.038 (0.037)		0.049* (0.020)		0.067 (0.078)		0.142 (0.125)
<b>Social norms</b>		-0.006 (0.005)		-0.002 (0.002)		-0.011 (0.009)		-0.018 (0.013)
<b>Entrep. spirit</b>		0.106*** (0.004)		0.107*** (0.009)		0.154*** (0.006)		0.131*** (0.013)
<b>Constant</b>	0.058*** (0.014)	0.024 (0.019)	0.038 (0.033)	0.037 (0.024)	0.160*** (0.025)	0.048 (0.056)	0.047 (0.040)	0.055 (0.098)
<b>Observations</b>	87,676	87,676	70,878	70,878	138,021	138,021	67,375	67,375
<b>R-squared</b>	0.027	0.286	0.032	0.259	0.017	0.326	0.094	0.266

Note: Robust standard errors clustered at country level in parentheses. The sample (GEM APS 2009 to 2014 data) is restricted to individuals between 18 and 64 years old, who are not retired or disabled. Estimates include country and year fixed effects. Reference category for education: basic education. \*\*\*: significance at the 99%. \*\*: significance at the 95%. \*: significance at the 90%.

**Table 4. Cross-country estimates of gender**

	<b>Gender</b>	
	<b>Coefficient</b>	<b>(St. Error)</b>
<b>Eastern Europe</b>		
<b>Hungary</b>	0.009*	(0.005)
<b>Romania</b>	-0.009*	(0.005)
<b>Poland</b>	0.011	(0.007)
<b>Lithuania</b>	0.020***	(0.007)
<b>Latvia</b>	0.017***	(0.005)
<b>Croatia</b>	0.009*	(0.005)
<b>Slovenia</b>	0.016***	(0.004)
<b>Bosnia</b>	0.005	(0.006)
<b>Macedonia</b>	0.017***	(0.006)
<b>Slovakia</b>	0.012*	(0.006)
<b>Latin America</b>		
<b>Peru</b>	0.004	(0.007)
<b>Mexico</b>	-0.010*	(0.005)
<b>Argentina</b>	-0.003	(0.007)
<b>Brazil</b>	-0.029***	(0.005)
<b>Colombia</b>	-0.009	(0.006)
<b>Guatemala</b>	-0.015**	(0.007)
<b>Panama</b>	-0.014**	(0.006)
<b>Ecuador</b>	-0.025***	(0.008)
<b>Uruguay</b>	0.018***	(0.007)
<b>South-East Asia</b>		
<b>Malaysia</b>	0.001	(0.005)
<b>Thailand</b>	-0.033***	(0.007)
<b>S. Korea</b>	0.033***	(0.005)
<b>China</b>	0.003	(0.005)
<b>India</b>	0.003	(0.006)
<b>Taiwan</b>	0.013**	(0.005)
<b>Africa</b>		
<b>South Africa</b>	-0.001	(0.005)
<b>Algeria</b>	0.024***	(0.005)
<b>Tunisia</b>	0.027***	(0.006)
<b>Nigeria</b>	0.011	(0.012)
<b>Angola</b>	-0.004	(0.013)
<b>Uganda</b>	-0.019*	(0.011)
<b>Zambia</b>	-0.012	(0.012)
<b>Botswana</b>	-0.009	(0.010)

Note: Robust standard errors in parentheses. The sample (GEM APS 2009 to 2014 data) is restricted to individuals between 18 and 64 years old, who are not retired or disabled. Estimates include year fixed effects. Only parameters  $\beta_G$  are shown. Complete estimates are shown in Tables B1, B2, B3 and B4 in Appendix B. \*\*\*: significance at the 99%. \*\*: significance at the 95%. \*: significance at the 90%.

## Appendix A: Principal Components Analyses

**Table A1. Entrepreneurial spirit, by region**

VARIABLES	Eastern Europe Coefficient	South-East Asia Coefficient	Latin America Coefficient	Africa Coefficient
Fear of failure	-0.249	-0.231	-0.228	-0.139
May entrepreneur in the future	0.607	0.631	0.600	0.604
Have helped other entrepreneurs	0.624	0.610	0.612	0.547
Have invested in others' business	0.425	0.479	0.462	0.563
Observations	87,676	70,878	138,021	67,375
Eigenvalue	1.398	1.366	1.317	1.311
Proportion of explained variance	0.350	0.592	0.329	0.338

Note: The sample (GEM APS 2009 to 2014 data) is restricted to individuals between 18 and 64 years old, who are not retired or disabled. In the four cases, the following principal component would have an associated eigenvalue lesser than 1.

**Table A2. Social norms**

VARIABLES	Coefficient
Desire for equity	0.542
Social status of entrepreneurs	0.593
Social status of business success	0.595
Observations	363,950
Eigenvalue	2.527
Proportion of explained variance	0.842

Note: The sample (GEM APS 2009 to 2014 data) is restricted to individuals between 18 and 64 years old, who are not retired or disabled. The following principal factor would have an associated eigenvalue lesser than 1.

## Appendix B: Cross-country estimates, additional results

Table B1. Cross-country estimates, Eastern Europe

VARIABLES	Hungary (1)	Romania (2)	Poland (3)	Lithuania (4)	Latvia (5)	Croatia (6)	Slovenia (7)	Bosnia (8)	Macedonia (9)	Slovakia (10)
<b>Being male</b>	0.00878* (0.00523)	-0.00923* (0.00544)	0.0112 (0.00724)	0.0195*** (0.00741)	0.0170*** (0.00538)	0.00861* (0.00467)	0.0162*** (0.00382)	0.00483 (0.00580)	0.0166*** (0.00569)	0.0119* (0.00639)
<b>Age</b>	0.000885*** (0.000214)	0.000109 (0.000235)	0.000714** (0.000280)	-0.000303 (0.000286)	-0.000319 (0.000195)	0.000563*** (0.000182)	0.000292* (0.000149)	9.58e-05 (0.000236)	0.000420** (0.000207)	-0.000369 (0.000244)
<b>Secondary ed.</b>	0.0225*** (0.00569)	-0.00669 (0.0141)	-0.00645 (0.0184)	0.0553 (0.0343)	0.00191 (0.0168)	0.0256*** (0.00727)	0.00351 (0.00665)	-0.0203 (0.0151)	-0.0124* (0.00709)	0.00143 (0.0220)
<b>University ed.</b>	0.0449*** (0.00798)	0.00523 (0.0155)	-0.00785 (0.0194)	0.0615* (0.0346)	0.00425 (0.0173)	0.0266*** (0.00933)	0.00783 (0.00753)	-0.0233 (0.0181)	0.000870 (0.00911)	0.0208 (0.0229)
<b>Entrep. Opportunities</b>	0.0122 (0.00874)	-0.00679 (0.00802)	-0.0138 (0.00968)	0.0148 (0.0106)	0.000200 (0.00724)	0.00483 (0.00818)	0.0222*** (0.00709)	0.00667 (0.00864)	0.00818 (0.00706)	-0.00205 (0.00915)
<b>Entrep. Skills</b>	0.0578*** (0.00623)	0.0375*** (0.00660)	0.0602*** (0.00685)	0.0322*** (0.00914)	0.0501*** (0.00582)	0.0289*** (0.00482)	0.0406*** (0.00388)	0.0170*** (0.00586)	0.0218*** (0.00528)	0.0434*** (0.00633)
<b>Peer effects</b>	0.0683*** (0.00632)	0.102*** (0.00674)	0.0879*** (0.00736)	0.116*** (0.00858)	0.121*** (0.00624)	0.0710*** (0.00541)	0.0430*** (0.00387)	0.0622*** (0.00621)	0.0766*** (0.00620)	0.0760*** (0.00595)
<b>Entrep. spirit</b>	0.0868*** (0.00412)	0.119*** (0.00432)	0.111*** (0.00539)	0.103*** (0.00497)	0.121*** (0.00324)	0.113*** (0.00383)	0.0849*** (0.00447)	0.108*** (0.00444)	0.0827*** (0.00429)	0.115*** (0.00396)
<b>Constant</b>	0.00386 (0.0109)	0.0591*** (0.0167)	0.0124 (0.0223)	-0.0372 (0.0362)	0.0497*** (0.0191)	-0.00593 (0.0129)	0.0134 (0.00926)	0.0374* (0.0207)	0.0102 (0.0118)	0.0606** (0.0248)
<b>Observations</b>	10,405	8,995	7,039	5,506	11,088	9,463	12,037	8,733	7,146	7,264
<b>R-squared</b>	0.203	0.335	0.279	0.297	0.348	0.350	0.189	0.314	0.219	0.323

Note: Robust standard errors clustered at country level in parentheses. The sample (GEM APS 2009 to 2014 data) is restricted to individuals between 18 and 64 years old, who are not retired or disabled. Estimates include year fixed effects. Reference category for education: basic education. \*\*\*: significance at the 99%. \*\*: significance at the 95%. \*: significance at the 90%.

**Table B2. Cross-country estimates, Latin America**

	Peru	Mexico	Argentina	Brazil	Colombia	Guatemala	Panama	Ecuador	Uruguay
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>Being male</b>	0.00393 (0.00706)	-0.00964* (0.00539)	-0.00296 (0.00688)	-0.0293*** (0.00523)	-0.00928 (0.00618)	-0.0148** (0.00714)	-0.0143** (0.00580)	-0.0248*** (0.00774)	0.0182*** (0.00668)
<b>Age</b>	0.000459 (0.000283)	0.000398* (0.000220)	0.000936*** (0.000260)	-0.000208 (0.000213)	0.000881*** (0.000236)	0.00139*** (0.000288)	-5.04e-05 (0.000242)	0.00102*** (0.000297)	-7.99e-05 (0.000244)
<b>Secondary ed.</b>	-0.0369*** (0.00936)	0.0221*** (0.00792)	-0.0183* (0.0102)	-0.0297*** (0.00625)	-0.00976 (0.00836)	-0.00785 (0.00767)	0.00943 (0.00963)	-0.0105 (0.00868)	-0.0208* (0.0106)
<b>University ed.</b>	-0.0666*** (0.0133)	0.00714 (0.0109)	-0.0252* (0.0132)	-0.0412*** (0.00897)	0.00670 (0.0104)	-0.0383** (0.0191)	-0.00484 (0.0116)	-0.0265** (0.0132)	-0.00678 (0.0154)
<b>Entrep. Opportunities</b>	0.0127 (0.00772)	0.0183*** (0.00585)	0.000773 (0.00773)	0.0154*** (0.00540)	-0.0159** (0.00631)	-0.00698 (0.00770)	0.0316*** (0.00746)	0.000832 (0.00851)	-0.00552 (0.00719)
<b>Entrep. Skills</b>	0.0355*** (0.00726)	0.00372 (0.00543)	0.0322*** (0.00701)	0.0736*** (0.00561)	0.0357*** (0.00623)	0.0109 (0.00772)	0.0200*** (0.00664)	0.0506*** (0.00838)	0.0295*** (0.00638)
<b>Peer effects</b>	0.159*** (0.00702)	0.105*** (0.00497)	0.170*** (0.00844)	0.113*** (0.00587)	0.236*** (0.00778)	0.108*** (0.00760)	0.106*** (0.00678)	0.194*** (0.00945)	0.136*** (0.00721)
<b>Entrep. spirit</b>	0.170*** (0.00355)	0.165*** (0.00319)	0.160*** (0.00457)	0.117*** (0.00356)	0.141*** (0.00328)	0.177*** (0.00416)	0.184*** (0.00431)	0.154*** (0.00373)	0.144*** (0.00419)
<b>Constant</b>	0.110*** (0.0160)	0.0284** (0.0142)	0.119*** (0.0180)	0.181*** (0.0153)	0.0319** (0.0159)	0.131*** (0.0159)	0.121*** (0.0144)	0.0817*** (0.0162)	0.107*** (0.0173)
<b>Observations</b>	11,842	14,322	10,376	26,242	35,789	10,826	9,555	9,861	9,208
<b>R-squared</b>	0.379	0.404	0.364	0.147	0.378	0.310	0.402	0.340	0.367

Note: Robust standard errors clustered at country level in parentheses. The sample (GEM APS 2009 to 2014 data) is restricted to individuals between 18 and 64 years old, who are not retired or disabled. Estimates include year fixed effects. Reference category for education: basic education. \*\*\*: significance at the 99%. \*\*: significance at the 95%. \*: significance at the 90%.

**Table B3. Cross-country estimates, South-East Asia**

	Malaysia	Thailand	S. Korea	China	India	Taiwan
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
<b>Being male</b>	0.00145 (0.00463)	-0.0328*** (0.00685)	0.0325*** (0.00454)	0.00297 (0.00495)	0.00248 (0.00561)	0.0127** (0.00501)
<b>Age</b>	0.000438** (0.000200)	-0.000191 (0.000290)	0.00100*** (0.000169)	-0.000164 (0.000218)	0.000482** (0.000237)	3.08e-05 (0.000218)
<b>Secondary ed.</b>	0.000220 (0.00681)	-0.0235** (0.00969)	-0.00102 (0.00883)	-0.0265*** (0.00851)	0.0202*** (0.00734)	-0.0343*** (0.0112)
<b>University ed.</b>	0.00452 (0.0122)	-0.0617*** (0.0103)	-0.00171 (0.00995)	-0.0523*** (0.0117)	0.00386 (0.00827)	-0.0355*** (0.0117)
<b>Entrep. Opportunities</b>	0.00850 (0.00581)	0.0123 (0.00765)	0.0604*** (0.0114)	0.0126** (0.00639)	0.0196** (0.00766)	0.00312 (0.00592)
<b>Entrep. Skills</b>	0.0517*** (0.00708)	0.0436*** (0.00759)	0.0671*** (0.00767)	0.0963*** (0.00639)	0.00186 (0.00607)	0.101*** (0.00799)
<b>Peer effects</b>	0.0243*** (0.00441)	0.120*** (0.00821)	0.0571*** (0.00629)	0.0873*** (0.00491)	0.0794*** (0.00748)	0.0653*** (0.00547)
<b>Entrep. spirit</b>	0.112*** (0.00591)	0.134*** (0.00369)	0.0815*** (0.00486)	0.0977*** (0.00254)	0.145*** (0.00518)	0.0839*** (0.00349)
<b>Constant</b>	0.0557*** (0.0140)	0.146*** (0.0177)	0.0134 (0.0139)	0.137*** (0.0142)	0.0310** (0.0127)	0.0435*** (0.0167)
<b>Observations</b>	10,996	9,879	11,730	19,955	8,901	9,417
<b>R-squared</b>	0.248	0.282	0.181	0.222	0.397	0.249

Note: Robust standard errors clustered at country level in parentheses. The sample (GEM APS 2009 to 2014 data) is restricted to individuals between 18 and 64 years old, who are not retired or disabled. Estimates include year fixed effects. Reference category for education: basic education. \*\*\*: significance at the 99%. \*\*: significance at the 95%. \*: significance at the 90%.

**Table B4. Cross-country estimates, Africa**

	South Africa	Algeria	Tunisia	Nigeria	Angola	Uganda	Zambia	Botswana
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Being male</b>	-0.000750 (0.00463)	0.0242*** (0.00512)	0.0273*** (0.00608)	0.0105 (0.0117)	-0.00387 (0.0127)	-0.0191* (0.0112)	-0.0117 (0.0121)	-0.00944 (0.00958)
<b>Age</b>	0.000726*** (0.000191)	-0.000349 (0.000229)	8.02e-05 (0.000251)	-0.00101* (0.000562)	0.00134** (0.000586)	-0.00322*** (0.000455)	-3.70e-06 (0.000534)	0.00168*** (0.000485)
<b>Secondary ed.</b>	0.00979 (0.00754)	-0.0215*** (0.00751)	0.00211 (0.00824)	0.0177 (0.0155)	0.00305 (0.0192)	-0.0247* (0.0127)	-0.0211 (0.0153)	-0.0101 (0.0160)
<b>University ed.</b>	0.0229 (0.0141)	-0.0459*** (0.00846)	-0.0141 (0.00882)	-0.0558*** (0.0202)	0.0305 (0.0292)	-0.0778*** (0.0286)	-0.0819*** (0.0228)	-0.0531*** (0.0195)
<b>Entrep. Opportunities</b>	-0.00742 (0.00600)	0.00951 (0.00602)	0.0147* (0.00812)	0.0358** (0.0163)	0.0110 (0.0140)	-0.0114 (0.0133)	-0.0158 (0.0140)	-0.00844 (0.0100)
<b>Entrep. Skills</b>	0.0543*** (0.00589)	0.0293*** (0.00536)	0.0221*** (0.00557)	0.0988*** (0.0162)	0.0830*** (0.0136)	0.0830*** (0.0148)	0.0289* (0.0150)	0.0563*** (0.0103)
<b>Peer effects</b>	0.0833*** (0.00579)	0.0917*** (0.00463)	0.0719*** (0.00671)	0.201*** (0.0139)	0.127*** (0.0132)	0.118*** (0.0120)	0.206*** (0.0140)	0.218*** (0.0101)
<b>Entrep. spirit</b>	0.190*** (0.00564)	0.111*** (0.00388)	0.0909*** (0.00537)	0.144*** (0.00535)	0.111*** (0.00524)	0.0864*** (0.00508)	0.173*** (0.00486)	0.166*** (0.00492)
<b>Constant</b>	0.122*** (0.0124)	0.160*** (0.0139)	0.0881*** (0.0138)	0.118*** (0.0287)	0.0831*** (0.0267)	0.298*** (0.0222)	0.0729*** (0.0250)	-0.00471 (0.0264)
<b>Observations</b>	13,041	11,937	7,588	7,155	6,426	9,009	6,006	6,213
<b>R-squared</b>	0.348	0.220	0.135	0.175	0.201	0.094	0.275	0.329

Note: Robust standard errors clustered at country level in parentheses. The sample (GEM APS 2009 to 2014 data) is restricted to individuals between 18 and 64 years old, who are not retired or disabled. Estimates include year fixed effects. Reference category for education: basic education. \*\*\*: significance at the 99%. \*\*: significance at the 95%. \*: significance at the 90%.