GENDER ENTREPRENEURSHIP IN LATIN AMERICA: DOES THE INSTITUTIONAL SYSTEM MATTER?

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ABSTRACT

This study attempts to uncover the institutional determinants of female entrepreneurship in a set of eight Latin American countries. Following the institutional system classification in the literature, we grouped the set of countries into three categories: State-Led, Emerging Liberal Market, and Family Led. We then split the data panel into two different groups: Argentina, Bolivia, Ecuador, and Venezuela, which are mostly State-Led; the other group includes Brazil, Chile, Colombia, Mexico, and Peru, which are either Family Led or Emerging Liberal Market Oriented where the degree of State intervention in the economy is lower. Our research investigated these institutional determinants of female entrepreneurship using a set of socioeconomic, cognitive, and macroeconomic variables. Our findings offer a new perspective on gender entrepreneurship in Latin America, considering internal and external factor. The first considers institutional varieties and the latter macroeconomic effects. This is relevant in order to find relevant incentives of entrepreneurship by gender.

Keywords: Entrepreneurship, Institutional system, Latin America, Macroeconomic factors, Panel data.

INTRODUCTION

Entrepreneurship is an activity characterized by the initiation, maintenance, and development of a profit-oriented business (Cole, 1968). Drucker (1985) stresses that the entrepreneur is mostly an enterpriser who identifies and speculates the moments of change, transforming them into business opportunities. Entrepreneurship is then an engine of growth for all different social classes (Karlsson *et al.*, 2004) and contributes to economic growth by introducing innovation, enhancing rivalry, and creating competition (Wong *et al.*, 2005).

Past research has addressed different dimensions of entrepreneurship. Hessel, van Gelderen, & Thurik (2008) studied socioeconomic, aspirational, and motivational variables. Carree, van Stel, Thurik, & Wennekers (2002) analyzed the relationship between economic development and business ownership. Acs (2008) investigated the reasons to become an entrepreneur. In our paper, we will explore the determinants of female entrepreneurship[1].

In addition, Entrepreneurship in Latin America has attracted greater attention from scholars. Acs, & Amorós (2008) demonstrated that countries in this region have been following different competitiveness paths and strategies. These differences may explain the heterogeneous

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[1] Authors like Ataro (2020) considers copeness stress, where gender matters

entrepreneurial dynamics in Latin America. Institutional factors and macroeconomic policies such as trade liberalization and openness shape entrepreneurship activity as well (Krueger, 1998). We will control some institutional varieties in the sample of Latin-American countries.

Gender is a significant dimension within the field of entrepreneurship (Lin *et al.*, 2018) for many reasons (Nyakudya *et al.*, 2018). In Latin America, entrepreneurship has mostly been a male phenomenon. This being so, there is a need for a better understanding of the difficulties encountered by women at different levels (de la O Cordero & Pulido, 2019). These difficulties, namely institutional restrictions such as entry market regulations, that women have to tackle to initiate a business (Kariv, 2013) in this region are evidence of a significant gender gap (Klapper *et al.*, 2006).

Our paper attempts to contribute empirically to extant knowledge on entrepreneurship by exploring determinants of gender within the context of two different Latin American institutional settings. We use entrepreneurial intention data from the Global Entrepreneurship Monitor 2009-2015. We do not have more recent and completed data[2]. However, for our study, it is enough to perform the analysis over this time.

Theoretical Review

As referred to by Santos, Marques, & Ferreira (2018), gender studies in the field of entrepreneurship started in the mid-1970s with both a psychological and a sociological perspective on the increasing phenomenon of female entrepreneurship.

Latin America displays one of the highest rates of female entrepreneurship in the world despite the very low historical participation of women in the economy. Female entrepreneurship in Latin America is more 'necessity-driven' than 'opportunity-driven', which leads to a smaller than expected impact on the macroeconomic performance of their countries. And when market competitiveness increases, females tend to abandon their ventures and take a formal jobs in the labor market. Female entrepreneurship in the region is often seen as a supplementary activity, not the main one (Terjesen & Amorós, 2010).

Languía, García-Ael, Wach, & Moriano (2019) assert that in factor-driven economies such as Latin America, the level of female entrepreneurship is the highest in the world, up to three times higher than in innovation-driven economies such as Europe and the US.

In this region, female entrepreneurs are at least as likely to apply for credit as men although the cost of loans is higher for women, contradicting traditional assumptions from other developing regions that women are more risk-averse and less financially literate than men (Bönte & Piegeler, 2013).

Returns from credit are also comparable although women receive smaller amounts of credit. Entrepreneurial ventures launched by women are usually smaller than those founded by men, regardless of the industry. Female entrepreneurship accounted for a little more than one-third of the total number of ventures (37%). In Latin America, women-owned businesses perform significantly worse than those owned by men in terms of sales growth and employment growth. Gender gaps in size, growth, and efficiency are more significant here than in any other comparable region. On average, women-owned firms are more than 3 years younger than

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[2] The last year of collection is 2016. We are interested in the effect of gender entrepreneurship during the boom of commodities period

men's, and female owners are also younger than their male counterparts. 'Food preparation' (about a quarter of all options) is the industry most chosen by women. Female entrepreneurs are also overrepresented in the retail trade, in the garments sector, and the production of machinery and equipment, and tend to focus on a limited set of business activities (Bardasi *et al.*, 2011).

In Latin America, the gender gap could be as high as 13% and differences in observable characteristics could explain as much as 38% of it. In terms of personality traits, the 'need for achievement' influences women more than men. This gap is mainly explained by the factors 'tolerance to risk', and 'income'. The factors 'work satisfaction', 'parent business ownership', and 'autonomy' have a weaker effect. The education gap between men and women is also significant and if females were as educated as males, their odds of becoming entrepreneurs would decrease since higher education is negatively associated with a willingness to take the entrepreneurial option (Bernat *et al.*, 2017).

Wu, Li, & Zhang (2019), using data from 28 countries including nine from Latin America, highlight that the combination of poor female entrepreneurial cognitions and high initial funding requirements is an important and powerful component in explaining the issue of the entrepreneurial gender gap.

Because of the prevalence of 'necessity-driven' entrepreneurship, in Latin America, there are no significant differences between 'entrepreneurial perception' and 'entrepreneurial intention'. This increases the appetite to take the entrepreneurial option, making it a common decision with 'perceived self-efficacy' as the major antecedent (Guzmán-Alfonso & Guzmán-Cuevas, 2012).

Gender entrepreneurial gaps have roots in both formal – laws and regulations – and informal – traditions and attitudes – and societal institutions. These institutions act in the sense of maintaining, at least in developing countries, the predominance of 'necessity-driven' entrepreneurship among female entrepreneurs leaving 'opportunity-driven' entrepreneurship for men (Warnecke, 2013).

For Cuberes, Priyanka, & Teignier (2019), the explanation for this lower value-added orientation resides in the institutional discrimination against women as well as infirm and gender characteristics.

Gender gaps in entrepreneurship have been widely confirmed in all types of contexts, including the brand-new phenomenon of migrant entrepreneurship. Institutional factors were proven to play a significant role in these gender gaps (Brieger & Gielnik, 2021).

The political system influences the institutional environment and setting in a country, influencing in turn the main forces that drive female and male entrepreneurship. Fainshmidt, Judge, Aguilera, & Smith (2018) presented a very influential political system classification for work in institutional systems which highlights that advanced economies have varieties of capitalism classification (VOC). The VOC typology splits the advanced economies into liberal economies and coordinated market economies based on the allocative mechanism of resources, profits, and risk. However, this classification is not enough to characterize the increasingly significant group of newly developed, emerging, and developing economies.

Therefore, Fainshmidt *et al.* (2018) consider varieties of institutional level classification among groups of emerging and advanced economies according to the role of the State, the role of financial markets, the role of human capital, and the role of social capital, and corporate

governance. In the latter, the degree of family influence is relevant as, too, is ownership concentration.

Carney, & Witt (2014) consider the role of the State as relevant in ASEAN countries. This study considers this variable key for economic classification. The market orientation of a State's government could assume the following positions: regulatory, welfare, developmental, and/or predatory.

Empirical Strategy

To refine the extant analysis, we will consider two groups of institutional settings in our work: State-Led economies and Emerging Led economies. Emerging Led includes also Family Led countries since they have less government intervention than State-Led countries. We will add Bolivia and Ecuador to Argentina and Venezuela in the State-Led group since we argue that they share the main attributes that characterize this group. In the Emerging Led group, we will consider Brazil, Chile, Colombia, Mexico, and Peru. These are the Family Led and Emerging Led countries that share relevant similarities regarding State control and openness. Fainshmidt *et al.* (2018) consider Chile as Emerging Led and the rest as Family Led. We will merge Family Led economies and Emerging Led economies into one single group since we argue that they have significant commonalities as far as our research is concerned. The following figures show the similarities described in terms of GDP growth and inflation rate:
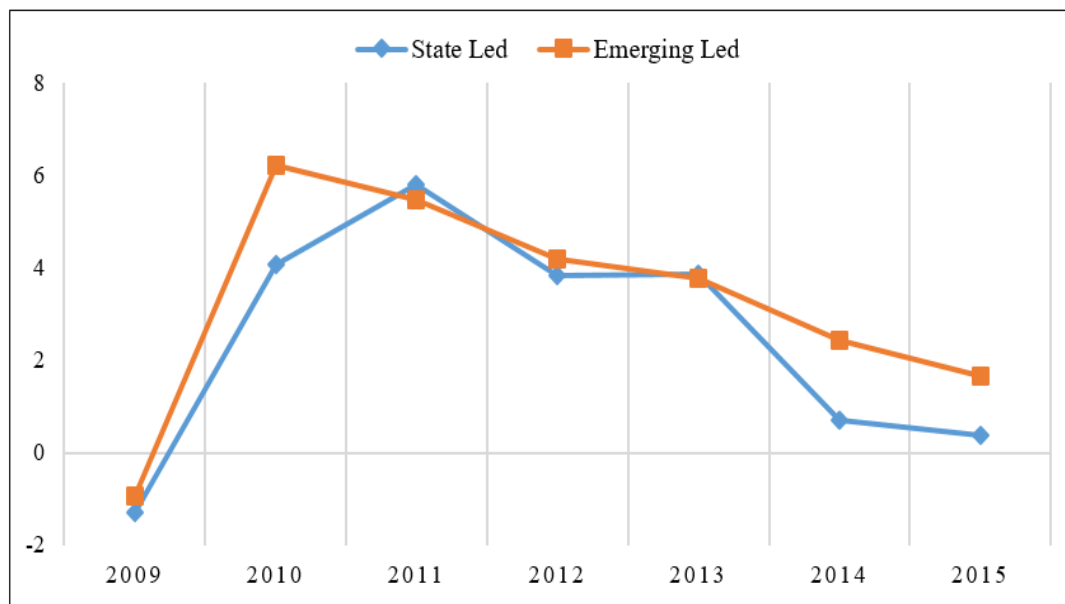

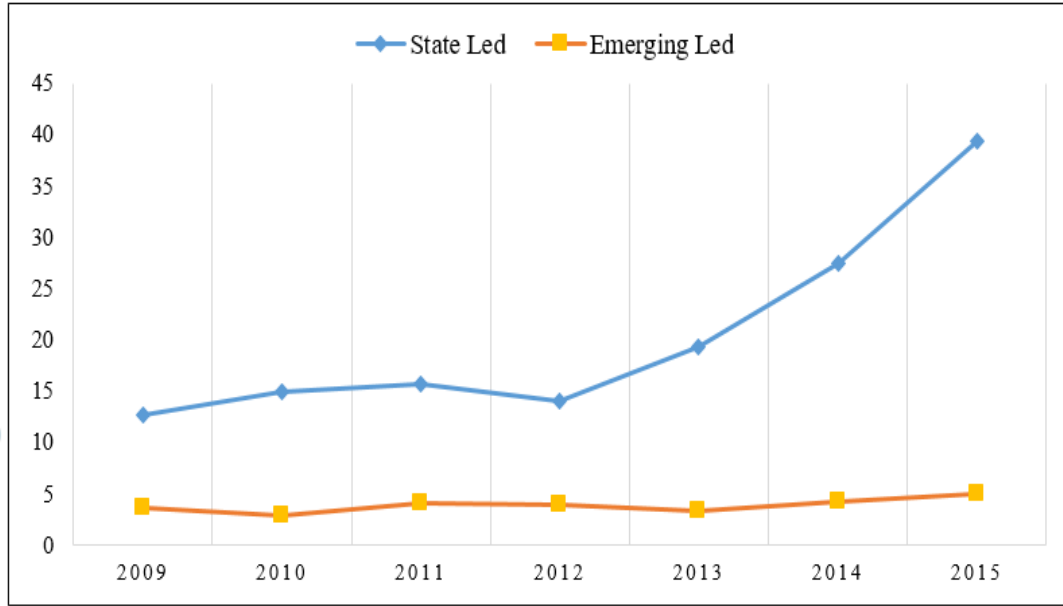**Figure 1.** GDP growth (annual %)
Source: IMF

Figure 2. Inflation rate (annual %)
Source: IMF

Our area of interest is the Latin-American region. de la O Cordero & Pulido (2019) recognize that further research must be done on the determinants of female entrepreneurship in Latin America because, in this region, entrepreneurship is highly gendered. Aboal & Veneri (2016) show that when Latin American entrepreneurs are compared to their US counterparts, significant differences emerge.

Social psychology postulates that weaker (more uncertain) environments favor the expression of personality traits type E (older, more educated, and more likely to have parents that are/were entrepreneurs and more financial links than any other category). Female Latin-American entrepreneurs have distinct influences in each country and their impact is contingent on the kind of agent they assume (Wennekers *et al.*, 2002).

In the vast majority of the world, the rate of total entrepreneurial activity (TEA) is lower for women than for men (Kelley *et al.*, 2013). Education (Menzies *et al.*, 2004), access to credit (Scherr *et al.*, 1993), social networks, industry chosen, internal organization structure (Greene *et al.*, 2003), and motherhood (Wu *et al.*, 2019) are among the factors most quoted in explanation. We may classify the determinants of entrepreneurship as follows: Demographics (Age, Size of the family, and Education); Socio-Capital (Business Angel, and Network Connection); Macroeconomic (Business Expectation, and Inflation); and Cognitive (Fear to Fail). Some macroeconomic determinants overlap with cognitive determinants (Arafat *et al.*, 2018).

Cognitive determinants are stronger in women than in men (Caliendo *et al.*, 2014). Women are critical to a country's economic growth and development. Therefore, concerning classifying emerging economies according to the institutional level, variety is relevant.

The 'constraint-driven gap' states that cultural norms are an obstacle to the development of women in a world dominated by men, which would lead to a highly selective process whereby only a particular group of females would become entrepreneurs. In contrast, the 'preference-

driven gap' highlights motivations as the key gender generating a difference in entrepreneurship. For that reason, women are more likely to operate in less productive markets and smaller-scale ventures (Bardasi *et al.*, 2011).

The literature also claims that women more often mention push factors, such as economic necessity, than pull factors concerning starting up a new business (Aidis *et al.*, 2007). In Latin American entrepreneurial activity, there is a strong influence of parental entrepreneurship, called the 'kitchen table effect'. The 'need for achievement' is the personality trait that most influences female entrepreneurship in the region, followed by 'autonomy'. The most cited factors affecting the gender gap are 'tolerance to risk' and 'income' and, to a lesser extent, 'work satisfaction' and 'kitchen table effect'. In this region, women are half as likely to become entrepreneurs as men (Bernat *et al.*, 2017).

We need to find the determinants of female entrepreneurship and TEA is the endogenous variable to be tested. The selection of independent variables is explained below. The PANEL DATA analysis considers respondents (individuals) across countries and under different periods.

The basic model to face our empirical strategy is as follows:

$$Y_{ist=}\alpha + \beta X_{ist} + \gamma_{st}Z + \varepsilon_{ist} \qquad (1)$$

Were Y_{ist} is the endogenous variable under assessment for time "t", individual "i", and the region "s". The independent and control variable is included in the set of variables X for the same time, individual, and region. There is also an error term that can assume the properties of white noise. The Panel Data analysis can assume a fixed effect for the intercept "α", which means that there is some influence from the individual effect which is captured in the intercept. Panel Data also considers random effect which adjusts for the serial correlation which is induced by the unobserved time constant attributes.

Panel Data consider a Pool that does not include a fixed or random effect. This is the technique that we must consider since there is no random effect. We used Random Effect estimation instead of Pool or Fixed.

The coefficient "β" has to be tested for significance and sign. The null hypothesis of significance should be considered under three different regular kinds of significance levels, the latter of which should allow us to conduct the analysis of our hypothesis in the paper. We may also incorporate a variable Z which captures the time effect in the estimation. This variable changes across regions "s" and time "t".

Panel or Longitudinal studies are often used in social science, medicine, and psychology. The latter assessment permits the study of rapid fluctuations in behaviors, perceptions, and emotions across time. The time effect allows the latter analysis to be taken into account. Panel or Longitudinal studies are used in psychology to study developmental trends across individuals. In a social science like sociology, they are used to study particular events throughout any particular time. In business, they are used like consumer research and political studies to identify any structural change in consumer trends. The regular OLS, or cross-sectional, studies different individuals with the same characteristics.

Since longitudinal studies capture effects better than cross-sectional studies do, they may be applied to several fields as we have mentioned above. The null hypothesis under this technique

can perform a different hypothesis for every single field already mentioned. In advertising, the technique of Panel Data or Longitudinal studies is used to identify the changes that advertising has produced in the attitudes and behaviors of the potential target surveyed. Longitudinal studies allow social scientists to distinguish between short and long-term phenomena, such as income distribution or poverty.

Longitudinal studies are observational and empirical since they observe the state of the world. Some experts argue that the Panel Data technique may have less power to detect causal relationships than experiments. However, Panel Data is more powerful than cross-sectional analysis because the analysis considers observations at the individual level. Among the disadvantages of a longitudinal study is that it is time-consuming. However, the size of our dataset is not necessarily time-consuming or difficult to estimate (Green, 2018).

Data

We will estimate and proceed with the analysis by performing a Panel Data Analysis. The available GEM data has different individuals over the time between 2009-2015. Although we do not have more recent data, this time is adequate for the research assessment since it is the period of the commodities boom in the region. The panel data has seven periods of time, five countries, and 1628 respondents, which makes more than 57,000 observations in total. As previously mentioned, the time under analysis allows us to establish a reliable inference.

The endogenous variable is TEA - Total Entrepreneurship Activity - for each individual in the survey. Total early-stage Entrepreneurial Activity (TEA) is the percentage of people among a population between 18-and 64 years old that is either a nascent entrepreneur or owner of a business. It is assessed through expert interviews in countries worldwide, with roughly 200,000 being interviewed per year, and it aims to measure two main dimensions: entrepreneurial behavior and attitudes of respondents (e.g. ownership of young firms, intentions to become an entrepreneur), and the national context (e.g. tax system, macroeconomic environment). It is published by the Global Entrepreneurship Monitor (GEM).

The data used for the GEM is collected from two large surveys. The first is the Adult Population Survey (APS) and the second is the National Expert Survey (NES). The APS surveys around 2000 adults of each country covered by the GEM and covers the entrepreneurial endeavors of the country's population. The NES interviews a group of business and academic experts in each country with a broad range of specialties for concrete measures of a country's institutional factors. Since we need to account for individual entrepreneurship, we have to consider the APS survey. Each year, the GEM assembles a survey of a minimum of 2000 adults and at least 36 experts from a country of interest to produce annual reports. In the 2014 report, 206,000 adults from all around the world were interviewed. The survey is made anonymously and involved 3,936 national experts. Each report is different from another despite having a common section on the global perspective on entrepreneurship for the year. The survey varies according to the population and the economic diversity of every single country.

We will estimate the coefficients of equation 1 above using the Generalized Methods of Moments Estimator (GMM)[3]. In econometrics and statistics, the generalized method of moments (GMM)

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[3] GMM is a robust method that avoids biases in the estimation. In addition, we have run some robustness test **(Table 3)**. Since our data does not have variability of periods, we suspect that we may estimate under OLS or Random. We

is a generic method for estimating parameters for different statistical models and is usually applied for semiparametric models where the parameter of interest is finite-dimensional, and the data distribution function may not be known. In such instances, estimators like maximum likelihood are less efficient, which is mainly the case here.

The method requires that a certain number of conditions hold for the model. The GMM method then minimizes errors and is considered a special case of minimum-distance estimation.

The properties of GMM estimators are known to be consistent, asymptotically normal, and efficient. GMM was introduced by Lars Peter Hansen under the name of generalization of the method of moments.

The property of consistency is a statistical property that states that with a sufficient number of observations, the estimator will converge asymptotically in probability to the true value of the parameter. The property of asymptotic normality is also useful since it allows us to construct confidence bands for the estimator, and conduct a significance test of the parameters. Therefore, the GMM estimation widely used in the empirical literature will be used to estimate the parameters of our Panel Data model.

Thus, the model that we propose for our Data is as follows:

$$TEA_{ij} = \alpha.$$
$$+\beta_1 (DemographicFactors)_{ij} + \beta_2 (SocioCapitalFactors)_{ij} + \beta_3 (CognitiveFactors)_{ij} \tag{2}$$
$$+ \beta_4 (MacroeconomicFactors)_{ij} + \varepsilon_{ij}$$

Where:

TEA_{ij}: Total Entrepreneurship Activity for individual "i" in-country "j".

Demographic Factors$_{ij}$: Age, Size of the family, Income and Education "i" in-country "j".

Socio-Capital$_{ij}$: Business Angels and Network Connections "i" in-country "j".

Macroeconomic$_{ij}$: Business Expectations and Inflation "i" in-country "j".

Cognitive$_{ij:}$ Fear to Fail "i" in-country "j".

The previous discussion allows us to set the sign for the set of demographic factors as a positive one concerning TEA. In addition, all the described set of socio capital factors are expected to have a positive relationship as well. Cognitive factors[4] must be negative but we are not sure about the Macroeconomic sign. Aboal, & Veneri (2016) claim that entrepreneurship and the environment may be heterogeneous across countries. The Macroeconomic factor may allow us to capture any time effect in the estimation. As we have mentioned, GMM estimation is performed in the econometric panel data analysis.

The variables described above vary according to the country "j", individual "i" and over the seven years "t".

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performed Breush-Pagan-Lagrange Multiplier and reject null hypothesis so random effect is appropriate for our sample. We have weighted the sample to reflect the whole population better.

[4] Wang *et al.* (2020) shows the relevance of this cognitive factor for a data set that consider leaders and subordinates in China.

Table 1. Descriptive Statistics

Variables	Description	Mean	Standard Deviation	Minimum	Maximum
TEA Female	Total early-stage Entrepreneurial Activity (TEA) for Female	0.1944	0.40	0	1
GENDER	Gender of the Respondent	1.53	0.50	1	2
GEMHHINC	Income of Respondent in 3 categories	Qualitative	Qualitative	Qualitative	Qualitative
AGE	Age	39.39	14.69	18	99
BUSANG	Any Business Angel in the last three years	0.07	0.26	0	1
EDUCATION	Education Level	2.82	1.43	0	6
FEARFAIL	Fear to Fail in the Business	0.34	0.47	0	1
NETWORK	Any Business Networking	0.39	0.49	0	1
HHSIZE	Number of Home Members	3.97	2.11	0	89
INFLATION	Inflation of the country	6.14	7.32	0.35	38.5
EXPECTATION	Expectations to the business times GDP growth of the respective country	2.10	2.62	-5.92	10.13

Elaboration: Authors

Table 1 shows some statistics of the variables mentioned in the sprecification model. The next section presents the results of our panel data model. The longitudinal analysis permits us to infer differences across different countries. The same panel data can be estimated for emerging and state-led countries. From this, we can verify whether there is any heterogeneity within the latter set of countries. A previous section of this paper has described the difference between the latter classification.

RESULTS AND DISCUSSION

Figures 3-5 below show some preliminary results regarding the house income gap gender. Among the upper levels of income, there is an income gap between genders. Among the low-income levels, the situation is the opposite but this gap shortens as the income level increases. These results were extracted from the Global Entrepreneurship Monitor (GEM) data for the period 2009-2015 for a set of countries in the Latin American Region. The latter gap pattern is replicated in both groups of countries: Emerging Led countries and State-Led countries. Therefore, we can infer that there is some income gap inequality by gender in the whole of the Latin-American region. This gap, which is repeated regardless of the type of institutional system, is in line with the previously discussed results of Kariv (2013), Kelley *et al.* (2013), and Aboal & Veneri (2016).
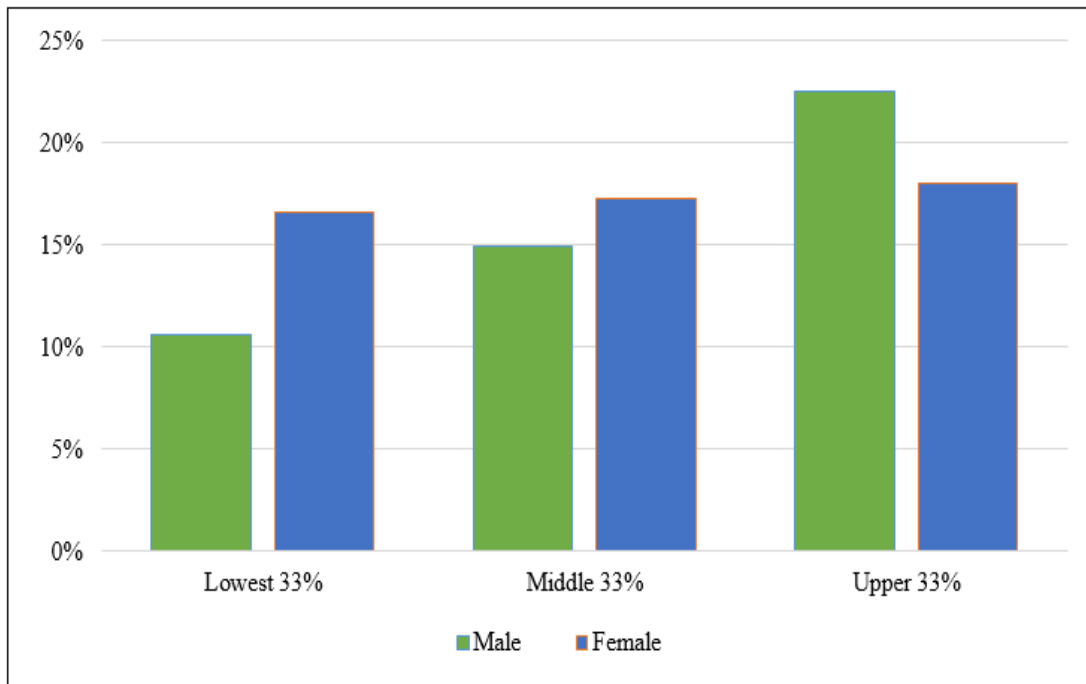
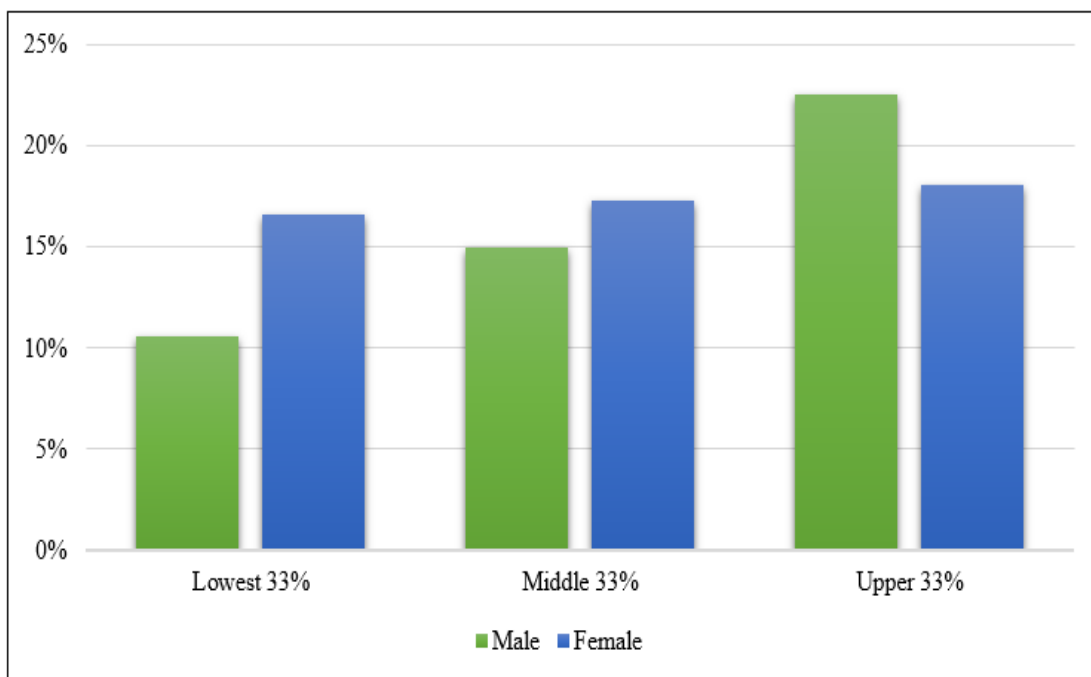**Figure 3.** Household Income by gender (% of Total)
Source: GEM

Figure 4. Household Income by gender (% of Total) Emerging Led Instituions
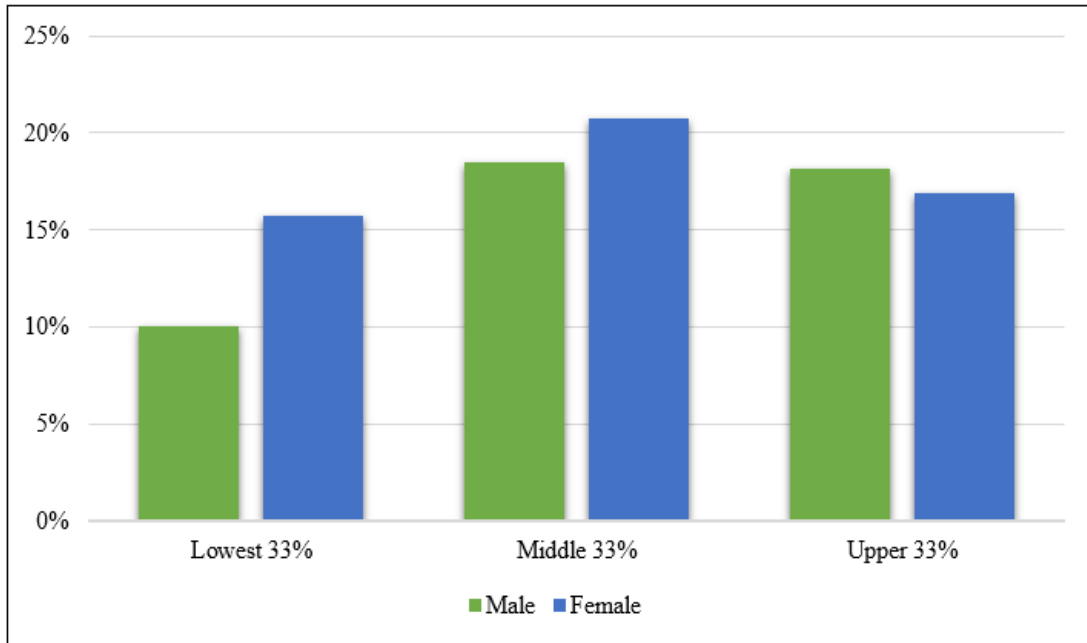Source: GEM

Figure 5. Household Income by gender (% of Total) State Led Institutions
Source: GEM

Concerning a woman deciding to become an entrepreneur (Female TEA), the results were low for the two groups of institutional countries **(Figure 6)**. Most females delay the decision to take the entrepreneurial option (80% of respondents in the survey). This result is consistent with Aboal & Veneri (2016) and Bardassi *et al.* (2011).

Figure 6. Female's TEA by Institutional System (% del Total)
Source: GEM

The determinants of entrepreneurship by institutional typology are given in **Table 2** below. We grouped the panel into State-Led and Emerging Led countries. There were more than 50,000 respondents for the Emerging Led group, and the number of respondents for the State-Led group hit 10,000. We chose the period 2009-2015 because it is the period after the global financial turmoil and was characterized by a commodities boom. Some countries display similar macroeconomic performance between groups. External factors were common for both groups of countries.

Table 2. Estimation Results- Random Effect

Dependent Variable: TEA	Emerging Led		State-Led	
	Male	*Female*	*Male*	*Female*
Demographic Factors				
AGE	-0.00522280 *** (0.0007578)	-0.00690380 *** (-0.0008238)	-0.0075023 *** (0.0014562)	-0.0111944 *** (0.0015805)
HHSIZE	0.00691550 (0.004957)	0.03284100 *** (0.0054301)	0.0031938 (0.01111759)	0.0354004 *** (0.0111875)
GEMHHINC	0.00000354 *** (0.00000034)	0.00000092 ** (0.00000036)	0.0000001 (0.000000698)	0.00000007 (0.000000725)
EDUCATION	0.08794110 *** (0.008589)	0.02110390 ** (0.0087737)	0.0830253 *** (0.0161088)	0.0021797 (0.0161815)
Socio Capital Factors				
BUSANG	0.34916350 *** (0.0311603)	0.30910920 *** (0.039908)	0.4435903 *** (0.072719)	0.3797711 *** (0.0835861)
NETWORK	0.78956270 *** (0.0213014)	0.84378050 *** (0.0220017)	0.6793288 *** (0.043136)	0.6924055 *** (0.0438164)
Macroeconomics Factors				
INFLATION	0.09193120 *** (0.0100127)	0.08989950 *** (0.0104776)	-0.0266794 *** (0.0020242)	-0.0350427 *** (0.0021932)
EXPECTATIONS	0.04496520 *** (0.0042531)	0.05741950 *** (0.0045078)	0.0338546 *** (0.0075493)	0.0547112 *** (0.0077729)
Cognitive Factor				
FEARFAIL	-0.36255330 *** (0.0238708)	-0.45713840 *** (0.0233031)	-0.3563790 *** (0.0479506)	-0.4665405 *** (0.0461938)
CONSTANT	-2.27955200 *** (0.128302)	-2.14146800 *** (0.0950768)	-0.9574659 *** (0.1002101)	-0.7722080 *** (0.1046685)
Number of countries	5	5	4	4
Number of years	7	7	7	7
Time period	2009-2015	2009-2015	2009-2015	2009-2015
Log likelihood	-29364.94	-27917.86	-6696.76	-6698.63
Number of observations	58,626	61,385	12,142	13,320

*** Significant at 99%, ** 95% and * 90% of confidence

Table 3. Breusch-Pagan Lagrange multiplier Test for Open and Close data Countries

For Open:		
TEA Female	**Var**	**sd=sqrt(Var)**
	0.1452328	0.3810942
e	0.1446013	0.3802648
u	0.0008819	0.296975
Test Var(u) = 0		
chibar2(01) = 309.48		
Prob > chibar2 = 0.0000		
For Closed:		
TEA Female	**Var**	**sd=sqrt(Var)**
	0.1686868	0.410715
e	0.1628393	0.4035335
u	0.0085595	0.0925175
Test Var(u) = 0		
chibar2(01) = 3351.16		
Prob > chibar2 = 0.0000		

The variable income (GEMHHINC) resulted positive and significant only for Emerging Led Countries. This result holds regardless of gender. The State-Led group obtained a non-significant sign. Income level is important for entrepreneurship in Emerging Led countries. This result can be explained by structural market differences. Van Stel, Wennekers & Scholman (2014) found that there is a positive economic impact of entrepreneurship given the high level of income per capita.

As well to considering gender, age is also a relevant variable for Emerging Led and State-Led countries. This variable resulted in negative and significant so that entrepreneurship may start at an early stage in both sets of countries (Kelley *et al.*, 2013; Aboal & Veneri, 2016).[5]

The variable business angels (BUSANG) resulted in an expected positive and significant sign. Initial seed capital must be relevant for initiating a new venture for females and males alike, no matter the institutional typology they belong to. FEARFAIL, which is the proxy for risk, also resulted in negative and significant in the sample of countries. The latter result was expected given the analysis previously conducted. The variable networks, which measure entrepreneurial networking, ended up with a positive sign as expected. Seed capital and connections are relevant in the two sets of countries regardless of whether gender is taken into consideration. Extant literature claims that the environment plays a relevant role in female entrepreneurship (Frese, 2009; Aboal & Veneri, 2016).

The variable size of the family (HHSIZE) was positive and significant for females in both groups of countries. This result reflects gender inequality isolating the effect of institutional classification. Females start entrepreneurial ventures when the size of the household is larger. Males have better opportunities to work and do not start any business ventures because of family

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[5]Schweizer and Troche (2019) used latent variables for this kind if estimation. Also Loncke *et al.* (2019) used Structural Equation Model (SEM) to perform his estimation instead of Panel Data. However the results with SEM is not necessarily reliable yet (Tarka, 2018).

size pressures. Family pressure is relevant to a woman's decision about entrepreneurship (Aidis *et al.*, 2007; Bardasi *et al.*, 2011).

Inflation is a macroeconomic variable that returned heterogeneous results in both sets of countries. For Emerging Led countries, this variable was positive and significant but for State-Led economies, the sign was negative and significant. This means that inflation negatively affects the decision to start up entrepreneurship among both males and females in State-Led countries. The latter result was explained previously when we described certain macroeconomic volatilities in State-Led countries. Emerging Led countries consider inflation as an incentive to start-up entrepreneurial ventures due to the low volatility of their macroeconomic variables. There is no direct link identified in the entrepreneurial literature between these macroeconomic variables and female entrepreneurship. However, in the literature on macroeconomics, this relation makes theoretical sense.

Finally, the variable expectations resulted in positive and significant which was expected according to our previous assessment. This variable considers GDP growth times a dummy of expectations soon given by the respondent. Bad expectations reduce the incentive for entrepreneurship. The latter result is a macroeconomic effect with some micro-foundations. Luca's critique and Keynesian animal spirits can be taken into consideration.

CONCLUSION

This study permits the exploration of the determinants of entrepreneurship within two different institutional settings: Emerging Led economies and State-Led economies. The latter group of countries is characterized by strong governmental intervention and several restrictions on openness. In our study, we have considered the following countries: Argentina, Bolivia, Ecuador, and Venezuela. During the period under assessment, 2009-2015, these countries had left-wing political orientations and several barriers to openness. None of these countries has any international free trade agreement established. The second group of countries includes Brazil, Chile, Colombia, Mexico, and Peru and has fewer restrictions on openness than the first set of countries.

We found that gender is a key variable in the generation of heterogeneous results. Income levels resulted as not significant in State-Led countries, and in the male or female decision to start-up entrepreneurial ventures. However, macroeconomic variables such as Inflation negatively affect the entrepreneurial decision. This result is due to macroeconomic volatility within the group of State-Led countries.

Socioeconomic variables like Age and Education resulted significantly, with the expected sign for both groups of countries and gender. Similar results were obtained in the socio capital factors (Business Angels and Networking) and cognitive variables (FEARFAIL and Expectations).

The socioeconomic variable "HHSIZE", which captures family members, explains gender inequality. Males are not affected by this variable but females are, regardless of the country group. This means that there is an entrepreneurial force that drives females by necessity but not males.

There are some limitations of the study coming from the data. The GEM data we used has some caveats regarding its updating and it also has interview omissions. A future direction for the further study could be to address the effect of a pandemic on the entrepreneurship decision.

There must surely be a change in the entrepreneurship decision due to the recent pandemic scenario. Some countries may have faced different entrepreneurship decisions by gender. Informality in each country may trigger heterogeneity in the possible results. However, the lack of recent data for timing in the publication of the survey results blocks any possibility of this research. When the GEM brings the data up to the pandemic time, there should be the possibility to apply our model and contrast our results with the model described in this paper.

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