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INDICE

FEMALE NATIONAL-LEVEL ENTREPRENEURSHIP AND THE GENDERED DIMENSION OF THE CULTURAL ENVIRONMENT

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Introduction

During the past decades, women have committed to entrepreneurship as never before in world history, but even if the share of females involved in entrepreneurial activities is increasing worldwide (Tsyganova & Shirokova, 2010) two interesting issues regarding gender differences in entrepreneurship still arise. First, males are more likely to be entrepreneurs than females, regardless of the stage in which the activity is -in terms of its length- and, second, male entrepreneurship rates are systematically higher than those of females (Arenius & Minniti 2005, Minniti & Nardone 2007, Koellinger et al. 2008, van der Zwan et al. 2011).

Entrepreneurship has been constructed as masculine, being a male domain. This makes discrimination an issue to be solved, a gender stereotyped barrier to get involved in entrepreneurial activities if female. If the start-up, survival and growth of a business are not gender neutral, societies might be guilty for seen and even imprinting women as subjects "not having enough" for being entrepreneurs.

Entrepreneurship, as a career choice, is predominantly a male occupational path, but this is not necessarily meaning that females do not want to become entrepreneurs, instead, it might be reflecting the existence of strong structural barriers to female entrepreneurship that go beyond their individual preferences.

The central aim of this paper is to approach cultural preferences in gender attitudes as an alternative measure of gender equality and to examine how these are related to the share of female entrepreneurship at the national level.

We are particularly interested on the influence that social orders gendered in cultural attitudes might have on female entrepreneurship rates. The paper also analyzes the relationship between national-level female entrepreneurship and institutional factors, both formal (taxes, regulations, etc.) and informal (levels of corruption, culture).

This paper is structured as follows. The first section is dedicated to the institutional theory, as the theoretical background that supports our empirical findings, and some empirical research covering the relationship among culture, gender and entrepreneurship. The second section depicts data sources and variables included in the models and describes how panel regression models have been built. The results

of empirical analyses are summarized in the fourth section which is followed by discussion of findings and knowledge-based policy recommendations.

1. Theoretical background and brief state of the art

Institutions might constrain and/or enable any individual behavior (North, 1990). Thus, the nature, extent and development of entrepreneurship might be influenced by the institutional environment in which potential entrepreneurs live (Welter & Smallbone, 2011).

Institutional factors seem to affect men and women differently (Estévez Abe, 2006) and, as observed in recent studies, institutions help explaining gender differences in entrepreneurial activity (Verheul et al., 2006; Minniti & Nardone, 2007; Elam & Terjesen, 2010; Estrin and Mickiewicz, 2011; Marques, 2017).

Institutions might be regulative, normative and cultural-cognitive and affect both the desirability and the feasibility of entrepreneurship (Welter et. al, 2014). Regulative institutions (formal) are translated into rules and policies that governments implement and, generally, directly influence entrepreneurial activities. Normative and cultural-cognitive institutions are informal, deeply rooted on societies and have a very slow pace of change. The first type encompasses unwritten rules that drive actions within the way of doing of the system while the second includes the values that are reflecting the common understanding of the socially expected behavior individuals must have.

Gender roles and attitudes, understood as cultural-cognitive institutions, reflect what is socially accepted as a male or female behavior (Ahl, 2006; Baughn et al., 2006). A traditional system of gender roles establishes a net division between men and women regarding the expected social behavior, while a more egalitarian system tends to attribute more exchangeable roles (gender neutral). Traditional gender roles view entrepreneurship as typically masculine and portray it not as a real employment alternative for women but as a less desirable and feasible career choice (Shapero & Sokol, 1982; Scott, 2008; Welter et al., 2014).

As stated by Gupta et al. (2009), socially constructed gender stereotypes regarding entrepreneurship are predominantly masculine and exert a strong influence on entrepreneurial intentions, favoring males. Therefore, the social legitimation of entrepreneurship tends to reinforce male entrepreneurial intentions, while weakening those of women (Santos et al. 2016).

Engle et al. (2011) have found that the cultural environment influences entrepreneurial intentions, being those of women's particularly reactive to gender egalitarianism. According to Baughn et al. (2006), women seem to be more responsive than men to the level of entrepreneurship normative support. Thus, in a

system where gender equality persists it is expected a greater support for female entrepreneurship. But which gender equality? Some literature has shown that gender equality, as conventionally measured by composite indexes, is not a predictor of the share of female entrepreneurs (Baughn et al., 2006; Sarfaraz et al., 2014; Dileo & García-Pereiro, 2018).

Coherently, a favorable institutional environment must also embrace a cultural environment ruled by gender equality, in which the role attribution between men and women follows the exchangeability rule, independently of the sphere (public or private, productive or reproductive, employment or self-employment, etc.). Stemming from the former, here our first two research hypotheses:

Research Hypothesis 1: Strong institutions, both at the formal and informal levels, can foster and protect female entrepreneurship by creating a favorable and supporting environment for its start and early development.

Research Hypothesis 2: Social support to the masculine stereotype of entrepreneurship, constructed through gender attitudes, might create a barrier to the increase of women's involvement in early stage entrepreneurship.

It is extensively known that the levels of gender equality and education positively influence each other. On the one hand, vocational training systems and internal labor market systems might exacerbate gender inequality (Estévez Abe, 2006), while on the other, higher educational levels (mostly graduate and postgraduate degrees) led to higher rates of female entrepreneurship (Cowling and Taylor, 2001). So, we expect to find a positive relation between female presence on tertiary education and the share of women involved in early stage entrepreneurship (*Research Hypothesis 3*).

2. Data sources, variables and panel data models

Data was drawn from six different data sources. The percentage of females involved in an early stage entrepreneurial activity (annual country estimates) is the dependent variable and comes from the Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS). Independent variables have been grouped in four categories (Table 1). The first group measures attitudes related to the levels of gender equality of a country and comprises the share of individuals that disagree to the following statements: child needs a home with father and mother and men make better business executives than women do. The source is the World Values Study (3rd to 6ht wave, depending on country availability). The second encompasses institutional variables from the Heritage Foundation, more specifically: government integrity, government spending and tax burden. The third corresponds to sociodemographic variables such as the total fertility rate (United Nations -

Population Division) and the female gross enrollment ratio in tertiary education (World Bank). While the last includes two macroeconomic controls: GDP growth (annual %) from the World Bank and unemployment rate from the International Labour Organization (ILO).

Table 1 – *Dependent and independent variables included in panel model regressions*.

Variables	Definition	Source
Dependent variable		
TEAF	Percentage of females involved in early-stage (EA) entrepreneurial activity. EA: launching a company (nascent entrepreneur) or owning a young company (new entrepreneurs)	GEM Adult Population Survey. Annual-country estimates.
Independent variables		
Institutional		
GI	Government integrity: measures the level of corruption of a country. It is based on a 100-point scale where 100 indicates total government integrity (in terms of freedom from corruption).	The Heritage Foundation. Annual-country estimates.
GS	Government spending: measures the level of government expenditures as a percentage of GDP.	
TB	Tax burden: measures all forms of direct and indirect taxation as a percentage of GDP (including direct taxes in terms of the top marginal tax rates on individual income and corporate incomes, and overall taxes). A score of 100 indicates the highest tax burden.	
Gender attitudes	*Attitudes related to the levels of gender equality of a country*	World Values Study 3°, 4°, 5° & 6° waves depending on availability.
WVSbusiness	Men make better business executives than women do (% of disagree at the national level)	
WVShome	Child needs a home with father and mother (% of disagree at the national level)	
Sociodemographic controls		

Table 1 – *Dependent and independent variables included in panel model regressions.*

Variables	Definition	Source
Sociodemographic controls		
TFR	Total Fertility Rate: total number of children born or likely to be born to a woman in her lifetime if she were subject to the prevailing rate of age-specific fertility in the population	United Nations Population Division
SETF	Gross enrollment ratio in tertiary education (% females)	World Bank
Economic controls		
UR	Unemployment rate: the share of the labor force that is unemployed (%).	International Labour Organization (ILO)
GDPG	Gross Domestic Product Growth: percentage change of the GDP between t and t-1 period (that is the variation compared to the previous year).	World Bank

Our cross-sectional time-series data of the 2001-2015 period includes 34 countries covering different geographic regions worldwide[1]. The country-selection criteria applied was to maximize the number of entities by opting for countries with at least 4 years of available data during the observation period in GEM with available data in the Heritage Foundation and the World Values Study. Thus, our dataset has 510 observations and is constituted in a balanced panel. The descriptive statistics are summarized on Table 2.

We run a Hausman test to decide between fixed o random effects, based on its result we rejected the null hypothesis of uncorrelated unique errors and established fixed effects as the preferred model.

We have also run a series of tests for the estimation of final fixed effects panel regression models. The first objective was checking for constant variance using the xttest3 stata command: we rejected the null hypothesis and concluded heteroskedasticity. The second was to search for residual correlation across countries under observation so we computed the Pasaran test (De Hoyos and Sarafidis, 2006) and found cross-sectional dependence. Finally, the Lagram-Multiplier test indicated the absence of serial correlation in our panel data. As suggested by Hoechle (2007), FE regression with Driscoll Kraay standard errors (Driscoll Kraay, 1998) must be

[1] Argentina, Belgium, Brazil, Chile, China, Colombia, Croatia, Denmark, Finland, France, Germany, Greece, Hungary, Iran, Ireland, Italy, Japan, Latvia, Malaysia, Mexico, Netherlands, Norway, Peru, Portugal, Russia, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, United Kingdom, United States, Uruguay.

run to control for the biases that both heteroskedasticity and spatial correlation (cross-sectional dependence) might cause on model estimations.

Table 2 – *Descriptive statistics.*

Variable	Mean	S.D.	Min	.25	Mdn	.75	Max
TEAF	7.11	7.87	2.14	2.80	4.43	7.63	62.88
Institutional							
GI	58.33	22.74	10.00	37.00	57.50	76.20	100.00
GS	51.79	26.31	0.00	28.95	53.30	76.00	99.10
TB	64.57	14.62	29.80	54.25	67.40	75.45	91.60
Gender attitudes							
WVSbusiness	57.69	32.73	0.15	45.49	74.78	83.14	92.49
WVShome	22.96	22.62	0.80	8.33	13.82	29.92	95.26
Sociodemographic controls							
TFR	1.77	0.41	1.16	1.42	1.73	2.01	2.99
SETF	61.55	24.31	13.76	42.22	62.07	81.54	116.86
Economic controls							
UR	8.34	5.10	0.49	4.62	7.44	10.36	27.47
GDPG	2.07	3.55	-12.98	0.32	2.02	3.84	24.38

Source: Own elaboration. Multidata-source panel.

3. Results

Table 3 illustrates the results of panel regressions on the share of female early stage entrepreneurs. The first two columns display coefficients, standard errors and statistical significance of fixed effects models, the last includes time fixed effects. Columns 3 and 4 show the estimates of the Driscoll and Kraay fixed effect regressions, with and without considering time fixed effects. Figures reveal no upsetting change in the results of fixed effects estimates and their statistical significance, rather than for the last estimation (4) where the unemployment rate becomes significant ($p<0.05$).

If we now turn to institutional variables, coefficients presented on the table below show a significant positive influence of government integrity on the share of female early-stage entrepreneurs. More specifically, as a government's integrity rises across time by one unit, the TEAF increases by 0.08 units. Government integrity should be read as a proxy of the levels of corruption, going from daily practices of tipping for services to bribery or graft. Mainly, female entrepreneurship could benefit from guaranteed fair and equal treatment given to every member of the society.

This is in line with our first hypothesis and confirms the importance of informal institutions on entrepreneurship (North, 1990; Welter & Smallbone, 2011), especially among females (Estévez Abe, 2006; Estrin and Mickiewicz, 2011;

Marques, 2017). However, the empirical support to our first hypothesis was only partial given that we had also expected to find a determinant role of formal institutions measured by indicators such as government expenditure and tax burden, but these variables did not seem to exert a statistical significative influence on female entrepreneurship at the macro-level.

The test of our second research question was successful as we have been able to identify a positive relationship between cultural-cognitive institutions that socially support behavior and female involvement on entrepreneurship. In fact, for one unit of increase in the percentage of those who disagree with the statement "men make better business executives than women do", we expect a 0.28 increase in the national share of female early-stage entrepreneurship. This is the highest coefficient obtained by independent variables included in our panel regressions.

Thus, reinforcing findings of previous research on the subject (Gupta et al., 2009; Santos et al., 2016), results indicate that female entrepreneurship rates are lower in societies where entrepreneurship as a masculine career choice is plenty of social support and legitimation. This might negatively impact not only women's entrepreneurial behaviors and intentions, but also might be reinforcing gender inequality and traditional gender roles.

Findings also confirm our third research hypothesis: there is a positive effect of female tertiary education on the share of female-headed entrepreneurial activities. Thus, a one percentual-point increase in the female gross enrollment ratio in tertiary education results in 0.07 units increase in the share of TEAF.

Overall, neither the total fertility rate nor the GDP growth affected the rate of female entrepreneurship in these countries. Regarding the first, our empirical estimates contrast recent findings by Dutta and Mallick (2018) who reported a negative relationship between fertility rates and female entrepreneurship, particularly in countries where the educational level of the population is lower.

Interestingly, a change on the statistical significance of the national unemployment rate was observed only when controlling for both time fixed effects and cross-sectional dependence across countries. This is showing the importance of controlling for the impact that shocks occurred in one country might have on another of the countries included in the panel dataset. Such a negative influence is perhaps suggesting the existence of a sort of discouraging effect for which women are not engaged on starting a business when embedded on a context of necessity. To get a deeper understanding of this finding further research should approach the motivations hidden behind female entrepreneurship (opportunity or necessity driven).

Table 3 – *Results of panel regressions on the share of female early-stage entrepreneurs.*

	1	2	3	4
VARIABLES	**Fixed Effects**	**Fixed Effects FTE**	**Driscoll and Kraay**	**Driscoll and Kraay**
Institutional				
GI	0.0671*	0.0800**	0.0671**	0.0800***
	(0.0367)	(0.0371)	(0.0280)	(0.0274)
GS	-0.0311	-0.0184	-0.0311	-0.0184
	(0.0209)	(0.0229)	(0.0207)	(0.0255)
TB	-0.0126	-0.0255	-0.0126	-0.0255
	(0.0304)	(0.0338)	(0.0175)	(0.0182)
Gender attitudes				
WVSbusiness	0.266***	0.275***	0.266***	0.275***
	(0.0843)	(0.0868)	(0.0707)	(0.0751)
WVShome	0.0523	0.0379	0.0523*	0.0379
	(0.0361)	(0.0415)	(0.0287)	(0.0308)
Sociodemographic controls				
TFR	-0.392	-0.0218	-0.392	-0.0218
	(1.335)	(1.383)	(0.665)	(0.701)
SETF	0.0914***	0.0692***	0.0914***	0.0692***
	(0.0171)	(0.0242)	(0.0173)	(0.0207)
Economic controls				
UR	-0.0601	-0.0831	-0.0601	-0.0831**
	(0.0685)	(0.0716)	(0.0350)	(0.0366)
GDPG	-0.00935	-0.0103	-0.00935	-0.0103
	(0.0543)	(0.0676)	(0.0482)	(0.0473)
Constant	-15.14**	-15.02**	-15.14***	-15.02***
	(6.031)	(6.133)	(3.889)	(3.989)
Observations	510	510	510	510
R-squared	0.133	0.158		
Number of id	34	34		
Number of groups			34	34
Time FE		YES		YES
Robust SE			YES	YES

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

Source: Own elaboration. Multidata-source panel.

Discussion and policy recommendations

These results reflect those of the informal brand of the institutional theory: the share of females involved in early stage entrepreneurial activities seems to benefit from an institutional environment ruled by government integrity. It can thus be suggested that institutional processes (that might act as the rules of the game) must be clear and clean for really supporting females on their way to entrepreneurship. Females' participation to tertiary education seems to behave as a lifesaver in unfavorable institutional contexts by providing support to the increase of female headed "fresh" enterprises.

With respect to the cultural environment, findings suggest that a society's level of support to businesswomen seems to favor a higher share of female early stage entrepreneurship. Hence, seems that the socialization of women in unfavorable institutional and cultural environments influences their career choices pushing them away from entrepreneurship. Thus, instead of becoming entrepreneurs, they might be choosing between working for others or even not working at all, being the last two more suitable career options for them in such a hostile context. It remains unclear if this is a constrained choice.

A key policy priority should therefore be to plan for the long-term care of supporting women's career choices reducing the conflict between individual preferences and structural constrains (i.e.: family responsibilities, society's stereotypes, weak institutional environment).

There is, therefore, a definite need for creating an environment in which women could evaluate entrepreneurship as a real career option for them, such as teaching in a high school or working PT in the public sector. Are institutions making entrepreneurship achievable for women? The stereotyped role of women seems to be blocking female entrepreneurship growth. After the great economic recession that has strongly impacted countries worldwide, increasing women's headed entrepreneurship is urgently needed not only to led endogenous growth but also to rise levels of equality and boost women's empowerment on both public and private domains of life.

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SUMMARY

Female national-level entrepreneurship and the gendered dimension of the cultural environment

There has been a continuous increase in the number of women-headed businesses during the last decades and, consequently, the interest on its rates and profiles has grown both in academic and policy research. Most recent literature on the subject has found that not only socio-demographic characteristics and perceptual variables affect entrepreneurial decisions, but also contextual factors are clue to disentangle gender differences in entrepreneurial activities.

The central aim of this paper is to examine how institutional factors and gender attitudes are related to female entrepreneurship. Panel analyses investigate the determinants of female early stage entrepreneurship rates from 2001 to 2015 at the country-level using aggregated data from six sources of 34 countries covering different geographical regions worldwide. Results have shown that government integrity, cultural support to businesswomen and female participation in tertiary education positively influence the share of female entrepreneurs.

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