

THE EFFECT OF GOOD GOVERNANCE ON BUSINESS CREATION:  
A MULTILEVEL APPROACH

*EL EFECTO DE LA BUENA GOBERNANZA EN LA CREACIÓN DE EMPRESAS:  
UN ANÁLISIS MULTINIVEL*

*María Jesús Rodríguez-Gulías*  
Universidade da Coruña  
[maria.gulias@udc.es](mailto:maria.gulias@udc.es)

*Vítor Manuel de Sousa Gabriel*  
Instituto Politécnico da Guarda  
[vigab@ipg.pt](mailto:vigab@ipg.pt)

*David Rodeiro-Pazos*  
Universidade de Santiago de Compostela  
[david.rodeiro@usc.es](mailto:david.rodeiro@usc.es)

Recibido: enero 2018; aceptado: enero 2020

ABSTRACT

Entrepreneurship is a priority for governments worldwide and different studies have pointed out the importance of public governance to promote it. We used multilevel modelling on a sample of 206 countries for the period of 2004 to 2014, to empirically test three hypotheses. Firstly, we tested whether creation of new businesses is partly determined by the supranational regions where the countries are located. Secondly, we estimated the immediate impact of governance on entrepreneurial rates, and thirdly, the delayed effect of governance was considered. Our results showed countries located in the same supranational region are more homogeneous in terms of entrepreneurship than countries situated in a different region.

*Keywords:* business creation; governance; supranational region effect; multilevel analysis; international.

## RESUMEN

El emprendimiento es una prioridad para los gobiernos en todo el mundo y numerosos estudios han señalado la importancia de la gobernanza para promover la creación de empresas. En este trabajo utilizamos una modelización multinivel sobre una muestra de 206 países, para el período 2004-2014, para probar empíricamente tres hipótesis. En primer lugar, verificamos si la creación de nuevas empresas está parcialmente determinada por las regiones supranacionales donde se encuentran los países. En segundo lugar, estimamos el impacto inmediato de la gobernanza en las tasas de creación de empresas y, en tercer lugar, se consideró el efecto retardado de la gobernanza. Nuestros resultados mostraron que los países ubicados en la misma región supranacional son más homogéneos en términos de emprendimiento que los países ubicados en una región diferente.

*Palabras clave:* creación de empresas; gobernanza; efecto región supranacional; análisis multinivel; internacional.

*Clasificación JEL / JEL classification:* M13; H00; G18; C23.



## 1. INTRODUCTION

The last few decades have brought economic, political and social changes, which have sparked the interest of academics, entrepreneurs and politicians, emphasising the role played by new business and companies in today's societies. Many scientific studies have analysed in detail the effect of entrepreneurship in economic growth and employment (Anokhin et al., 2008; Klapper et al., 2006; Minniti & Levesque, 2008; Naudé, 2010), innovation (Knoll & Zloczysty, 2012), as well as their influence on the development and welfare of societies (Acs et al., 2008, Amorós & Bosma, 2013). According to Acs et al. (2008), entrepreneurship has a direct influence on economic performance, through new jobs, and the creation of new products and services, but also produces important indirect effects, primarily improving efficiency and productivity, reducing prices, stimulating structural transformation, and generating new markets and innovations. The economic impact of new businesses is not restricted to the sector in which it operates or to the region in which it is established. Thus, entrepreneurship produces positive externalities that spill over into other sectors and regions. This has allowed a greater understanding of the importance of business creation, considered by many authors as a strategic vector and a key element to design the most effective growth and development policies.

At the same time entrepreneurship has become more central, the term 'governance' has recently become a key element in government and business policies. Governance is used to characterise the processes and institutions through which authority is exercised in a given country (Kaufmann et al., 2010; Ong, 2006). More specifically, governance is related to the process of selecting, monitoring and replacing governments, the effective capacity of governments to establish and perform structural policies, and the respect for national citizens and the state for the institutions that govern (Kaufmann et al., 2010). In this context, good governance is synonymous with transparency, rule of law, efficient public services, and civil rights, among others (World Bank, 2013).

Despite the impact of public governance on economic growth and development, the relevance of this variable has been neglected by neoclassical growth theory. In the late 1980s, with the emergence of endogenous growth theories, public governance was recognised as a relevant component of economic growth. According to new growth theories, institutional structure is an important determinant of both transaction costs and production costs, good reason to believe that it may therefore affect economic growth (Aron,

2000). Consequently, improving the quality of public governance, countries can encourage domestic private investment and foreign direct investment by reducing business uncertainty, creating a suitable investment environment and actively contributing to economic growth.

This research aims to deepen the understanding of the determinants that underpin enterprise creation at a global scale. In particular, the focus of this work intends to analyse the role played by governance quality, understood as the capacity of a government and its public institutions to provide services and to design and implement norms.

From the entrepreneurship research point of view, the action of starting a business and its determinants have been a central question and a significant number of studies have analysed factors that influence entrepreneurship. Despite this, the literature on governance and business creation is scarce and/or has the potential to improve. This paper aims to fill this gap and also addresses other weaknesses in the literature.

Firstly, by using governance data, our study tests the hypothesis that the supranational regional contexts may partially determine levels of entrepreneurship, applying multilevel modelling. A multilevel and cross-national approach is linked to the recognised supportive public and institutional policies settings at country level in the development of firms. Therefore, the use of a multilevel approach provides both methodological and theoretical contributions and provides the opportunity of exploring the actual effect of government policies, taking into account the country differences. Secondly, we estimate the immediate and delayed impact of governance on entrepreneurial entry rates. An increasing amount of research has focused on a better understanding of the role of governance in the creation of new enterprises, but early research on this topic was primarily descriptive and lacking in longitudinal data. Here we use a three-level random intercept model and, to estimate the delayed effect of governance, the occasion-level variables are lagged by four periods. To the best of our knowledge no previous studies have done this.

In order to assure robustness, a large sample of over 200 countries have been used, including developed and developing economies, taking into account the set of measurements from the World Bank Worldwide Governance Indicators (WGI) research project (Kaufmann et al., 2010), translated into six governance variables for the 2004 to 2014 period. Panel data through multilevel analysis was performed for different estimation specifications. In methodological terms, to study the effects of governance quality in new business creation, contemporary and delayed perspectives are used in the multilevel panel approach. Given the lack of empirical evidence, the purpose of this research is to assess if a country's location is a key factor or if the supranational region matters, filling an empirical research gap on the subject of entrepreneurship.

The remainder of this work is organised as follows. Section 2 introduces the literature review concerning the role of governance quality in new business creation. The next section describes the nature of the data and presents the variables and the sampling process. Section 4 describes the model specification,



while the following section presents the statistical results. The last section presents the main conclusions, highlights the most relevant aspects of this research, and establishes some future research lines.

## 2. LITERATURE REVIEW

Human behaviour is influenced by the institutional environment. There are reasons to believe that institutional factors may restrict or encourage the creation of new enterprises, influencing entrepreneurial environment (Ajzen, 1991). In this context, several researchers have proposed the application of institutional factors to understand entrepreneurship (Alvarez et al., 2011; Salimath & Cullen, 2010; Thornton et al., 2011). At the same time, according to Acs et al. (2008) and Thai and Turkina (2014), entrepreneurship can play an important role in the introduction of structural changes in an economy, making it very useful for policymakers to understand how entrepreneurs drive factors when creating new businesses. Similarly, Wennekers et al. (2002) and Bjørnskov and Foss (2008) point out the importance of public governance to promote entrepreneurship.

Based on a literature review, Gedeon (2010) concludes that the observed rates of entrepreneurship across countries worldwide vary systematically. These differences are frequently linked to the nature and scale of formal and informal institutions. The identification of institutional obstacles in the creation of new businesses will contribute to a better understanding of the current situation, but will also help the development of political measures to stimulate entrepreneurship. The role played by formal institutions, such as explicit rules and regulations for the creation and the development of new companies, is extensively documented (Boettke & Coyne, 2009; Henrekson, 2007; Nystrom, 2008; Van Stel et al., 2007).

Behaviour is also influenced by informal institutions, the so-called unwritten rules of the game (North, 1994), such as traditions, norms, values, codes of conduct, taboos, and other social mechanisms (Freytag & Thurik, 2007; Williamson, 2000). Numerous empirical studies have shown that informal institutions differ significantly across regions (Beugelsdijk, 2007; Bosma & Schutjens, 2011; Obschonka et al., 2013; Wagner & Sternberg, 2004). Such differences may then lead to more or less entrepreneurship-friendly policies at the regional level.

Acs et al. (2008) found differences in the determinants of entrepreneurship between developed and developing countries. These differences are explained by different factors, including the institutional, such as macroeconomic stability, knowledge and public policies. Related to public policies, business entry may be influenced by public programmes and infrastructures. Public regulations also influence the choice between formal or informal sectors. In order to avoid bureaucracy, taxes, and market and labour regulations, most entrepreneurs operate informally (Gërkhani, 2004; Ghani et al., 2014),

especially in developing countries (Schneider et al., 2010). Finally, changes in the regulatory framework may have heterogeneous consequences, depending on the country (Aghion et al., 2005).

Although some research studies found a statistical relationship between personality and personal attitudes of regional population and the level of new businesses, they have not deepened the interconnection of these effects, namely the role of public governance.

Bettignies and Brander (2007) and McMillan and Woodruff (2002) argue that economic and institutional conditions are important determinants of entrepreneurship development. However, entrepreneurship development requires effective, sustained and long-term governance (Gugler & Chaisse, 2009). By focusing on improving the quality of governance, governments can take on a variety of specific actions to promote entrepreneurship. However, for countries characterised by low levels of economic development, these actions may be ineffective, because their regulatory framework is generally weak (Thai & Turkina, 2014), which raises doubts about the ability of entrepreneurs to protect themselves from corruption. This situation may lead them to operate in informal sectors (Dreher & Schneider, 2010).

Numerous research studies have concluded that there is a positive relationship between the quality of governance and some indicators related to economic wellbeing, namely the United Nations Human Development Index (Rose-Ackerman, 2004), the growth of gross domestic product (GDP) per capita (Kaufmann & Kraay, 2003), and entrepreneurship activity (Amorós & Masferrer, 2010; Dau & Cuervo-Cazurra, 2014; Grosanu et al., 2015; Kaufmann et al., 2006; Thai & Turkina, 2014). In turn, Klapper et al. (2007) concluded that the same type of relationship exists between good governance and entrepreneurship.

A common element of most of the work carried out on the effect of governance on entrepreneurship is the adoption of the so-called governance quality indicators, developed within the scope of the WGI project and disseminated by the World Bank. These indicators have been created by Kaufmann et al. (2010) and capture six key dimensions of governance: voice and accountability; political stability and absence of violence/terrorism; government effectiveness; regulatory quality; rule of law, and control of corruption. The research studies of Thai and Turkina (2014) and Klapper and Love (2010) are effective examples of this methodology. Thai and Turkina (2014) concluded that the impact of governance on entrepreneurship development is limited. Similarly, through a study about the relationship between several governance indicators and business creation (in the period 2004 to 2009), Klapper and Love (2010) concluded that none of these indicators showed statistical significance. According to them, this situation may be due to the fact that governance is a slow-moving variable, reason to believe that improvements in this variable are only observed over long time periods. The study considers a time frame of six years, which may be insufficient to record significant changes in governance quality indicators.



Considering the empirical literature gap and the contradictory results from several studies, it seems that more investigation is needed, mainly by exploring new research issues, introducing new methodologies and extending the sample period in order to obtain more robust conclusions. Based on the analysis of the results obtained in previous studies, the following research hypotheses were defined:

H1: The supranational region determines the creation of new businesses.

H2: The various dimensions of governance determine the immediate creation of new businesses.

H3: The various dimensions of governance determine the deferred creation of new businesses.

### 3. THE DATA AND DAMPLE

#### 3.1. SAMPLING PROCESS

The sample comes from the aggregation of two different databases of the World Bank. The World Bank's Entrepreneurship Survey,<sup>1</sup> containing annual information for 247 economies on the number of new companies registered for the period 2004 to 2014 was used to get data on entrepreneurial activity. The WGI<sup>2</sup> database, which contain indicators of aggregate and individual governance for 215 economies biannually from 1996, and annually from 2002 to 2014, was used to obtain governance data. These indicators are provided by the World Bank and calculated by Kaufmann et al. (2010), divided in six dimensions as mentioned above.

The final study sample was made up of countries only available in both databases (206), which removed some countries from the sample. In a similar way to Klapper and Love (2010), since we use up to four-year lagged values for independent and control variables as will be seen later, observations from 2000 to 2014 were kept available for these explanatory variables. Meanwhile, for entrepreneurial activity we kept all available observations, from 2004 to 2014. Table 1 summarises the sampling process.

TABLE 1. SUMMARY OF SAMPLING PROCESS

Database	Countries	Period	Source
World Bank's Entrepreneurship Survey	247	2004-2014	World Bank
Worldwide Governance Indicators	215	1996-2014	World Bank
Sample used in this study	206	2000/2004-2014	

<sup>1</sup> The complete database is available at <http://econ.worldbank.org/research/entrepreneurship>.

<sup>2</sup> The complete database is available at [www.govindicators.org](http://www.govindicators.org).

### 3.2. DEFINITION OF VARIABLES

As in Grosanu et al. (2015) and Klapper and Love (2010), this work measure entrepreneurship by the entry density of new companies (World Bank's Entrepreneurship Survey). This indicator includes the number of new limited liability companies registered in the calendar year, per 1,000 people aged 15 to 64 years, and we applied logarithmic transformation to this variable (Grosanu et al., 2015).

The six dimensions of governance or indicators of quality of governance of the WGI project are used by most of the previous works (Amoros & Masferrer, 2010; Grosanu et al., 2015; Klapper & Love, 2010). These indicators have scores ranging between -2.5 and 2.5, the higher the scores, the better the results, and are defined as follows (Kaufmann et al., 2010):

- Control of Corruption (CC) captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests.
- Government Effectiveness (GE) captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
- Political Stability and Absence of Violence/Terrorism (PV) measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism.
- Regulatory Quality (RQ) captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.
- Rule of Law (RL) captures perceptions of the extent to which agents have confidence in, and abide by, the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.
- Voice and Accountability (VA) captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

In this study, we incorporated the natural logarithm of GDP per capita based on purchasing power parity as the macroeconomic control variable. In this way, we ensure that the results are connected with a better business environment, rather than the overall level of development of the country (Klapper & Love, 2010). Table 2 summarises the definitions of dependent, independent and control variables.



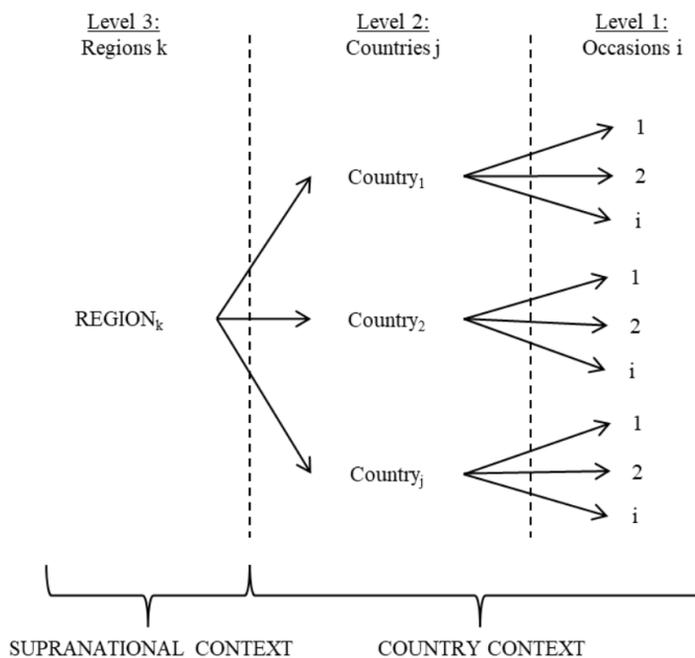
TABLE 2. DEFINITION OF VARIABLES

	VARIABLE	DESCRIPTION
DEPENDENT VARIABLE	DENSITY	Natural log of new firms registered per 1,000 people aged 15 to 64 years
EXPLANATORY VARIABLES	CC	Control of Corruption
	GE	Government Effectiveness
	PV	Political Stability and Absence of Violence/Terrorism
	RQ	Regulatory Quality
	RL	Rule of Law
	VA	Voice and Accountability
CONTROL VARIABLE	GDP	Natural log of GDP per capita (PPP)

#### 4. MODEL SPECIFICATION

We used multilevel modelling to empirically test the hypotheses proposed since the structure of the dataset contains occasion observations  $i$  (level 1) for each country  $j$  (level 2), located in each supranational region  $k$  (level 3) as shown in Figure 1.

FIGURE 1. STRUCTURE OF DATA



Firstly, we test whether entry density is partly determined by the supranational regions in which the countries are located (Hypothesis 1). Thus, the null hypothesis was tested that there are no supercluster effects ( $H^0: \sigma_v^2 = 0$ ) by performing the LR test to compare a three-level occasions-within-countries-within-region variance component model (Model 1) with a two-level occasions-within-countries variance component model (Model 2) (Leckie, 2013; RabeHesketh & Skrondal, 2012): The three-level (Model 1) and two-level (Model 2) models were written as:

$$\text{DENSITY}_{ijk} = \beta_0 + v_k + u_j + e_{ijk} \quad [\text{Model 1}]$$

$$\text{DENSITY}_{ij} = \beta_0 + u_j + e_{ij} \quad [\text{Model 2}]$$

$$\begin{aligned} v_k &\sim N(0, \sigma_v^2) \\ u_j &\sim N(0, \sigma_u^2) \\ e_{ijk} &\sim N(0, \Omega_e) \end{aligned}$$

Where  $\text{DENSITY}_{ijk}$  is the observed entry density of new companies for occasion  $i$  in country  $j$  in supranational region  $k$ ,  $\beta_0$  is the mean response across all occasions,  $v_k$  is the effect of supranational region,  $u_j$  is the effect of country  $j$  within supranational region  $k$ , and  $e_{ijk}$  is the residual error term. The supranational region level ( $k$ ) is not taken into account in Model 2.<sup>3</sup> The likelihood ratio test (LR)<sup>4</sup> comparing the empty three-level model (Model 1) with the empty two-level model (Model 2) (Leckie, 2013).

$$\text{LR} = -2 \ln L_1 - (-2 \log L_2)$$

Where  $L_1$  is the likelihood value for the two-level occasions-within-countries (Model 2),  $L_2$  is the likelihood value of the multilevel model (Model 1) and 'ln' refers to the natural logarithm.

To estimate the immediate impact of governance on entrepreneurial entry rates (Hypothesis 2), we extended the variance component model (Model 1) by adding the occasion-level governance variables (CC, GE, PV, RL, RQ, and VA) and the occasion-level control variable (GDP). The three-level random intercept model was written as:

<sup>3</sup> The random effects are assumed to be independent of one another and normally distributed with zero means and constant variances. For the residual errors, it was assumed that they have a first-order autoregressive correlation structure, AR (1) (Rabe-Hesketh & Skrondal, 2012; Steele, 2014). Under an AR (1) model  $\text{var}(e_{ijk}) = \sigma_e^2$  (constant) for all occasions  $i$  and  $\text{cov}(e_{ijk}, e_{i'jk}) = \sigma_e^2 \rho^{|i-i'|}$ , so  $\text{corr}(e_{ijk}, e_{i'jk}) = \rho^{|i-i'|}$ . Thus, the correlation between the responses at occasions  $i$  and  $i'$  depends on the length of time between them, and is smaller the further apart occasions  $i$  and  $i'$  are (Steele, 2014).

<sup>4</sup> As suggested by Rabe-Hesketh and Skrondal (2012), it is divide the  $p$ -value by two for testing one variance when another uncorrelated random effect is in the model.



$$\text{DENSITY}_{ijk} = \beta_0 + \beta_1 \text{CC}_{ijk} + \beta_2 \text{GE}_{ijk} + \beta_3 \text{PV}_{ijk} + \beta_4 \text{RL}_{ijk} + \beta_5 \text{RQ}_{ijk} + \beta_6 \text{VA}_{ijk} + \beta_7 \text{GDP}_{ijk} + v_k + u_j + e_{ijk}$$

[Model 3]

To estimate the delayed effect of governance on entry density (Hypothesis 3), the occasion-level variables are lagged four periods (t-4). The three-level lagged random intercept model was written as:

$$\text{DENSITY}_{ijk} = \beta_0 + \beta_1 \text{CC}_{(i-4)jk} + \beta_2 \text{GE}_{(i-4)jk} + \beta_3 \text{PV}_{(i-4)jk} + \beta_4 \text{RL}_{(i-4)jk} + \beta_5 \text{RQ}_{(i-4)jk} + \beta_6 \text{VA}_{(i-4)jk} + \beta_7 \text{GDP}_{(i-4)jk} + v_k + u_j + e_{ijk}$$

[Model 4]

## 5. EMPIRICAL RESULTS

This section aims to present an empirical contribution regarding the determinants of business creation. First, a descriptive analysis of all variables is conducted, followed by the empirical results, based on a multilevel panel approach.

### 5.1. DESCRIPTIVE ANALYSIS

Table 3 shows the descriptive statistics of the dependent, independent and control variables.

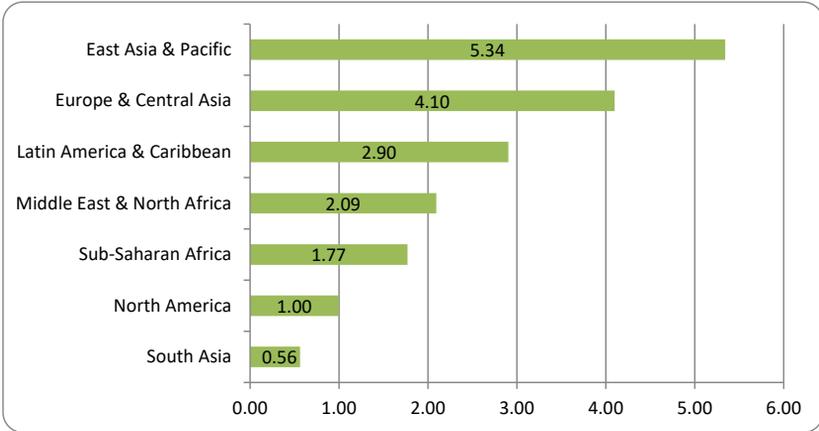
TABLE 3. DESCRIPTIVE STATISTICS

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
DENSITY <sup>1</sup>	1,119	3.2448	4.737	0.002	44.130
CC	2,791	-0.0281	1.003	-1.924	2.586
GE	2,785	-0.0279	1.001	-2.480	2.430
PV	2,803	-0.0389	1.001	-3.324	1.938
RL	2,824	-0.0355	0.998	-2.669	2.121
RQ	2,784	-0.0286	0.998	-2.675	2.231
VA	2,826	-0.0297	1.003	-2.284	1.826
GDP <sup>1</sup>	2,615	15,455.080	18,597.410	405.483	140,649.200

Notes: <sup>1</sup> Variables are not in logs.

On average, about three new companies were created annually per 1,000 adults of working age in the period 2004 to 2014. However, the data show large disparities in entry density across regions (Figure 2).

FIGURE 2. AVERAGE ENTRY DENSITY BY SUPRANATIONAL REGIONS (2004 TO 2014)



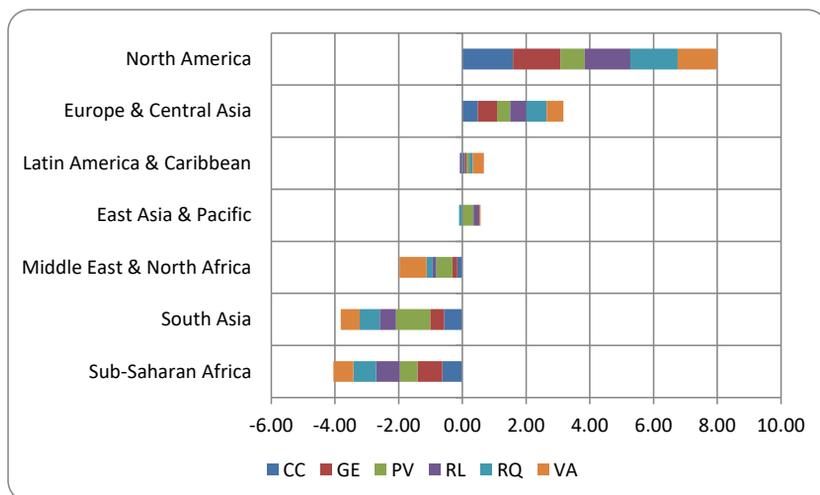
Data by supranational region (Figure 2) shows that East Asia and Pacific has the highest entry density with an annual average of more than five (5.34) companies registered per 1,000 working age individuals. The supranational region with the lowest density is South Asia, where the annual average is less than one firm (0.56) per 1,000 individuals.

Table 3 also shows negative mean values for the six measures of governance over the period 2000 to 2014. The indicator with the highest average is Government Effectiveness (GE), with -0.0279, and the lowest is Political Stability and Absence of Violence/Terrorism (PV), with -0.0389. However, as with the dependent variable, governance indicators display important disparities across supranational regions (Figure 3).

North America, and Europe and Central Asia are the unique supranational regions with positive averages in all governance indicators (Figure 3). At the other end, Sub-Saharan Africa, South Asia, and Middle East and North Africa show negative means for all measures of governance. East Asia and Pacific, and Latin America and Caribbean are in an intermediate situation with positive and negative average governance measures. Finally, the mean GDP per capita was about 15,455 international \$ over the period 2000 to 2014 (Table 3).



FIGURE 3. AVERAGE GOVERNANCE MEASURES BY REGIONS (2000 TO 2014)



## 5.2. MULTIVARIATE ANALYSIS

Table 4 shows the results of the estimations of the three-level model (Model 1), the two-level model (Model 2) to entry density and the LR test.

TABLE 4. THREE AND TWO-LEVEL VARIANCE COMPONENT MODELS AND LR TEST

	Model 1 (three-level)	Model 2 (two-level)
CONSTANT	-0.197 (0.345)	0.105 (0.141)
RANDOM EFFECTS		
$\sigma^2_{\eta}$	0.629	
$\sigma^2_{\theta}$	4.80E-11	2.49E-10
$\sigma^2_{\epsilon}$	2.224	2.839
$\rho$	0.981	0.985
N <sup>o</sup> observations	1119	1119
N <sup>o</sup> superclusters (Regions)	7	
N <sup>o</sup> clusters (Countries)	135	135
Log likelihood	-467.387	-478.941
LR TEST (3-level to 2-level model)		
$\chi^2$		23.110
p-value		0.000
p-value (divide by 2)		0.000

The intercepts, which measure the overall mean of DENSITY across all occasions, all countries, and all supranational regions in Model 1, and across all occasions and all countries in Model 2, are not significant. The values for three- and two-level country random effects ( $\sigma^2_{\mu}$ ) are very low. The value for the three-level supranational region random effect ( $\sigma^2_{\nu}$ ) is higher than the three-level country random effect ( $\sigma^2_{\mu}$ ). The LR test rejects the null hypothesis that there are no supercluster effects ( $H_0: \sigma^2_{\nu} = 0$ ). Hence countries located in the same supranational region are more homogeneous in terms of entrepreneurship than countries situated in a different supranational region. This finding supports the hypothesis that supranational region context partly determines entry density (Hypothesis 1)<sup>5</sup>. These results are consistent with those of Beugelsdijk (2007), Bosma and Schutjens (2011) Obschonka et al. (2013), and Wagner and Sternberg (2004), who found that informal institutions differ significantly across regions. This heterogeneity may influence entrepreneurship-friendly policies at the region level more or less. These differences can be a consequence of the location of each country in its supranational regional context, integrated in a supranational region composed of developed or developing countries, translated into different institutional conditions, in line with the conclusions of Aghion et al. (2005), Carbonell (2005), and Ghani et al. (2014) and obtained from the existence of specific programmes to promote entrepreneurship, the creation of public regulation and legal changes, respectively.

The results of Models 3 and 4 are displayed in Table 5. Model 3 includes a random intercept and a set of governance and control explanatory variables on the occasion level (Level 1). Model 4 incorporates lags to the explanatory variables.

The results obtained for Model 3 (Table 5) show a significant immediate effect of Rule of Law (RL) and Regulatory Quality (RQ) on the creation of new businesses. With regard to Model 4, the results display a significant delayed effect of Control of Corruption (CC), Political Stability and Absence of Violence/Terrorism (PV), Rule of Law (RL), and Voice and Accountability (VA) on entrepreneurship. For the latter variables, the premise that governance is a slow-moving variable (Klapper & Love, 2010) is fulfilled. In both models, the control variable reports a significant positive effect. Thus, Hypotheses 2 and 3 are validated for a set of governance explanatory variables.

Observing the sign of the different effects, the only measure of governance with a positive effect on entrepreneurship is Regulatory Quality (RQ). These results suggest that the ability of the government to formulate and implement pro-private sector development regulation and policies could stimulate

<sup>5</sup> In addition, by another LR test, we verified whether a multilevel model fits the data significantly better than a linear regression model without supercluster and cluster effects, that is, the null joint hypotheses that there are no higher level effects at all ( $H^0: \sigma^2_{\nu} = 0, \sigma^2_{\mu} = 0$ ) (Leckie, 2013). The results for three- and two-level models versus linear regression reject the null joint hypotheses. Hence using multilevel analysis is more appropriate than single-level analysis in this context.



TABLE 5. THREE-LEVEL RANDOM INTERCEPT MODEL

	Model 3	Model 4
	(without lag)	(lag 4)
CONSTANT	-9.244***	-6.779***
	(0.791)	(0.760)
FIXED EFFECTS		
CC	-0.089	-0.162*
	(0.074)	(0.068)
GE	0.000	-0.079
	(0.084)	(0.084)
PV	0.029	-0.108*
	(0.049)	(0.044)
RL	-0.242*	0.204*
	(0.103)	(0.098)
RQ	0.268**	0.037
	(0.086)	(0.075)
VA	0.135	0.228**
	(0.080)	(0.075)
GDP	1.012***	0.757***
	(0.086)	(0.084)
RANDOM EFFECTS		
$\sigma^2_v$	0.081	0.087
$\sigma^2_u$	2.07E-06	0.608
$\sigma^2_e$	1.208	0.695
$\rho$	0.970	0.941
N° observations	1087	968
N° superclusters (Regions)	7	7
N° clusters (Countries)	132	131
Log likelihood	-334.584	-405.283

business creation. These results are consistent with those of Grosanu et al. (2015) and Klapper and Love (2010).

Rule of Law (RL) exerts an immediate and delayed opposite influence. Thereby, qualities of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence, appear to have an immediate negative effect on company foundation, turning to positive over time. According to Klapper and Love (2010), governance indicators are slow-moving variables so improvements in these indicators can only be observed over a longer time frame. Only after the Rule of Law (RL) measures effectiveness have reached a certain level, or after it is perceived by citizens in general, positive effects may occur.

Continuing with the deferred effects, Voice and Accountability (VA) also has a positive delayed effect, while Control of Corruption (CC) and Political Stability and Absence of Violence/Terrorism (PV) present a negative lagged influence on business creation. Thus, it appears that the ability to participate in the election of government, as well as having freedom of expression, freedom of association, and a free media, belatedly and positively influences entrepreneurship. However, the perception of the control of corruption and the likelihood of political instability and/or politically motivated violence could hurt future business creation. This apparent ambiguous negative effect may be explained by the argument of Tanzi and Davoodi (1997), according to which a higher level of corruption can be associated with greater amounts of public investments, especially in countries with a large public sector. Taking into account this argument, we can expect a certain level of trade-off between corruption control and investment climate. In turn, Dima et al. (2016) consider that this variable predisposes a complex problem with causes and consequences on entrepreneurship and development. Corruption may coexist with high economic performance, but it is a phenomenon that jeopardises the functioning of democratic institutions and contributes to a climate of political instability. In this sense, both variables report a strong linkage (Schumacher, 2013). Thus, what has been said about the first variable may be applied, in part, to the second variable.

The lagged model (Model 4) results cannot be compared with any previous study since we are the first to analyse the effect of good governance on entrepreneurship in the past four years (four lags). The work could be similar to Klapper and Love (2010) although they are left with a delay of one lag and study variables governance in aggregate form.

## 6. RESULTS, DISCUSSION AND CONCLUSIONS

The focus on entrepreneurship and business creation is a high priority for many governments worldwide. Through the definition and implementation of public policies, public administrations can help encourage entrepreneurship, contributing to the promotion of economic growth and employment, to the rise of more dynamic and innovative economies and, above all, helping to improve the development and wellbeing levels of societies.

Specifically, this research focused its attention on the role played by governance on business creation. To develop the research, a multilevel panel data approach was applied, which in turn was performed on a sample of 206 countries, for the period 2004 to 2014. This research took into account the World Bank's Entrepreneurship Survey and the WGI database, in particular, the six dimensions of governance quality.



In order to understand the effect of governance quality on new business density, a triple perspective was adopted to accommodate three research hypotheses, particularly the supranational region effect, as well as both contemporary and delayed effects.

Taking into account the likelihood ratio test, the null hypothesis that there are no supercluster effects was rejected. The first finding was that countries located in the same supranational region were more homogeneous in terms of entrepreneurship than countries situated in different supranational regions. This result partially supports the hypothesis that regional context influences entry density (Hypothesis 1). The level of influence varies across supranational regions, depending on their location. This finding implies important policy consequences, mainly that region-specific effects should be taken into account for entrepreneurship policymakers.

Therefore, as a first recommendation we indicate the need to keep and/or build supranational structures that encourage policies to boost the creation of companies. In this sense, homogeneity in laws, taxes and subsidies can be helpful for entrepreneurship, but implementation of these policies from a transnational point of view is complicated. Therefore, governments must go further and check for other regulatory measures, for example, exchange programmes for students, entrepreneurs and/or investors, visas for entrepreneurs, and educational and training programmes.

When the contemporary effect produced by different dimensions of governance on business creation is considered, it is possible to conclude that the only variables with statistical significance were Rule of Law and Regulatory Quality, although producing opposite sign effects, confirming partially the second hypothesis. The first variable had a negative impact, while the second had a positive effect. Thereby, the first variable, that captures the confidence in contract enforcement quality/capacity, property rights, the police and the courts, as well as the likelihood of crime and violence, has an immediate negative effect, while the second governance variable shows a positive effect, whereby entrepreneurs benefit from the government's ability to formulate and implement sound policies and regulations that permit and promote private sector development. In this sense, our recommendation is improving the quality of regulations through simpler regulatory frameworks. Entrepreneurs sometimes find the process to becoming an entrepreneur complex and long, therefore a clearer way to create a company can increase the perception of entrepreneurship as a viable option of work.

By incorporating the lagged effect of the explanatory variables in the statistical model, the results registered substantial changes compared to the contemporary model, highlighting four statistically significant variables, namely Control of Corruption, Political Stability and Absence of Violence, Rule of Law, and Voice and Accountability. Related to these results, some recommendations are anti-corruption laws with higher penalties, an easier and faster use of courts, mechanisms for citizens to participate in policies and influence political decisions, and developing alternative channels of communication.

Contrary to previous studies, such as Thai and Turkina (2014), that obtained results of limited impact of governance on entrepreneurship, or Klapper and Love (2010), with no statistical significance, our study found a relationship between some of the indicators of governance and entrepreneurship. One of the reasons for the different results can be that these studies considered a time frame of six years while ours covered 10 years and analysed the existence of delayed effects.

Finally, considering the obtained results, two aspects should be highlighted. The first aspect relates to the fact that the first two variables helped to explain negative impacts on businesses creation, while the last two did so in a positive way. The negative sign of the first two variables can be explained from their intrinsic complexity. These variables are, in many situations, the cause and consequence of entrepreneurship, in such a way that they can coexist with high economic performance, usually associated with a large public sector, and in some cases, constitute a factor in attracting new business.

The second aspect results from the increase in statistically significant independent variables, with the incorporation of the deferred effect (Hypothesis 3). This situation can be explained, in part, by what Klapper and Love (2010) designate as slow-moving variables, the effects of which are revealed mainly in the long term. Based on these results, it is possible to conclude that a commitment to improve governance as a promoter of new business creation, in dimensions such as Rule of Law and Voice and Accountability, does not depend on circumstantial decisions, but is rather a long-term strategic bet.

From a government and policy point of view, our results show a supranational perspective is necessary as well as which factors related to governance have a more significant impact on entrepreneurship. International flows are changing at such an accentuated rate that governments have to develop specific policies and practices to support business creation according to other countries, so in the face of this reality, most countries are implementing new regulatory frameworks which are similar to their neighbours.

Our results show that governance has an effect on business creation, but entrepreneurship is not an ivory tower, there are multiple linkages between other economic and social fields with entrepreneurship and governance that must be consider. Therefore, we will increase awareness among researchers about the interrelation and impact of any governance. Models such as the quintuple helix (Carayannis & Campbell, 2010) visualise the collective interaction and exchange of knowledge through a circulation between societal subsystems.

This paper also presents some limitations that could open the way for further research. In particular, the six dimensions of governance of the WGI project were used, but other variables, such as 'education level', can be included to check links with entrepreneurship. Also, our main purpose was to evaluate the relations between governance and business creation using a regional perspective, but considering groups of countries, such as developed and developing countries, can offer another point of view. Finally, the number of regions considered are relative short.



This paper provides evidence that the regional context has a significant role in supporting entrepreneurship, and different variables have an immediate and delayed impact of governance on entrepreneurial entry rates, but it is not free of limitations, which leave room for future research. Futures studies could create new subsamples of countries considering the degree of intervention of the governments in the economies and introducing new control variables.

## 7. REFERENCES

- Acs, Z., Desai, S., & Hessels, J. (2008): "Entrepreneurship, Economic Development and Institutions", *Small Business Economics*, 31, 219–234.
- Aghion, P., Burgess, R., Redding, S., & Zilibotti, F. (2005): "Entry Liberalization and Inequality in Industrial Performance", *Journal of the European Economic Association*, 3(2-3), 291–302.
- Ajzen, I. (1991): "The Theory of Planned Behavior", *Organizational Behavior and Human Decision Processes*, 50, 179–211.
- Álvarez, C., Urbano, D., Coduras, A., & Ruiz, J. (2011): "Environmental Conditions and Entrepreneurial Activity: A Regional Comparison in Spain", *Journal of Small Business and Enterprise Development*, 18(1), 120–140.
- Amorós, J., & Bosma, N. (2013): "Global Entrepreneurship Monitor", *Global Report*.
- Amorós, J., & Masferrer, M. (2010): "Dynamics of Entrepreneurship and Quality of Government Institutions: An Evaluation Using Crosscountry Data", *Fourth Global Entrepreneur Monitor Research Conference*, October, 2010.
- Anokhin, S., Grichnik, D., & Hisrich, R. (2008): "The Journey from Novice to Serial Entrepreneurship in China and Germany: Are the Drivers the Same?", *Managing Global Transitions*, 6, 117–142.
- Aron, J. (2000): "Growth and Institutions: A Review of the Evidence", *World Bank Research Observer*, 15(1), 99–135.
- Bettignies, J., & Brander, A. (2007): "Financing Entrepreneurship: Bank Finance versus Venture Capital", *Journal of Business Venturing*, 26, 808–832.
- Beugelsdijk, S. (2007): "Entrepreneurial Culture, Regional Innovativeness and Economic Growth", *Journal of Evolutionary Economics*, 17, 187–210.
- Bjørnskov, C., & Foss, N. (2008): "Economic Freedom and Entrepreneurial Activity: Some Cross-country Evidence", *Public Choice*, 134, 307–328.
- Boettke, P. & Coyne C. (2009): "Context Matters: Institutions and Entrepreneurship", *Foundations and Trends in Entrepreneurship*, 5, 135–209.
- Bosma, N., & Schutjens, V. (2011): "Understanding Regional Variation in Entrepreneurial Activity and Entrepreneurial Attitude in Europe", *Annals of Regional Science*, 47, 711–742.
- Carayannis, E. G., & Campbell, D. F. J. (2010): "Triple Helix, Quadruple Helix and Quintuple helix and how Do Knowledge, Innovation and the Environment Relate to each other? A Proposed Framework for a Trans-disciplinary Analysis of Sustainable Development and Social Ecology", *International Journal of Social Ecology and Sustainable Development*, 1(1), 41–69.

- Carbonell, S. (2005): "The Entrepreneurial Environment in Latin America", In: Z. Acs, P. Arenius, M. Hay, & M. Minniti, *Global Entrepreneurship Monitor. Executive Report 2004*. Babson College/London Business School.
- Dau, L., & Cuervo-Cazurra, A. (2014): "To Formalize or not to Formalize: Entrepreneurship and Pro-market Institutions", *Journal of Business Venturing*, 29(5), 668–686.
- Dima, B., Lobont, O., & Moldovan, N. (2016): "Does the Quality of Public Policies and Institutions Matter for Entrepreneurial Activity? Evidences from the European Union's Member States", *Panoeconomicus*, 63(4), 425–439.
- Dreher, A., & Schneider, F. (2010): "Corruption and the Shadow Economy: An Empirical Analysis", *Public Choice*, 144, 215–238.
- Freytag, A., & Thurik, R. (2007): "Entrepreneurship and its Determinants in a Cross-country Setting", *Journal of Evolutionary Economics*, 17, 117–131.
- Gedeon, S. (2010): "What Is Entrepreneurship?", *Entrepreneurial Practice Review*, 1, 16–35.
- Görxhani, K. (2004): "The Informal Sector in Developed and less Developed Countries: Literature Survey", *Public Choice*, 120, 267–300.
- Ghani, E., Kerr, W., & O'Connell, S. (2014): "Spatial Determinants of Entrepreneurship in India", *Regional Studies*, 48(6), 1071–1089.
- Grosanu, A., Bota-Avram, C., Rachisan, P., Vesselinov, R., & Tiron-Tudor, A. (2015): "The Influence of Country-level Governance on Business Environment and Entrepreneurship: A Global Perspective", *Amfiteatru Economic*, 17(38), 60–75.
- Gugler, P., & Chaisse, J. (2009): *Competitiveness of ASEAN Countries: Corporate and Regulatory Drivers*. Cheltenham: Edward Elgar, New Horizon in International Business Series.
- Henrekson, M. (2007): "Entrepreneurship and Institutions", *Comparative Labor Law and Policy Journal*, 28, 717–742.
- Kaufmann, D., & Kraay, A. (2003): *Governance and Growth: Causality which Way? Evidence for the world*, World Bank Institute, Washington, DC.
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2006): *Governance Matters V: Governance Indicators for 1996-2005*. World Bank, Washington D.C.
- Kaufmann, D., Kraay, A., & Matruzzi, M. (2010): *The Worldwide Governance Indicators: Methodology and Analytical Issues*. World Bank Policy Research Working Paper No. 5430.
- Klapper, L., Amit, R., Guillén, F., & Quesada, J. (2007): *Entrepreneurship and Firm formation across Countries*. Research Working Paper No. 4313. World Bank, Washington D.C.
- Klapper, L., Laeven, L., & Rajan, R. (2006): "Entry Regulation as a Barrier to Entrepreneurship", *Journal of Financial Economics*, 82(3), 591–629.
- Klapper L., & Love, I. (2010): *The Impact of the Financial Crisis on new Firm Registration*. World Bank, Washington, D.C.
- Knoll, M., & Zloczysty, P. (2012): "The Good Governance Indicators of the Millennium Challenge Account: How many Dimensions Are Really being Measured?", *World Development*, 40, 900–915.

- Leckie, G. (2013): Three-level Multilevel Models – Concepts. LEMMA VLE Module 11, 1–47. <http://www.bristol.ac.uk/cmm/learning/course.html>. Accessed 15 January 2017.
- McMillan, J., & Woodruff, C. (2002): “The Central Role of Entrepreneurs in Transition Economies”, *Journal of Economic Perspectives*, 16(3), 153–170.
- Minniti, M., & Levesque, M. (2008): “Recent Developments in the Economics of Entrepreneurship”, *Journal of Business Venturing*, 23, 603–612.
- Naudé, W. (2010): “Entrepreneurship, Developing Countries, and Development Economics: New Approaches and Insights”, *Small Business Economics*, 34, 1–12.
- North, D. (1994): “Economic Performance Through Time”, *American Economic Review*, 84, 359–368.
- Nystrom, K. (2008): “The Institutions of Economic Freedom and Entrepreneurship: Evidence from Panel Data”, *Public Choice*, 136, 269–282.
- Obschonka, M., Schmitt-Rodermund, E., Gosling, S., & Silbereisen, R. (2013): “The Regional Distribution and Correlates of an Entrepreneurship-prone Personality Profile in the United States, Germany, and the United Kingdom: A Socioecological Perspective”, *Journal of Personality and Social Psychology*, 105, 104–122.
- Ong, K. (2006): “Enabling Effective Governance in ASEAN Community”, *CAPAM 2006 Biennial Conference*, Sydney, 23 October 2006. <http://www.asean.org/resources/>. Accessed 14 November 2016.
- Rabe-Hesketh, S., & Skrondal, A. (2012): *Multilevel and Longitudinal Modeling Using Stata (Vols. I + II (3rd ed.))*. Stata Press, College Station, TX
- Rose-Ackerman, S. (2004): “The Challenge of Poor Governance and Corruption. Copenhagen Consensus Challenge Paper”, [Copenhagenconsensus.com](http://copenhagenconsensus.com).
- Salimath, M., & Cullen, J. (2010): “Formal and Informal Institutional Effects on Entrepreneurship: A Synthesis of Nation-level Research”, *International Journal of Organizational Analysis*, 18(3), 358–385.
- Schneider, F., Buehn, A., & Montenegro, C. (2010): “New Estimates for the Shadow Economies all over the World”, *International Economic Journal*, 24(4), 443–461.
- Schumacher, I. (2013): “Political Stability, Corruption and Trust in Politicians”, *Economic Modelling*, 31, 359–369.
- Steele, F. (2014): Multilevel Modelling of Repeated Measures Data. LEMMA VLE Module 15, 1–62. <http://www.bristol.ac.uk/cmm/learning/course.html>. Accessed 12 January 2017.
- Tanzi, V., & Davoodi, H. (1997): “Corruption, Public Investment, and Growth”, International Monetary Fund Working Paper 97/139.
- Thai, M., & Turkina, E. (2014): “Macro-level Determinants of Formal Entrepreneurship Versus Informal Entrepreneurship”, *Journal of Business Venturing*, 29(4), 490–510.
- Thornton, P., Ribeiro-Soriano, D., & Urbano, D. (2011): “Socio-cultural and Entrepreneurial Activity: An Overview”, *International Journal of Small Business*, 29(2), 105–118.

- Van Stel, A., Storey, D., & Thurik, R. (2007): "The Effect of New Business Regulations on Nascent and Young Business Entrepreneurship", *Small Business Economics*, 28, 171–186.
- Wagner, J., & Sternberg, R. (2004): "Start-up activities, Individual Characteristics, and the Regional Milieu: Lessons for Entrepreneurship Support Policies from German Micro Data", *Annals of Regional Science*, 38, 219–240.
- Wennekers, S., Uhlaner, L., & Thurik, R. (2002): "Entrepreneurship and its Conditions: A Macro Perspective", *International Journal of Entrepreneurship Education*, 1, 25–68.
- Williamson, O. (2000): "The new Institutional Economics: Taking Stock, Looking Ahead", *Journal of Economic Literature*, 38, 595–613.
- World Bank (2013): What is Governance? <http://web.worldbank.org/>. Accessed 15 October 2016.