Chapter 6
Institutional Context, Entrepreneurial Activity, and Social Progress

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6.1 Introduction

As it was mentioned in previous chapters, the type of motivation, which entrepreneurs respond to, is likely to influence the contribution of entrepreneurial activity to economic growth (Audretsch, Bönte, & Keilbach, 2008; Audretsch & Keilbach, 2008). Accordingly, entrepreneurship is a factor that must be considered in the analysis of growth theory, and therefore further results should be taken into account for policy implications (Solow, 2007). Audretsch and Keilbach (2004a, 2004b, 2004c, 2008), exploring entrepreneurship as capital endowment required for economic growth, emphasize the importance of understanding those factors affecting entrepreneurship in order to understand the key role played by entrepreneurship in the growth process. Here, the institutional environment has been posited as influencing the impact of entrepreneurship on economic performance (Baumol & Strom, 2007; Méndez-Picazo, Galindo Martín, & Ribeiro-Soriano, 2012).

North and Thomas (1973) suggest that institutions influence those endogenous factors that have a direct impact on economic development. This process must be understood not only in terms of income but also in terms of broader social characteristics (Sen, 1999). Economic growth and its measurement need to be rethought, challenged and considered in a broader context (Henderson, Storeygard, & Weil, 2012). According to Henderson et al. (2012), economic performance is the individual self-expression that is related to the minutest aspects of society. Accordingly, Young (2012) claims that alternative economic performance measures need to go beyond merely measuring economic growth in a narrow sense per se, but need to incorporate the socio-economic evolution of individuals at both the subnational and country levels. For instance, Sen (1999) suggests a multidimensional criterion to capture the real evolution of a society. Instead of limiting the economic development measure to income criteria, other factors should also be included, such as education, health, environment, among others, in order to obtain not only an ordinal

measure but also a cardinal approach. Thus, several indicators such as the Human Scale Development (Max-Neef, Elizalde, & Hopenhayn, 1991), Human Development Index (Desai, 1991) and The Standard of Living (Sen, 1988), among others, have been introduced in economic development analysis.

The Social Progress Imperative, a non-profit organization, recently proposed a recent index that embraces this broader perspective. This index is composed of three dimensions that contain factors such as the creation of opportunities—personal rights, access to higher education, personal freedom and choice, and equity and inclusion—; the foundations of well-being—access to basic knowledge, access to information and communications, health, and wellness and ecosystem sustainability—; and basic human needs—nutrition and basic medical care, air, water and sanitation, shelter, and personal safety. These elements conform to the social progress index (SPI), which has the main purpose to measure the development stage of each country. According to Stern, Wares, Orzell, and O'Sullivan (2014), the theoretical foundations of SPI combine institutional perspectives of the development process. Hence, productive outcomes, human capabilities and institutional setting are assumed to create a more comprehensive measure of development, which is represented by social progress. In addition, Stern et al. (2014) aim to understand social progress as the interaction of three levels—individual, represented by capabilities; organizational, which is associated with productive outcomes; and environmental as a result of the institutional configuration. Similar to North and Thomas (1973), the authors analyze the phenomena from an institutional perspective.

Thus, using the theoretical approach of institutional economics (North, 1990, 2005), the main purpose of this chapter is to examine whether and how a country's institutional context influences the manner in which entrepreneurial activity affects social progress. Although this framework has been applied to the field of entrepreneurship with social outcomes (Aidis, Welter, Smallbone, & Isakova, 2007; Stephan, Uhlaner, & Stride, 2015; Terjesen, Hessels, & Li, 2016; Urbano, Ferri, Peris-Ortiz, & Aparicio, 2017), Audretsch and Keilbach (2008), Audretsch et al. (2008), and Baumol and Strom (2007) claim that more studies concerning the interrelationship between institutional context, entrepreneurial activity and social progress are needed. Through this, two distinct and disparate lines into the field of entrepreneurship research could be combined together, suggesting new elements for both theoretical and policy implications (Carlsson et al., 2013).

Considering simultaneously the impact of institutional context on entrepreneurial activity, and this variable's effect on social progress, we are able to address biases resulting from estimation of a simple unidirectional model. The virtue of this approach is not only in the correction of the statistical bias. By explicitly instrumenting entrepreneurship in a second equation, we are able to analyze how different public strategies could actually influence social progress by generating more entrepreneurial activity. In addition, since the traditional approach to progress and development has been GDP-oriented, this research tries to go further by applying a simultaneous equation to the analysis of social progress as an index of economic development driven by entrepreneurial activity.

Using pooled data with information over the period 2012 and 2014 from the Global Entrepreneurship Monitor (GEM), the Social Progress Imperative, World Development Indicators (WDI), Doing Business (both from World Bank) and Center for Systemic Peace, we provide empirical evidence of the impact of the number of tax payments, the time required to start a business, and established democracy on entrepreneurial activity (measured through the number of owners in start-up and new businesses and the ratio between opportunity and necessity entrepreneurship), and these two measures of entrepreneurship on social progress index.

The reminder of this chapter is as follows. In Sect. 6.2, we discuss the theoretical framework, which is based on institutional economics. Section 6.3 presents the data and model, and Sect. 6.4 describes and discusses the results. Section 6.5 presents policy implications. And finally, we make our conclusions and highlight the future research lines in Sect. 6.6.

6.2   Conceptual Framework

As mentioned in Chap. 1, understanding institutions as the rules of the game (North, 1990, 2005), it is possible to reduce the transaction costs (through formal institutions) and the uncertainty caused by the social interactions (through informal institutions). According to North and Thomas (1973), institutions do not impact directly on economic development, rather they act as fundamental determinants that either encourage or discourage the productive process that ultimately generates growth and development. This simple scheme opens up questions about which endogenous factors could be affected by institutions that are conducive to development.

6.2.1   Institutions and Entrepreneurial Activity

As discussed in Chap. 1, Bruton, Ahlstrom, and Li (2010) and Carlsson et al. (2013) emphasize that the field of entrepreneurship has become more robust by using an institutional lens to understand the variation of entrepreneurial activity across countries. In particular, Bruton et al. (2010) and Baumol and Strom (2007) suggest that, taking into account this the link to institutions, the evolving domain of entrepreneurship should be considered as an important element to be included in the complex process of development.

Drawing on Gnyawali and Fogel (1994), many authors have empirically estimated the effect of government regulation on entrepreneurship (Djankov, La Porta, Lopez-De-Salines, & Shleifer, 2002; van Stel, Storey, & Thurik, 2007). For example, Djankov et al. (2002) found that those governments creating many regulations as control mechanisms discourage the intention to become an entrepreneur. Their analysis suggests that firms have to pay taxes to operate internally and must have the amount of capital subscribed, resulting in a bias towards formalized firms. Djankov

et al. (2002) show that those developed countries ranked the highest in terms of the (least) amount of taxes required to start a new business are actually characterized by a strong welfare state. In the middle and lower part of the ranking appear those developing countries requiring higher levels of taxes to start a new business. Van Stel et al. (2007) conducted a similar exercise with new data, and although their findings are not conclusive in terms of the amount of taxes required to start a new business, they show that bureaucracy deters entrepreneurial activity. Another similar conclusion drawn is that young firms prefer to locate their plants where better regulatory protection is offered (Chowdhury, Desai, Audretsch, & Belitski, 2015; Coeurderoy & Murray, 2008). However, Fisman and Svensson (2007) find that taxes not only affect the creation of a firm but also its future growth. They provide evidence regarding the case of Uganda, where a 1% increase in taxes implies a 3% decrease in the growth of firms. Lawless (2013) suggest that the amount of taxes also discourages foreign direct investment, which implies a lower level of capital from abroad. This, in turn, deters new business formation and firm growth. Croce, Kung, Nguyen, and Schmid (2012) find that fiscal policy implemented during the crisis period affected the productivity growth and distorted profits. Djankov, Ganser, McLiesh, Ramalho, and Shleifer (2010) investigate how taxes affect both investment and entrepreneurship. They provide evidence suggesting that taxes have a large adverse impact on financial channels, such as aggregate investment and foreign direct investment, hence affecting entrepreneurial activity (Belitski, Chowdhury, & Desai, 2016). Thus, we propose the following hypothesis:

Hypothesis 1: The number of tax payments has a negative effect on entrepreneurial activity.

Djankov et al. (2002) also analyze other regulatory factors that affect firm entry, which are related to intangible assets such as time. While Djankov et al. (2002) find that time is negatively related to new-firm formation, van Stel et al. (2007) conclude that these variables are unrelated. Nonetheless, Muñoz and Kibler (2016) discuss that productivity is lost dealing with inefficient bureaucracies and regulations that take up a lot of time. Empirically, Monteiro and Assunção (2012) analyze the impact of bureaucracy simplification on the time required to start a business with microenterprise formalization in Brazil. They observe that the number of start-ups increases when the length of the bureaucracy process is reduced. The estimated results suggest that the implementation of procedure reforms increases the new-firm formation rate by one percentage point. Furthermore, in terms of job creation, Branstetter, Lima, Taylor, and Venâncio (2014) came to similar conclusions in the case of Portugal. Here, the bureaucratic costs imposed in terms of time required to start a business is found to deter the entrepreneurship that creates employment. Aparicio, Urbano, and Audretsch (2016) found that the time required to create a startup has a negative impact on entrepreneurship. Their results show that regulations benefit the incumbent firms, discouraging competition across the industry and ultimately reducing economic growth. Stenholm, Acs, and Wuebker (2013) found similar results. They extend the analysis assessing the impact not only on the rate of entrepreneurial activity, but also on the type of entrepreneurial activity. Stenholm et al.

(2013) show that although regulations such as the time to start a business have little impact on innovative and high-growth new ventures, the effect is negative. On the basis of this reasoning we offer the following hypothesis:

Hypothesis 2: The time required to start a business negatively affects entrepreneurial activity.

Van Stel et al. (2007), Terjesen, Hessels, and Li (2016), Djankov et al. (2002), and Angulo-Guerrero, Pérez-Moreno, and Abad-Guerrero (2017) discuss the regulatory factors together with the legal origin and political structure. According to these authors, the importance of this discussion is associated with who legislates the regulations and what benefits are obtained from them. Djankov et al. (2002) provide evidence that the autocratic, socialist and French legal system tends to increase regulatory constraints. The next question should be whether these consolidated political structures affect entrepreneurial activity or not. For instance, van Stel et al. (2007) discuss how established democracy sets up the regulatory factors that affect nascent and young firms. Aidis et al. (2007) analyze how the transition from a socialist structure to a more democratic one affects female entrepreneurship. Pinotti (2012) provides empirical evidence suggesting that the trust generated in democracies tends to undermine the regulatory processes, and hence encourages entrepreneurial activity and market competition. Acemoglu (2008) finds that democracies tend to facilitate the entry of new business into each industry and thus contributes to a more efficient income distribution. Ireland, Tihanyi, and Webb (2008) highlight that democracies with articulated societies tend to encourage entrepreneurial activity, while populism and socialism tend to deter entrepreneurship. Accordingly, we propose the following hypothesis:

Hypothesis 3: Countries with an established democracy positively influence entrepreneurial activity.

6.2.2   Entrepreneurship and Social Progress

It is suggested that entrepreneurship plays an important role not only in terms of economic growth, but also in terms of social progress (McMullen, 2011; van Praag & Versloot, 2007; Wennekers & Thurik, 1999). Nonetheless, the extant literature linking entrepreneurship to economic development has not analyzed actual measures of social progress. This question can be explored further by considering the capacity to create new firms and at the same time to generate new knowledge into society. Indeed, Audretsch and Keilbach (2008) suggest that entrepreneurial activity could be a key factor in generating higher growth and development by creating knowledge spillovers.

According to Reynolds et al. (2005), entrepreneurial activity can be considered a relevant factor that encourages individuals to pursue market opportunities and creates benefits for themselves as well as for society. In this regard, it is recognized that

entrepreneurs have potential to contribute to prosperity and economic welfare (Blackburn & Ram, 2006; Urbano & Alvarez, 2014). Thus, entrepreneurship acts as a gear within the complex engine of economic development (Audretsch et al., 2008). Additionally, Audretsch et al. argue that those individuals pursuing an entrepreneurial career tend to include more people into the development process of new products and services based on new knowledge. This, in turn, creates synergies that are useful to acquire competitive advantage vis-a-vis other entrepreneurs. In this sense, Wong, Ho, and Autio (2005) and Noseleit (2013) point out that entrepreneurship rates reflect the creation of knowledge and technology that could affect positively on social progress. Moreover, Carree, van Stel, Thurik, and Wennekers (2007) associate the innovative capacity of the owners with the level of social progress. Following these authors, countries with a high level of innovative activity tend to encourage the virtuous circle constituted between business ownership and social progress. In addition, Carree et al. (2007) suggest that these countries tend to facilitate new business creation in order to generate permanent progress for the entire society. Thus, we propose the following hypothesis:

Hypothesis 4: The number of business owners is positively related to social progress.

As Reynolds et al. (2005) suggest, entrepreneurs should be differentiated based on their motivations, which are associated with the capacity to perceive opportunity and transform it into a new business. As mentioned in previous chapters, those countries that exhibit a high degree of opportunity entrepreneurship are expected to be highly developed in terms of social and economic characteristics; whereas those individuals in developing countries that are not employed and the labor market is very restrictive to them, find in necessity entrepreneurship an escape. By definition, those countries that present higher rates of necessity entrepreneurship tend to suffer from high rates of unemployment, a large underground or informal economy and social disadvantages. In this sense, the policy prescription is to prioritize the motivation towards opportunity entrepreneurship, given its high value to society (Ács, Autio, & Szerb, 2014; Acs, Desai, & Hessels, 2008; Devece, Peris-Ortiz, & Rueda-Armengot, 2016). On these bases, various authors have approached the analysis of entrepreneurial activity by assessing the ratio between opportunity and necessity entrepreneurship, which co-exist together according to the institutional context (Acs & Amorós, 2008; Block, Sandner, & Spiegel, 2015). For instance, Acs, Desai, and Hessels (2008) provide evidence that the ratio of opportunity entrepreneurship with respect to necessity entrepreneurship is positively correlated with economic development measured through GDP per capita. In addition, Block and Koellinger (2009) analyze the satisfaction with start-ups in order to contribute to well-functioning economies. These authors find that satisfaction is positively correlated with the ratio between the opportunity–necessity entrepreneurship ratio. On the basis of these considerations, we propose the following hypothesis:

Hypothesis 5: The ratio of opportunity entrepreneurship with respect to necessity entrepreneurship is positively related to social progress.

6.3   Methods

As we noted earlier, the objective of this chapter is contributing to the literature by linking a country's institutional environment to the way in which entrepreneurial activity affects social progress. Given the interplay between these variables (Aparicio et al., 2016; Audretsch & Keilbach, 2008), we specify the economic development process throughout two equations approach. The first equation considers this recursive structure explicitly as well as the other variables that affect entrepreneurship. Hence, this equation is specified as:

$$EA_i = f\left(IC_i, x_i\right) \tag{6.1}$$

where IC_i represents the institutional context, and x_i is the vector of control variables that influence entrepreneurial activity (EA) in country i. The vector of control variables refers to the gross domestic product (GDP) per capita.

To specify the institutional context, entrepreneurial activity and social progress, a development function that includes an explicit measure of entrepreneurial activity is estimated. On this basis, we are able to test the impact of the institutional context on entrepreneurship on the one hand and the impact of entrepreneurship on social progress on the other. The second equation has the following form:

$$SP_i = f\left(EA_i, z_i\right) \tag{6.2}$$

where SP_i is the social progress of country i, measured as an index between 0 and 100, EA_i represents its endowment of entrepreneurial activity, and z_i represents a vector with control variables reflecting the stage of development—K_i is country i's endowment of capital, X_i is country i's exports volume. Thus, Eq. (6.2) specifies formally that entrepreneurship contributes to the social progress of countries. The extent to which we apply this methodology, it might be possible to enhance the model presented by Audretsch and Keilbach (2004b, 2004c, 2008) and Audretsch et al. (2008). Therefore, we focus on these two equations, which are estimated simultaneously using three-stage least-squares regression (3SLS) to correct for the simultaneity bias (Zellner & Theil, 1962). Similar models have used this method to estimate the relationship between entrepreneurship and economic growth, because of their ability importance to estimate efficiently models with bi-causality (Aparicio et al., 2016; Audretsch & Keilbach, 2008).

Thus, we use pooled data for the period 2012–2014. Our first dependent variable, entrepreneurial activity, is an indicator of the Global Entrepreneurship Monitor (GEM), which is measured as the number of owners in startups and new firms, as well as using opportunity Total Entrepreneurial Activity (TEA) and necessity TEA. Opportunity TEA shows those entrepreneurs who are motivated to pursue perceived business opportunities, while necessity TEA captures those entrepreneurs who cannot get a job.

The second dependent variable is the economic development indicator, obtained through three dimensions that contain creations of opportunities, the foundations of

well-being, and basic human needs. The three dimensions conform to the Social Progress Index. The sources of data to measure these dependent variables are the GEM and the Social Progress Imperative.

The data for the independent variables, specifically those that reflect the institutional context, were obtained from Doing Business (the number of taxes paid by the firms and the time required to start a business) and Center for System Peace (established democracy). Meanwhile, data on the GDP per capita were obtained from the World Development Indicators (WDI) database. The number of taxes paid by firms measures the total amount of taxes reported by the chamber of commerce in each economy; the time required to start a business is the total days that it takes any new firm to register in the chamber of commerce; and established democracy is an 11-point scale (0–10), derived from codings of the competitiveness of political participation, the openness and competitiveness of executive recruitment, and constraints on the chief executive. Gross capital formation (K), obtained from the WDI, is measured in constant values at 2005 $US; and exports refer to the value of all goods and other market services provided to the rest of the world as a percentage of constant GDP.

Table 6.1 presents a list of the dependent and independent variables used in this study, including their sources. Our final sample consists of pooled data with 87 observations and 63 countries (see Appendix 7).

6.4   Results and Discussion

Table 6.2 reports the means, standard deviations and correlation coefficients of the previous variables. As Table 6.2 shows, both measures of entrepreneurial activity are significantly correlated with tax payments, time to start a business and established democracy. Furthermore, the social progress index is significantly correlated with exports as well as both measures of entrepreneurial activity. Given the correlations among the independent variables, we test for the problem of multicollinearity in both equations through variance inflation factor (VIF) computations, which might affect the significance of the main parameters in the regressions. Although 3SLS does not allow the VIF to be obtained directly, we compute this test separately for each equation in models 4 and 8, which assess the two measures of entrepreneurship and social progress, respectively. The VIF values are low (lower than 1.86 for Eq. 6.1 and 1.08 for Eq. 6.2 in model 4; and 1.86 for Eq. 6.1 and 1.07 for Eq. 6.2 in model 8).

Table 6.3 shows the results of linear regressions with robust variance estimates. Models 1, 2, 3 and 4 consider both equations but the dependent variable of Eq. 6.1 is the ratio between opportunity and necessity entrepreneurship, while in Eq. 6.2 the dependent variable is the opportunity index, foundations of well-being index, basic human needs index, and the overall social progress index, respectively. Models 5, 6, 7 and 8 are similar to the previous models, but in this case, the dependent variable of Eq. 6.1 is the number of business owners. All the models are highly significant

Table 6.1 Description of variables

Variable	Description	Source[a]
Equation 1		
Business owners	Average number of owners in start-up or young business	GEM 2012–2013
Opportunity/ necessity TEA	Ratio computed with TEA opportunity and TEA necessity. TEA opportunity and necessity: Total Entrepreneurial Activity reporting opportunity or necessity as a major motive, respectively	GEM 2012–2013
Tax payments	The total number of taxes and contributions paid, during the 2nd year of operation	Doing business 2012–2013
Time to start a business	The median duration (in days) necessary to complete a procedure with government agencies and no extra payments	Doing business 2012–2013
Established democracy	Additive 11-point scale (0–10), derived from the competitiveness of political participation, the openness and competitiveness of executive recruitment, and constraints on the chief executive	Center for systemic peace 2012–2013
GDP per capita	Sum of gross value added by all resident producers in the economy divided by midyear population. Constant values at 2005 US$	WDI 2012–2013
Equation 2		
Social progress index	The index scores from a 0 to 100 scale, created through individual indices such as opportunity, foundations of wellbeing and basic human needs	The social progress imperative 2013–2014
Opportunity index	Based on 0–100 scale, the index measures the degree to which a country's population is free of restrictions on its rights and its people are able to make their own personal decisions	The social progress imperative 2013–2014
Foundations for wellbeing index	Based on 0–100 scale, the index measures whether a population has access to basic education, ideas and information from both inside and outside their own country	The social progress imperative 2013–2014
Basic human needs index	Based on 0–100 scale, the index assesses how well a country provides for its people's essential needs by measuring whether people have enough food to eat and are receiving basic medical care and healthy services	The social progress imperative 2013–2014
Capital	Fixed assets of the economy plus net changes in the level of inventories. Constant values at 2005 US$	WDI 2012–2013
Exports	Value of all goods and other market services provided to the rest of the world, respect to the GDP	WDI 2012–2013

[a]*GEM* Global Entrepreneurship Monitor: http://www.gemconsortium.org/; Doing Business: http://http://www.doingbusiness.org; Center for Systemic Peace: http://http://www.systemicpeace.org; The Social Progress Imperative: http://http://www.socialprogressimperative.org

(p < 0.001) and have a relatively high explanatory power, explaining 40.3% of the variance in entrepreneurial activity and 13.8% of the variance in social progress. In addition, for models 4 and 8, we compute the Hausman test to compare the coefficients obtained with Ordinal Least Square (OLS) and 3SLS. The results show that

Table 6.2 Descriptive statistics and correlation matrix

	Mean	Std. Dev	1	2	3	4	5	6	7	8
1 Ln business owners	0.522	0.162	1							
2 Ln opportunity/necessity TEA	1.137	0.577	0.306*	1						
3 Ln social progress index	4.147	0.233	0.458*	0.384*	1					
4 Ln tax payments	2.653	0.697	−0.442*	−0.359*	−0.384*	1				
5 Ln time to start a business	2.785	0.825	−0.425*	−0.329*	−0.415*	0.316*	1			
6 Established democracy	7.989	2.687	0.409*	0.354*	0.621*	−0.223	−0.354*	1		
7 Ln GDP per capita	9.016	1.386	0.606*	0.501*	0.740*	−0.548*	−0.441*	0.669*	1	
8 Ln capital	25.119	1.628	0.224	0.089	0.182	−0.480*	−0.191	0.122	0.475*	1
9 Ln exports	3.535	0.480	−0.038	0.155	0.309*	0.115	−0.278	0.176	0.245	−0.221

*$p < 0.01$

Table 6.3 Results of simultaneous equation through three-stage least-square (3SLS)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep. variable Eq. 6.1	Ln opportunity/ necessity TEA	Ln opportunity/ necessity TEA	Ln opportunity/ necessity TEA	Ln opportunity/ necessity TEA	Ln business owners	Ln business owners	Ln business owners	Ln business owners
Ln tax payments	−0.210**	−0.237**	−0.219**	−0.218**	−0.053**	−0.058**	−0.056**	−0.055**
	(0.104)	(0.110)	(0.105)	(0.105)	(0.023)	(0.025)	(0.025)	(0.024)
Ln time to start a business	−0.087	−0.146*	−0.146*	−0.124*	−0.032*	−0.048***	−0.049***	−0.042**
	(0.075)	(0.079)	(0.076)	(0.075)	(0.017)	(0.018)	(0.018)	(0.018)
Established democracy	0.070**	0.041	0.044	0.054	0.025***	0.020**	0.020**	0.022***
	(0.033)	(0.034)	(0.034)	(0.033)	(0.008)	(0.008)	(0.008)	(0.008)
Ln GDP per capita	0.072	0.062	0.067	0.068	0.004	−0.000	0.001	0.002
	(0.086)	(0.087)	(0.086)	(0.086)	(0.019)	(0.020)	(0.020)	(0.020)
Constant	0.715	1.274	1.149	1.003	0.499***	0.639***	0.625***	0.581***
	(0.855)	(0.875)	(0.859)	(0.857)	(0.188)	(0.200)	(0.199)	(0.194)
R^2	0.287	0.329	0.326	0.317	0.382	0.410	0.409	0.403
Dep. variable Eq. 6.2	Ln opportunity index	Ln foundations of wellbeing index	Ln basic human needs index	Ln social progress index	Ln opportunity index	Ln foundations of wellbeing index	Ln basic human needs index	Ln social progress index
Ln capital	0.044	0.011	0.066	0.039	0.055	0.020	0.079**	0.050
	(0.039)	(0.038)	(0.051)	(0.039)	(0.034)	(0.032)	(0.040)	(0.032)
Ln exports	0.117	0.154**	0.244**	0.171**	0.130**	0.160***	0.260***	0.184***
	(0.075)	(0.076)	(0.099)	(0.076)	(0.057)	(0.057)	(0.072)	(0.056)
Ln opportunity/ necessity TEA	0.300**	0.181	0.286*	0.252**				
	(0.125)	(0.122)	(0.163)	(0.126)				
Ln business owners					1.126***	0.645*	1.018**	0.912***
					(0.365)	(0.342)	(0.434)	(0.347)
Constant	2.183**	3.130***	1.340	2.257**	1.635*	2.760***	0.749	1.756**
	(1.082)	(1.059)	(1.414)	(1.089)	(0.863)	(0.809)	(1.026)	(0.820)
R^2	0.129	0.107	0.164	0.138	0.011	0.089	0.225	0.133
Observations	62	62	62	62	62	62	62	62

Robust standard errors in parentheses
*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$

the coefficients of both equations modeled through the techniques are not significantly different (p > 0.1) for both models. However, according to Baltagi (2005, p. 127), if the null hypothesis of the Hausman test is not rejected, this means that the expected value of the residuals tends to be zero, which implies good specification of the models. Here, the 3SLS estimators are consistent and asymptotically more efficient than single equation estimators obtained through OLS. Thus, 3SLS appears an appropriate technique to produce better results.

Regarding model 1, the results indicate that the number of tax payments and established democracy are highly significant, as predicted. On the one hand, the number of tax payments generates a reduction in the opportunity–necessity entrepreneurship ratio, which is positively associated with the opportunity index; on the other hand, the established democracy is positively associated with the ratio, and thus the opportunity in society. Similarly, the results of model 2 show that the number of tax payments and the time required to start a business have a negative and significant influence (p < 0.1) on the entrepreneurship ratio. However, this variable seems not to be significant in explaining the variations of foundations of well-being. Model 3 indicates that only the number of tax payments and the time required to start a business are highly significant and have the expected signs of the coefficients. Nonetheless, the entrepreneurship ratio does not have a significant impact on the basic human needs index. In the case of model 4, both the number of tax payments and the time required to start a business have a negative impact on the opportunity–necessity entrepreneurship ratio (p < 0.1), which explains the variations of the social progress index (p < 0.05). Similarly, in models 5, 6 and 7 the opportunity–necessity entrepreneurship ratio explains the variation of the dimensions of social progress: opportunity index, foundations of well-being index and basic human needs index, respectively. For all these models, the regulatory institutions, such as the number of tax payments and the time required to start a business, negatively affect (p < 0.1) the variation of the number of business owners, on the one hand; on the other, the established democracy is positively related to this variable. Finally, model 8 shows that both regulatory institutions used in previous models have a negative effect on the number of business owners, which is highly related to the Social Progress Index (p < 0.01).

Concerning the hypotheses testing, we follow the measures of institutions suggested by Voigt (2013), which try to reflect the regulatory atmosphere and political system of each country. For instance, Hypothesis 1 posits that the number of tax payments has a negative influence on entrepreneurship. In our case, all models show that this variable has a negative and significant influence on entrepreneurship in all countries (for models 1–4, an average impact of b = −0.221, p < 0.05; and for models 5–8, an average impact of b = −0.056). Therefore, hypothesis 1 is supported by the data. The results show a negative relationship between the number of tax payments and entrepreneurship, similar to the relationship found in previous studies (Belitski et al., 2016; Djankov et al., 2010; Fisman & Svensson, 2007). Thus, with one additional percentage of the number of tax payments, entrepreneurship decreases by 0.221% for models 1–4, and 0.056% in models 5–8.

Hypothesis 2 suggests that time required to start a business has a negative influence on entrepreneurship. This hypothesis is supported by our data, which is generally consistent with the literature; the presence of bureaucratic constraints, such as the time required starting a business, decreases entrepreneurship (Branstetter et al., 2014; Monteiro & Assunção, 2012). Although this variable is not statistically significant in model 1, the result is expected. Models 2–4 show that the time required to start a business has a negative and significant influence on entrepreneurship in all countries (for models 2–4, the average impact is b = −0.139, p < 0.1; and for models 5–8, there is an average impact of b = −0.043). Thus, with one additional percentage in the amount of the time required to start a business, entrepreneurship decreases by 0.139% for models 2–4, and by 0.043% in models 5–8.

Hypothesis 3 suggests that an established democracy has a positive influence on entrepreneurship. Although the outcome is the expected one for all estimated models, only the coefficients in models 1 and 5–8 are positive and significant, supporting hypothesis 3; thus, countries with an established democracy encourage entrepreneurial activity (for model 1, an impact of b = 0.070, p < 0.05; while for models 5–8, an average impact of b = 0.022). These results support the conclusions of Djankov et al. (2002) and van Stel et al. (2007), who analyze the regulatory structure of each country based on their political system. According to these authors, the regulatory regime tends to affect entrepreneurship less in those countries with an established democracy or where there is a transition towards this system. For instance, Aidis et al. (2007) provide evidence showing that entrepreneurial activity is more dynamic in countries undergoing a transition process from communism to democracy. Also, Acemoglu (2008) suggests that the free market in democratic countries increases the opportunity for those new firms that are trying to enter into a specific industry. Accordingly, the entrepreneurial activity increases by 0.070% when countries have a well-established democracy (model 1), and 0.022% for models 5–8.

Hypotheses 6.4 and 6.5 posit that social progress is influenced positively by entrepreneurship, measured as the number of business owners, and the opportunity–necessity entrepreneurship ratio, respectively. We find that entrepreneurship is positively related to social progress (b = 0.252, p < 0.05, in model 4; and b = 0.912, p < 0.01, in model 8). As we mentioned before, both measures of entrepreneurial activity define different characteristics in each country in terms of the development process. According to Wong et al. (2005), opportunity entrepreneurial activity impacts positively on economic development. However, they do not find statistically significant evidence. In contrast, our results suggest that for each country in our sample, if entrepreneurship increases by 1%, the social progress index will increase by 0.252% (model 4) and 0.912% (model 8), ceteris paribus. This is consistent with Audretsch and Keilbach's (2004a) results. Furthermore, we point out that the effect of these two measures of entrepreneurship on social progress does not differ significantly among these countries. This idea, supported by Valliere and Peterson (2009), suggests that those countries that encourage entrepreneurial activity based on innovation could obtain improved outcomes in terms of economic per-

formance. Therefore, we could suggest that entrepreneurship has a relevant role in promoting social progress, in which institutional context is a factor that has a relevant influence. In addition, according to Braunerhjelm, Acs, Audretsch, and Carlsson (2010), entrepreneurial activity is a key missing link in converting knowledge into economically relevant knowledge; therefore, spillovers could be generated to increase economic development.

6.5   Policy Implications

The analysis of these results in terms of policy implications concerns both models using simultaneous estimation. Our results provide compelling empirical evidence regarding the approach proposed by Reynolds et al. (2005, p. 206), who suggest that entrepreneurial activity depends on the institutional context, and its effects are reflected in economic development (social progress). Thereby, factors such as regulations and political context are associated with formal institutions. The appropriate external context could help to facilitate a favorable endowment of entrepreneurship, which in turn is instrumental in the process of economic development. Given our results, public policy in general and regulatory agencies, in particular, should be consistent with the entrepreneurial intentions of individuals, as well as encouraging the long-run pursuit of opportunities in order to transform them into new businesses. We could suggest that a higher stable political system is essential to incentive a structure more compatible with entrepreneurship, which will ultimately promote social progress. Concerning tax payments and the time required to start a business as entry barriers, these should be relaxed to reduce the unnecessary bureaucracy that impedes entrepreneurial activity. Countries in our sample should find an appropriate balance between the capacity of regulation, in terms of procedures, and taxes in order to provide an incentive structure that is most conducive to the creation of new business.

Given results for our entrepreneurship measures, imply, by definition, that productive outcomes and human capabilities are impacted by the institutional context. This finding is consistent with the model proposed by Gnyawali and Fogel (1994), who identify those different elements involved in the entrepreneurial process which is also useful in spurring economic development. In this case, institutional dimensions such as regulatory, socioeconomic and nonfinancial assistance play a key role in fostering entrepreneurial activity, which at the same time facilitates the creation of opportunities (one of the dimensions in the SPI). This dynamic could imply that each strategy to increase the number of new business owners and entrepreneurs motivated by opportunity introduces a positive and constant loop, leading to a virtuous path of economic development.

The social process in which more entrepreneurs are involved is also beneficial in terms of well-being and human needs. Bruton, Ketchen, and Ireland (2013) discuss the importance of entrepreneurship as a mechanism to solve the problems of poverty in society. They suggest that one possible solution is to design incentives

encouraging individuals to become entrepreneurs. Our results are consistent with their conclusion in the sense that social progress, influenced by entrepreneurship, contains access to basic knowledge, information and communication, health, ecosystem sustainability, nutrition and basic medical care, air, water and sanitation, shelter and personal safety. Hence, a focused entrepreneurship strategy also facilitates access to all of these social requirements. Higher and improved results could be obtained if entrepreneurs are oriented towards a social system that breaks the vicious cycle of the poverty trap.

Shane (2009) emphasizes that entrepreneurial policy must be aimed at those entrepreneurs related to innovation and enjoy a higher likelihood of survival. This implies the provision of education and skills to all people in order that they can pursue innovative goals useful for them as well as for the rest of society. The opportunity–necessity entrepreneurship ratio is an example of the importance of either increasing opportunity entrepreneurship or decreasing necessity entrepreneurship, or a combination of both.

6.6   Conclusions

In this chapter, pooled data (for the periods 2012 and 2014) were used to examine how a country's institutional environment influences the way in which entrepreneurial activity affects social progress. Using the conceptual framework of institutional economics, we analyzed the influence of the number of tax payments, the time required to start a business and the established democracy on entrepreneurial activity, which at the same time allows for the achievement of social progress. The empirical results suggest that for all of the countries included in the sample, the institutions analyzed exert a strong and important influence on entrepreneurship, which in turn, is found to enhance social progress.

Three main results from this chapter should be highlighted. First, there is evidence that the institutional context affects entrepreneurial activity. This follows the recent results in the entrepreneurship literature, which has identified institutions as playing an important role in explaining entrepreneurship (Bruton et al., 2010; Thornton, Ribeiro-Soriano, & Urbano, 2011). Secondly, we found a positive relationship between entrepreneurial activity and social progress. These results suggest that entrepreneurship is a factor not only in achieving economic growth, but also in influencing economic development and social progress. Hence, it is important that public policy has a broad comprehension of the complex process in order to redefine the strategies conducive to entrepreneurial activity in each national context. In terms of long-term development, strategies related to enhancing the number of individuals involved in each business idea, as well as entrepreneurship driven by opportunity, are important. Thirdly, by combining the two sides of entrepreneurship research discussed by Carlsson et al. (2013), we would emphasize that institutions reflecting the regulatory regime and political system stability influence entrepreneurial activity, which ultimately will foster social progress. Here, theoretical and policy

implications could be derived, concerning the institutional factors that affect growth and development (North, 1990) through entrepreneurship.

Finally, some limitations regarding the sample size and short period of analysis need to be emphasized. Other data sets could only provide a greater sample for a heterogeneous group of countries, but not for specific ones such as developing countries. Additional institutional factors should be considered, as well as single index of entrepreneurial activity such as overall or innovative TEA (as shown in Chaps. 4 and 7), self-employment or the number of new firms registered. In that sense, it is possible to follow the studies by Urbano and Alvarez (2014) and Audretsch et al. (2008), in order to analyze how the institutions analyzed in these papers could also encourage entrepreneurial behavior and therefore enhance social progress.

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