ROVIRA I VIRGILI UNIVERSITY
FACULTY OF ECONOMY AND ENTERPRISE
DEPARTMENT OF ECONOMY

INFLUENCE OF REGULATORY ENVIRONMENT ON ENTREPRENEURSHIP WITHIN THE INSTITUTIONAL PILLARS IN SELECTED OECD COUNTRIES

Author:

IGOR MERKUSHOV

Supervised by:

LUIS DIAZ-SERRANO

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Abstract

Institutions are a significant determinant of entrepreneurial behavior. In this study the influence of different regulative factors on the early-stage business in the OECD countries in 2006-2020 was estimated within the framework of the Regulative, Normative and Cultural-cognitive institutional pillars. The results suggest that facilitating of the import and export procedures enhances entrepreneurship activity, while lowering of tax burden imposes a negative effect in the presence of a non-linear relationship. It was also demonstrated that assertiveness in having necessary skills and knowledge to start a business and openness of the nation to new business practices encourage the early-stage entrepreneurship.

1. Introduction

The United Nations Sustainable Development Goal 8 declares as one of its targets "sustain per capita economic growth in accordance with national circumstances" (United Nations, n.d.). Despite the differences in models of economic growth, nowadays, its widely discussed that one of the pillars of economic development can be considered entrepreneurship (Acemoglu, 2012). The paramount role of entrepreneurs in growth is evidenced both theoretically and empirically (Acs, 2006; Carree & Thurik, 2010; Bosma et al., 2018; Urbano et al., 2019; Galindo-Martín et al., 2019; Munyo & Veiga, 2022), even though, this contribution of the interpreters can be sometimes found insignificant for different reasons such as the high rate of failing of new businesses, the cyclical character of the entrepreneurial activity, and the development level of the country (Apostu et al., 2022).

At the same time, entrepreneurship is an utterly complex phenomenon, that has been the subject of intense research in the scientific literature (Rusu et al., 2012). Entrepreneurs and entrepreneurship were being considered from Shumpeter's radical innovators who disrupt existing markets, through Kirzner's incremental changer who discovers profitable opportunities (Greene, 2020), to European Commission's "entrepreneurship as acting upon opportunities and ideas and transforming them into value for others, which can be financial, cultural, or social" (European Commission, n.d.). Given the relationship between entrepreneurship and the economic development of the country, it seems to be very important to study the factors that determine entrepreneurial ambit. In the scientific literature, a large number of factors that may have such an impact, are investigated: personality traits (Rosado-Cubero et al., 2022), social networking (Leyden & Link, 2015), sociocultural environment (Schmutzler et al., 2019), intellectual capital (Crupi et al., 2021), institutional environment of the country such as political stability, government effectiveness, regulatory quality, rule of law, the ease of starting a new business, and access to financial resources (Sendra-Pons et al., 2022), governmental subsidies (Cueto et al., 2017), and many others with different outcomes (Kimjeon & Davidsson, 2022). At some point, entrepreneurs can be said to act as a counterpredictive device proving the impossibility of Laplacian intelligence (Ismael, 2019).

Examining existing scholarly works "about how changes to the business environment enable new venture creation" Kimjeon and Davidsson (2022) concluded that "regulatory change is the most frequently addressed type in this literature" (p. 651). Regulations are in the scope of this thesis as well for some reasons:

1. There is a solid theoretical basis such as institution theory, which pays attention to the regulatory environment (Bruton et al., 2010).

2. Rules, established by the Law, can be easier modified compared to other institutional dimensions; they can be changed in short periods (North, 1990) by the will of authorities and, in the end, by societies, those (or which parts) affect or control the decision makers (Verba, 1967).

3. Regulations can shift the economic ambient. According to Kimjeon and Davidsson (2022), the major part of the studies of regulatory changes empirically verifies that the intended effects of initiatives specifically designed to stimulate business activity actually materialize.

Consequently, understanding the influence of the regulatory environment on the development of entrepreneurship activity could be beneficial for implementing effective measures or tapering ineffective ones in favor of which work.

2. Literature review

According to North (1990):

> Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence they structure incentives in human exchange, whether political, social, or economic. (p. 3)

Institutions as rules of the coexistence of humans are created by humans themselves and can be modified by them, providing different paths for societies' development. In his work North (1990), analyzing the US practice of the institutional framework development, noted that institutions have been a mixture of that are pushing productivity upward and are tapering it. In our everyday life we also judge the rules of our life as positive or which one is better to be changed, obeying at the same time even those we don't admit as fair enough.

The institutional theory argues that despite individuals trying to maximize their behavior over stable and consistent preference ordering, they do so through the lenses of cognitive biases, the absence of full data, constrains in monitoring and enforcing agreements. This means that while individuals may have certain preferences and intentions, they may not always act in a way that reflects those preferences due to these constraints. Transaction costs are also a key concept in institutional theory. Transaction costs refer to the costs of making and enforcing agreements between individuals or organizations. These costs can include the costs of gathering information, negotiating agreements, monitoring and enforcing contracts, and resolving disputes. Institutional theorists argue that institutions help to reduce transaction costs by providing standardized norms and procedures that simplify and streamline transactions between individuals and organizations. Overall, the theory suggests that individuals and organizations operate within a complex web of institutions that shape their behavior and interactions, and that these institutions help to reduce the costs and uncertainties associated with social and economic transactions (Powell & DiMaggio, 1991).

At the same time, the institutional approach is not homogeneous. As part of it, a large number of theoretical frameworks have been developed to analyze the factors that influence the behavior of "homo economicus". Williamson (2000) distinguished four vertical levels of social analysis within the economics of institutions "Embeddedness: informal institutions, customs, traditions, norms religion" (mainly informal, hard to be changed, under investigation of social theory), "Institutional environment: formal rules of the game" ("1st order economizing", including formal rules such as property rights, governmental functions), "Governance: play of the game" ("2nd order economizing" - contract laws and enforcement, the level where transaction costs arise), "Resource allocation and employment" ("3nd order economizing" – where a firm, "is typically described as a production function"). At the same time, according to Williamson (2017), New Institutional Economics predominantly deals with levels two and three: "these are the levels of the institutional environment and the institutions of governance" (p. 196).

Whitley (1999), analyzing different forms of capitalism in East Asia and Eastern Europe, suggested another model, which explains such diversity of types of economic systems with the help

of differences in social and governmental institutions, unwritten beliefs of locals about power and perception of authority: “institutional features can be very broadly characterized and compared across market economies in terms of four major arenas: the state, the financial system, the skill development and control system, and dominant conventions governing trust and authority relations.” (p. 47).

In his seminal work Scott (2013) defined: “institutions comprise regulative, normative, and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life” (p. 56) and proposed the famous framework of “three pillars of institutions” (Figure 1).

Figure 1

Three pillars of institutions

	Regulative	*Normative*	*Cultural-Cognitive*
Basis of compliance	Expedience	Social obligation	Taken-for-grantedness Shared understanding
Basis of order	Regulative rules	Binding expectations	Constitutive schema
Mechanisms	Coercive	Normative	Mimetic
Logic	Instrumentality	Appropriateness	Orthodoxy
Indicators	Rules Laws Sanctions	Certification Accreditation	Common beliefs Shared logics of action Isomorphism
Affect	Fear Guilt/ Innocence	Shame/Honor	Certainty/Confusion
Basis of legitimacy	Legally sanctioned	Morally governed	Comprehensible Recognizable Culturally supported

Source: Scott, 2013, p. 60.

The three pillars approach in institutional theory is widely recognized (Veciana & Urbano, 2008; Bruton et al., 2010) and is used for empirical analysis of the impact of the institution ambit on the entrepreneurial activity (Díez-Martín et al., 2016; Mello et al., 2022; Maurer et al., 2022). These

cornerstones act together shaping the ambit of the socius, nevertheless, they work through unique procedures and influence different workflows (Scott, 2013).

2.1. Cultural-cognitive pillar

The Cultural-cognitive pillar of institutions refers to the shared beliefs, values, and mental models that shape the way people in a particular country or region perceive and interpret the world around them (Veciana & Urbano, 2008). These cultural-cognitive structures are deeply embedded in the social knowledge and practices of a particular culture or society. According to Scott (2013), the Cognitive-cultural dimension deals with person's internal interpretation of the external world by means of common gestures, expressions carved by the cultural environment.

Theoretical and empirical studies confirm the influence of specific cultural traits on the entrepreneurship environment. For example, Schmutzler et al. (2019) proved the effect of the individualism-collectivism peculiarities of a nation on the transforming of social capital to the entrepreneurship intentions. Alesina and Giuliano (2015) highlighted that there is a plenty of evidence of society's values are one of the most noticeable "driver of economic development" and identical institutions may operate distinctively within different cultural contexts. Broadly speaking, "entrepreneurship studies may benefit from going beyond indexes of economic freedom, measures of legal origin, and similar metrics to incorporate these other aspects of the broader context" (Foss et al., 2019).

Some scholars argue that cultural factors can be treated as constant over a short period of time (Jha & Bhuyan, 2020). Fotopoulos and Storey (2019) analyzing the outcomes of the governmental efforts to promote entrepreneurship in Wales concluded that "the regional determinants of entrepreneurship are also strongly time-persistent and that many areas have deeply rooted cultures which are difficult to change".

Nevertheless, despite the fact that increase in intercultural contacts between distinct cultural backgrounds and its representatives leads to various winds of changes such as globalization and acculturation, which can have ambivalent effects (thus, at some point, the amplitude of the changes

may be attenuated), in fact, the globalization, as a wider phenomenon, results in imminent cultural and cognitive-psychological changes (Pieterse, 1996; Berry, 2008).

Hence, the Cognitive-cultural variable was included into the thesis model as a time-variant variable.

2.2. Normative pillar

The Normative pillar includes “norms” and “values” of the particular society. Scott (2013) defined “values” as standards of how actors or their activity can be examined and judged, and “norms” as a specific way how the goal can be achieved; the compliance with these norms is ensured by evaluating actions as "right" or "wrong", and values and norms can be different for different actors and their groups.

To measure this pillar, Scott (2013) referred to the work of Casile and Davis-Blake (2002), who found the heterogeneous response from public and private schools to the changes in the rules of accreditation in American Assembly of Collegiate Schools of Business, which took place in 1991. In his article, “Approaching adulthood: the maturing of institutional theory” Scott (2008) also noted that, a sheer abundance of indicators usually is employed to estimate institutional changes and among them “registration, certification, and accreditation” are that address the normative pillar.

However, it appeared a tough task to distinguish between Normative and Cultural-Cognitive dimensions. Sometimes cultural-cognitive Scott’s pillar is treated as a “cognitive”, while cultural characteristics are allocated to the normative dimension. For instance, Díez-Martín et al (2016) using Scott’s framework measured cognitive side as perceived capabilities of having skills and education to conduct a business, while captured “social references or national culture: social norms, values, and beliefs” for the normative ambit. In their turn, Maurer et al (2022) allocated capabilities, education and training to the cognitive pillar, while social norms and status of the entrepreneur in the society – to normative.

It should be admitted, that there is a significant two-ways influence between cultural-cognitive and normative sides. Moreover, the “regulatory dimension may be the most visible” (Laffan, 2001), which implies it is harder to distinguish between the others two. In addition, countries are

trying to promote entrepreneurship via different channels. These attempts include the popularization and financing of entrepreneurial education and the stimulation of the entrepreneurial way of thinking. For example, at the European level Entrepreneurship education, Erasmus for Young Entrepreneurs, and Family business are being promoted (European Commission, n.d.). This type of programs also are being implemented on a national level, for instance, "Spain Entrepreneurial Nation Strategy" proclaims one of its aim as "to promote measures to attract, retain and develop the top professionals, making Spain a haven for talent" (La Moncloa, n.d.), and such efforts, probably, shift normative and cultural-cognitive ambits.

In this thesis, in order to be consistent with Scott's cornerstone model, the normative environment is measured through professional standards, accreditation and other businesses rules and skills – "rules specifying how the game is to be played, conceptions of fair business practices" Scott (2013). It was highlighted above, that such rules can be different for distinct groups of business inside a society regarding particular industries and professional occupations, but these types of values (goals) and norms (role models) are supposed to be obtained through education, especially, professional or business education, spillovers, job experience and other transmitters of the business knowledge. Consequently, if a person states that they have knowledge and skills to start a business, it implies this person can act in accordance with the normative pillar's requirements.

From that point of view, an instance, that illustrates how the normative pillar works, can be found in the dependency between the business career of countries' political leaders and the climate performance of a country, which was discovered by Diaz-Serrano and Kallis (2022). The power of the normative dimension was, probably, revealed in the case of the Western companies' voluntary decision to leave the Russian market after the Russian invasion of Ukraine (for instance, Sonnenfeld et al, 2022), and the implementation of the principles of Corporate Social Responsibility and Environment, Social and Governance Management into business practices.

To summarize, for the aim of this thesis, it is assumed that changes in the normative pillar can be measured through changes in people's perception of having knowledge and skills to start a business, while the assessment of the cultural-cognitive pillar is based on the estimation of how social

and cultural norms foster or permit behaviors that promote innovative business practices or activities, which have the potential to enhance individual wealth and income. However, this approach does not affect the outcomes of this research regarding the regulative pillar, insofar as both indicators (education and skills for business and cultural acceptance of entrepreneurship) are used in literature to intercept cultural-cognitive and normative ambits.

2.3. Regulative pillar

The Regulative pillar's profile addresses the set of rules, laws, regulations, policies, and governmental practices that shape the behavior of individuals and organizations within a specific national environment and can promote or limit their particular practices (Veciana & Urbano, 2008). Scott (2013) described the logic of this pillar as: "individuals craft laws and rules that they believe will advance their interests, and individuals conform to laws and rules because they seek the attendant rewards or wish to avoid sanctions" (p. 62). At the same time, nevertheless, the regulative ambit includes policies and rules, legitimacy of which grows from the legal systems (Palthe, 2014), sometimes *de jure i de facto* regulation can be different. For example, multinational companies, which got used to operating in an uncertain institutional environment in their less developed home economies, obtain traits, that help to address regulations and to navigate through sophisticated political and bureaucratic procedures (Zhao et al, 2022); Chipalkatti et al (2011) found, that corruption institutions increase the conversion level of early-entrepreneurs into registered companies and assumed that "greasing the wheel" helps to get licenses and finance.

The analysis of regulations is a tough task, especially regarding the economic environment of a nation. In the scientific literature various parameters of the regulative pillar have been evaluated (Table 1), proving the complicity of this social category (Ginsburg, 2011).

Table 1

Selected studies on the impact of the Regulative pillar on entrepreneurship

Source	Regulatory environment measurements	Dependent variable	Regions	Econometric method
Chipalkatti et al, 2011	Protection of property rights, business freedom, financial depth, and corruption	Early stage and formal entrepreneurial activity and on knowledge spillovers	25 countries worldwide	Fixed-effects regression
Mohsen, 2019	Intellectual property protection, business freedom, starting and closing a business	Likelihood of an individual's entry into an innovative new venture	67 countries worldwide	Multi-level regression
Yan and Carr, 2013	Environmental regulation	Net employment growth and employment stability	US	Two-way fixed effects regression with robust standard errors
Dima et al, 2016	World Bank's Worldwide Governance Indicators (WGI), including: government effectiveness, regulatory quality, rule of law	Total early-entrepreneur stage	15 European countries	Fixed-effects, Prais-Winsten regressions, Hierarchical linear modelling, Generalized method of moments
Liu and Li, 2022	Criminal law regulation	Entrepreneurial spirit and Enterprise development	China	Reliability and validity analysis, basic descriptive statistics, independent sample t-test, one-way Analysis of Variance (ANOVA), and path test
Eberhart et al, 2017	Stringency of bankruptcy regulation	High-growth ventures (more capable entrepreneurs)	Japan	Random effects and the generalized linear model regression
Walter et al, 2022	Changes in personal bankruptcy system	Self-employment	24 European countries	Panel regression
Jha and Bhuyan, 2020	Financial sector reforms (e.g. directed credit, credit controls, banking supervision, international capital)	TEA and other GEM indicators	41 countries worldwide	Fixed-effects regression
Zhou, 2011	Overall Deregulation ("market/regulatory/legal")	Entrepreneurial growth	China	Fixed-effects regression
Chambers and Munemo, 2019	Complexity to register a business	New business density	119 countries worldwide	Cross-section and panel regressions
Porta et al, 2008	Countries' legal origin	Legal environment of the economic activity	150 countries worldwide	Ordinary Least Squares

Source	Regulatory environment measurements	Dependent variable	Regions	Econometric Method
Díez-Martín et al, 2016	Property rights, Intellectual property protection, diversion of public funds, public trust in politicians, procedures to start a business, days to start a business	New business ownership rate	33 countries worldwide	Partial Least Squares
Mello et al, 2022	Governmental support and policies, taxes and bureaucracy, governmental programs, commercial and professional infrastructure, Internal market openness, control of corruption, regulatory quality	TEA Innovation rate High job creation expectation Motivational index	112 countries worldwide	Dynamic panel data regressions

Source: own elaboration.

Moreover, it cannot be said that the only way to improve the entrepreneurship environment is to add simplicity to the regulatory ambit. For instance, Tarko and Safner (2022) noted, that «over the last 50 years, economic freedom in modern capitalist democracies has increased although the regulatory state has expanded considerably, resulting in Vogel's paradox of "freer markets, more rules"». In his turn, Rodrik et al (2004), stating the superiority of institutions over geography and countries integration, highlighted the complexity of extracting advice for policymakers even from the evidence that robust property rights protection is better for business. Another vivid illustration of the versatility of the concept of legislation was provided by Acemoglu (2008), who stated that property rights protection in an "oligarchic" society implies slow economic growth and barriers for new entrepreneurs to enter into markets.

Desirable outcomes of changes in regulations sometimes may be diminished by different factors. For instance, in the example of the US brewing industry Friske and Zachary (2019) found that even if a government tries to mitigate social costs by increasing burdens for business, it does not "necessarily hurt economic growth or entrepreneurship as long as the right demand conditions are present". In addition, it should be taken into account that the impact of regulation could be different from one industry to another, which was shown by Agostino et al. (2019) in the empirical analysis of new companies established in Italian provinces.

Moreover, the adoption of new technologies and new patterns of consumption such as sharing economy bring new challenges to the frontline. Hughes (2022) examined examples of Uber and Lyft, which have grown their empire in the absence of regulation or even legal grey areas, and conduct their business following the patterns of "regulatory entrepreneurship" – exploiting the gaps in regulation or trying to shape the regulative pillar according to own business, obviously, realizing that they had become too big to be banned. It can be added, that, probably, the same pattern can be witnessed in the current development of artificial intelligence technology. Considering the emerging technology regulation, it can be noted that, nowadays there are voices advocating both the implementation of proactive regulation (Chang-hsien, 2019) and "regulatory sandboxes" (European Commission, 2022) to tackle the dilemma between regulation and innovation.

The overview of the regulative pillar would be incomplete without pointing out one of its most important features. For disobeying the regulative pillar's rules, a violator faces sanctions, which can include liquidation of a company, imprisonment, or fines. Scott (2013) noted, that behavior of actors under regulations can be corrected both by rewards or punishments. Nevertheless, if positive outcomes of complying norms can be found in all institutional dimensions, then regulatory compliance in most cases is vital for entrepreneurship (as long as we are not in the twilight zone of "greasing the wheels"), while the other two institutional pillars gravitate toward the Kantian "kategorischer Imperativ".

Considering all above, the following hypothesis of the study was introduced: the regulatory pillar, as a part of three institutional pillars framework, influences the entrepreneurship.

3. Materials and methods

3.1. Selection of data and variables

This paper uses the unbalanced panel for the Organization for Economic Co-operation and Development (OECD) selected member countries. The data was collected for the period between 2006 and 2020.

There are several reasons to concentrate on the OECD members.

Firstly, OECD countries continuously improve their legal frameworks via governmental cooperation and implementation of the common best practice to tackle common challenges (OECD, n.d.a), hence, the estimation of the influence of institutional environment on the example of OECD members can give insights from the cutting edge of legislative changes.

Secondly, the best institutional practices of OECD members are usually implemented by non-members of OECD (for example, Tan et al., 2022). Thus, the results of this study may reflect the ambit outside the OECD perimeter as well.

Moreover, OECD countries samples have been widely used in the literature to understand economy drivers of a nation (Bassanini et al., 2001, Schneider, 2010; Angulo-Guerrero et al., 2017; Méndez-Picazo et al., 2021).

For the Dataset 33 countries of 38 OECD members were selected: Australia, Austria, Belgium, Canada, Chile, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Latvia, Luxembourg, Mexico, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States.

Czech Republic and New Zealand were excluded due to lack of data available; Colombia, Costa Rica, and Lithuania were omitted, because they joined the organization very recently.

At the same time, taking into account the duration of the procedure for assessing the country's compliance with OECD rules to become its member (OECD n.d.b, n.d.c) the dataset comprises countries, which became OECD's members during the period of the analysis.

The complex Total Early-Stage Entrepreneurial Activity (TEA) is used as a depended variable. TEA is elaborated by The Global Entrepreneurship Monitor (GEM) consortium (Global Entrepreneurship Research Association, n.d.) and represents "the percentage of 18-64 population who are either a nascent entrepreneur or owner-manager of a new business" (GEM, n.d.). This indicator is based on the "Adult Population Survey" (APS), which aims is to assess both the level and nature of entrepreneurship in selected countries, providing opinions of minimum 2000 respondents in each country. GEM consortium proclaims that despite the changes in the methodology of the survey

(in 2011 and 2015), APS “has remained consistent over the years, providing a valuable longitudinal perspective” (GEM, n.d.).

For the purpose of the GEM, the entrepreneurship is defined as "any attempt at new business or new venture creation, such as self-employment, a new business organization, or the expansion of an existing business, by an individual, a team of individuals, or an established business." (Reynolds et al., 2000, p. 3). One of the advantages of TEA is that is doesn’t rely only on the numbers of officially registered firms or self-entrepreneurs – so called entry level. It includes also individuals who are actively engaged in the process of initiating a business (nascent stage), as well as partial owners and owner-managers of newly established companies (younger than 3.5 years in age.). Applying TEA as a dependent variable may allow to intercept the changes in perception of the institutional environment, even if later nascent entrepreneurs use different legal constructs (such as joint-stock company, limited liability company, partnership, individual entrepreneur status, other legal constructs provided by the legislation of a particular country) to unite their efforts and capital or even decide to quit the business career.

TEA is widely used in research literature to measure, for instance, the entrepreneurial activity (Chipalkatti et al., 2011; Dima et al., 2016; Díez-Martín et al. 2016; Mendonça Silva et al., 2022), entrepreneurship capital (Urbano & Aparicio, 2016), and entrepreneurship level (Crecente-Romero et al., 2019).

Considering the assumption of a non-linear relationship between TEA and the independent variables, as demonstrated by studies (for instance, Aparicio et al., 2022), and taking into account wide range of values on the scale of this indicator and right-skewness observed for selected OECD countries (Average = 8.719, Median = 7.455, Min = 1.9, Max = 36.71) it was decided to explore the modeling approaches that can better capture the complex nature of the relationship between variables using and provide more accurate estimations, consequently, the logarithmic transformation of TEA was applied.

The usage of the log-log model (such as Bosma et al., 2018) was avoided in order to facilitate the interpretation of the estimation results. The decision to avoid assessing changes in regulation as

percentages was made because it may not provide informative insights in the given context. However, by utilizing a 100-point scale on the decomposed level for the majority of the variables related to the regulative pillars (described below), it becomes possible to determine which reforms potentially led to a positive or negative shift in the level of entrepreneurship.

Considering the aim of this thesis – measuring the influence of the regulatory environment – specific indicators from the Ease of doing business Database 2020 (The World Bank, n.d.), which is provided by the World Bank Group, were obtained.

Each indicator of the EDB 2020 is a score, that a particular country gains on a scale from 0 to 100 for a specific indicator. 100 points are given to the country with the best conditions for the current indicator, and 0 is given to the country with the least favorable conditions. The assessment of the best and worst performance is conducted every five years. It is important to note that certain indicators do not allocate 100 points to any country (e.g., legal rights). In the original database, the indicators are organized in a hierarchical structure, starting from specific levels of detail (for example, scores for procedures, time, and costs) and progressing to the broader level (such as "Score-Starting a business") using equal weights, except "Tax and contribution rate" which is included in to "Paying taxes" topic, where a non-linear scale between the best and the worst performance is applied. Different indicators from the Ease of doing business framework in various combinations were used by scholars to evaluate the institutional environment (e.g. Niyungeko, 2022; Haggard and Haggard, 2018; Ani, 2016), as well as were under scrutiny and critic (e.g. Besley, 2015; Pinheiro-Alves, 2012). Statistics for usage of the indicators in academic papers is available on the site of the World bank group (World Bank Group, 2021).

To ensure consistency in this thesis, adjustments were made to the variables used in the EDB 2020. These adjustments were necessary due to changes in methodology, resulting in the modification of indicator values for the years 2017-2020. In cases where two values for the same year were available, corresponding to previous and current methodologies, the following formula was employed to calculate the data for the subsequent year:

$Y_{t+1\ldots n}=Y_t*X_{t+1\ldots n}/X_t$, where

$Y_{t+1...n}$ – Value of the variable for the year (t+1 to t+n) adjusted from the current to the previously applied methodology,

Y_t – Value for the year t according to the previously applied methodology,

$X_{t+1...n}$ – Value for the current year (t+1 to t+n) according to the current methodology,

X_t – Value for the year t according to the current methodology.

In addition to the variables from EDB 2020 to measure the regulative dimension index of "Internal market openness" was added. It was supposed in this study, that this index can reflect existing barriers which make it difficult for new companies to enter the existing markets, such as licensing procedures, special industry requirements, antimonopoly rules. This index is provided by the GEM consortium and composed from the National Expert Survey (NES), that aims to measure national contexts of entrepreneurial conditions. The results of the survey include the opinion of 36 experts from each country where entrepreneurial activity is monitored, answers are given employing the Likert scale and experts express their opinion as agreement or disagreement on a scale of 5 points, where 1 is "completely false", 5 is "completely true". Both results of NES and its particular indexes are popular research instruments. For instance, data from the NES was applied to estimate drivers for innovation (Nunes & Savosh, 2022), outcomes of public policy and entrepreneurship development (Amorós et al., 2013), influence of institutional environment on the business ambit (Charfeddine & Zaouali, 2022).

Taking such different variables is an attempt to archive the following goals: to represent legal norms, the positive effect of which is in their weakening (reducing barriers to entry to the market or administrative procedures when creating a company or conducting export / import operations), in relative strengthening (protection of rights under contracts); and norms that address relations between a state and business (administrative rules, for instance, of establishing a company or issuing a license) or affect the relationships between the economic entities themselves (protection of rights under contracts, enforcing contracts or satisfaction of creditors' claims in bankruptcy proceedings).

To measure the Normative pillar "Perceived Capabilities Rate" indicator, developed by GEM consortium, was used. This indicator is based on the "Adult Population Survey" and is defined as

“Percentage of 18-64 population (individuals involved in any stage of entrepreneurial activity excluded) who believe they have the required skills and knowledge to start a business” (The Global Entrepreneurship Monitor (GEM), n.d.). This indicator is widely used, for example, to measure conditions of the entrepreneurial activity (Lombardi et al., 2017).

To measure the Cultural-cognitive pillar “Cultural and social norms” indicator, developed by GEM consortium, was used. The indicator is based on the “National Expert Survey” using the five-point Likert scale, and is defined as “the extent to which social and cultural norms encourage or allow actions leading to new business methods or activities that can potentially increase personal wealth and income” (The Global Entrepreneurship Monitor (GEM), n.d.). Data is provided as values in the range from 1 to 5, where a higher value of the variable means more favorable conditions for entrepreneurship.

“Cultural and social norms” indicator is widely used in scientific literature, for example, to estimate conditions and entrepreneurial activity (Alvarez et al., 2021).

It was shown in numerous studies that entrepreneurship depends on a variety of factors (some examples were provided above). Thus, the incorporation of control variables that impact the dependent variable can help to mitigate the influence of external factors that fall outside the scope of this study (Nielsen & Raswant, 2018).

Supporting the thesis that increase in the number of inhabitants can create new opportunities for expansion into internal markets (Schmutzler et al., 2019), a number of total population in the form of a natural logarithm was included in the estimation as a control variable. Unemployment rate was chosen, since the relationship between various forms of entrepreneurship and the unemployment rate has been confirmed empirically (Fritsch et al., 2015; Apergis & Payne, 2016). Simultaneously, the inclusion of the unemployment rate prevented the utilization of another widely used covariate - GDP, which correlation with unemployment is robust (Feng et al., 2018). It was also shown, that a greater proportion of urban population has a positive influence on the level of entrepreneurial intentions (Schmutzler et al., 2019), consequently, this factor was also added in to the model.

Following Andonova and Diaz-Serrano (2009) dummies for years were applied to control for the specific year's effects, which may not be captured by other variables, and to avoid autocorrelation in residuals. It is supposed, that notable specific year's effects may occur, for instance, in 2008, 2009, 2019, and 2020.

List of the variables and their definitions can be found in the Annex (Table A1).

3.2. Data analysis and results

The Multiple regression model, employed in this thesis (Panel Data Regression with Fixed Effects):

$$TEA_{it} = \alpha_i + \beta_1 RegStart_{it} + \beta_2 RegTax_{it} + \beta_3 RegTrade_{it} + \beta_4 RegContr_{it} + \beta_5 RegInsolv_{it} + \beta_6 RegMkt_{it} + \beta_7 Norm_{it} + \beta_8 Clt_{it} + \beta_9 Pop_{it} + \beta_{10} UnEmp_{it} + \beta_{11} Urb_{it} + \gamma_1 y2006_i \ldots + \gamma_{15} y2020_i + u_i + \varepsilon_{it},$$

where:

TEA_{it} – dependent variable, in the form of natural logarithm,

α_i – constant,

β_1 - β_{11} – parameters,

$RegStart_{it}$, $RegTax_{it}$, $RegTrade_{it}$, $RegContr_{it}$, $RegInsolv_{it}$, $RegMkt_{it}$ - Regulative pillar for a country *i* and year *t,*

$Norm_{it}$ – Normative pillar for a country *i* and year *t,*

Clt_{it} – Cultural-cognitive pillar for a country *i* and year *t,*

Pop_{it}, $UnEmp_{it}$, Urb_{it} – control variables for a country *i* and year *t*,

γ_1- γ_{15} – parameters for dummy variables for a country *i* for years 2006-2020,

$y2006_i \ldots + y2020_i$ – dummy variables for a country *i* for years 2006-2020,

u_i – country specific error term,

ε_{it} – error term for a country *i* and year *t*.

Description of all models and estimation results are included in the Table A4.

Descriptive statistics is presented in the Table A2, along with correlation matrix in the Table A3. Panel data line plots in the Annex (Figures A1 – A9) demonstrate dynamics and patterns of group-

level changes of the Total early-stage Entrepreneurial Activity and institutional environment in OECD countries in 2006-2020.

It can be seen that countries are not homogeneous in their entrepreneurship activity, and TEA varies from 1.9% to 36.71%, while the mean is 8.719 in different countries in the observed period (Table A2). On the line plot in Figure A1 it can be seen that one country (Chile) has different level and patterns of the entrepreneurship activity comparing to other countries. At the same time, in terms of the regulative pillar OECD countries are moving in a similar direction, rapidly synchronizing their regulatory standards (Figures A2-A7). Nevertheless, the indicator of the market openness demonstrates that countries are not similar considering the barriers to entry into the internal markets (Figure A7).

From the correlation matrix (Table A3) it can be concluded that there is no statistically significant strong correlation between the Regulative pillar's indicators. That could support the correctness of the chosen variables. The question may be arisen from the upper-moderate statistically significant interdependency between Market Openness and Cultural and Social Norms. At the same time, they are both given by the GEM consortium as a part of their Entrepreneurial Framework Conditions, which is widely used in research papers (Álvarez et al., 2014). Hence, it seems to be justified to keep them both for the purposes of this study.

The relationships between a dependent variable and independent variables were estimated in the Stata software using Fixed- and Random-effects models. The Hausmann test gives the following results: chi2(25) = 42.37 and Prob>chi2 = 0.0164. Hence, the null hypothesis that difference in coefficients between Fixed-effect and Random-effect models is not systematic was rejected, and it could be concluded that the Fixed-effect model fits the panel Dataset better.

Furthermore, it is widely recognized that there are specific characteristics unique to each country (Barro, 2015). Moreover, the Full model fixed-effect estimation returns correlation between the error term (u_i) and the predicted values (Xb) as 0.9514, indicating a strong negative relationship between them. This suggests that the fixed-effects approach effectively captures a significant portion of the variability in the dependent variable and provides robust explanation of the observed data. The

interclass correlation (rho) indicates that approximately 98% of the variance in the results can be attributed to the peculiarities of a particular country. Additionally, the residuals within countries (sigma_u = 1.536) exhibit a higher level of time-invariant fixed-effects compared to the overall residuals (sigma_e = 0.202).

Consequently, all above indicate a good fit of the model to the data and suggest that the independent variables included in the Full model are effective predictors of the dependent variable.

The estimation results (Table A4) show that two variables from the Regulative pillar have statistically significant coefficients, as p-values are below the significance threshold in the Full model. Hence, the null hypothesis of the absence of the Regulative pillar's influence on entrepreneurship activity was rejected.

Trading across borders (RegTrade) and Paying taxes (RegTax) keep significance in the Full model, in univariate regressions, and with control variables and year fixed-effects (Models 2, 3 and 11, 12 accordingly in the Table A4). At the same time, Paying taxes changes direction from the positive to the negative one, when control variables and years effects are added.

Univariate regressions also reveal the statistically significant relationship between Starting a business (RegStart) and Resolving insolvency (RegInsolv) and the dependent variable (Model 1 and Model 5).

Since the dependent variable was transformed using the natural logarithm, a one-unit increase in the predictor variable corresponds to a percentage change in the dependent variable equal to the coefficient value.

Consequently, advancing by one point on the 100-points scale for Trading across borders (RegTrade) leads to 0.033% increase in the share of early-stage business in an OECD member country. However, only 40% of changes in the dependent variable of a particular country can be explained by the model, as the R-squared within groups has a value of .403.

Decomposition of the Trading across borders index brings insights about factors, which promote the entrepreneur activity within the OECD countries: easing procedures and time to filling documents for export and import and improving interactions between economic agents and national

customs. Thus, it is worth to emphasize that the establishment of new businesses is positively influenced not only by the improvement of physical infrastructure, such as the road network (as demonstrated by Bennett, 2019; Martin et al., 2013), but also by the enhancement of administrative procedures that facilitate access to resources and markets.

The history of changes in the Trade across borders indicator (The World Bank, n.d.b, The World Bank, n.d.c) reveals that in Spain the index was shifted by 1 point due to the simplification of the import documentation in 2011, which was the inclusion of tax-information in the Single Administrative Document (SAD). SAD is applied in trade of EU-members with non-EU countries and for the movement of non-EU goods within the EU (International Trade Administration, 2022). Furthermore, the implementation of an electronic single window for port procedures in Portugal in 2013 resulted in a significant increase of two points in the Trade across borders indicator (The World Bank, n.d.a).

In general, while it is not possible to conclude within the scope of this study about whether new early-stage entrepreneurs are specifically oriented towards the foreign markets, developing cross-border entrepreneurship (Kurowska-Pysz, 2016), or benefit from a hub and spoke models (Baldwin & Lopez-Gonzalez, 2015), the estimation results show that the facilitation of the international trade promotes the early-stage business.

Paying Taxes (RegTax), that includes tax contributions and costs of compliance, at first glance, gives ambiguous results. It is robust in significance, but the facilitation of taxation regime appeared to affect entrepreneurship in a negative way.

Assuming the presence of the non-linear relationship the quadratic transformation of the Full model was applied (for example, Piaggio et al, 2017):

$$TEA_{it} = \alpha_i + \beta_1 RegTax_{it} + \beta_2 RegTax_{it}^2 + \dots + u_i + \varepsilon_{it} .$$

After the squared RegTax was added to the regression, the Full model returns statistically significant ($p = .024$) negative coefficient ($\beta_1 = 0.009$) for the linear RegTax and also significant ($p = 0.013$), but positive ($\beta_2 = 0.001$) for the squared RegTax. These outcomes suggest that the effect of the RegTax on the dependent variable is not linear, and it follows a curved pattern.

Such results are consistent with other empirical studies, which revealed the negative influence of the lowering of corporate taxes on the new company creation rate and suggested the presence of a non-linear effect (Cullen & Gordon, 2007; Rin et al., 2011).

In particular, Cullen and Gordon (2007) proposed a theoretical explanation to the dependency of new business incorporation from taxation system through the interaction of three effects. Reducing of corporate taxes leads to increase of new ventures creature due to the “income-shifting” effect (businesses prefer corporate taxes to personal, because the last ones are usually higher) and “risk subsidy” (progressive personal taxation pushes profitable ventures to incorporate despite business risks). At the same time, the “risk-sharing” channel (where the tax legislation allows for sharing business risks with the government via taxation system peculiarities) can encourage creation of new ventures, even in the face of increasing taxes.

Consequently, the estimation results suggest that during the period 2006-2020 in OECD countries, the "risk-sharing" effect had a predominant influence over the other two effects. This could be attributed to the authorities’ efforts to promote entrepreneurship via tax incentives, which enable this channel to work, such as loss carry forward and backward, investment tax credits, and accelerated depreciation.

From that point of view, in the context of the prevailing "risk-sharing" effect, the tax reform implemented in Spain in 2016, when the corporate tax rate was reduced, tax procedures were simplified by introducing the Cl@ve system, but at the same time, the amount of depreciation of fixed assets was cut, could have a negative impact on the level of early-stage entrepreneurship (The World Bank, n.d.d).

Anyway, the evaluation of the tax system’s effects is a complicated task (Heyman, 2019) and requires special attention in future research.

The estimation outcomes also show statistically significant effects of the Normative and Cultural pillars on the share of early-stage entrepreneurs.

Following the results, a one percentage point increase in the proportion of inhabitants (aged 18-64 years, excluding those who are already engaged in business) who are confident in having

sufficient knowledge and skills to start a business (the Normative pillar as it was measured), necessitates 0.01% increase in early-stage entrepreneurship on the significance level of p-value = .001.

In this thesis Cultural pillar's measurement (Clt) employed a Likert Scale, which indicates the level of agreement or disagreement with statement, hence, it can be said that the increasing of the level of acceptance of new business practices in the society promotes the establishment of new businesses without quantifying the influence of independent variables on the dependent. The Full model returns for this relationship p-value = 0.025 and $\beta = 0.113$. Taking into account that this variable stays on the significance level in a univariate regression and other models (Table A4) it can be concluded that the robust dependency exists.

Results for the control variables support the assumption of the presence of dependency between the unemployment rate and entrepreneurship. Regarding the Full model, it can be said that one percentage point increase in the unemployment rate in a particular OECD country leads to almost 0.016% decrease in the share of young business in this nation.

It was also assumed, that dummy variables for years could allow to intercept impacts of financial turnovers in 2008, 2009 (associated with the financial crisis) and 2019-2020 (COVID-19). Looking at the Regression results it can be supposed, that there are unobserved year-specific factors, which had different influence on the dependent variable. In particular, comparing to the year 2006, the year-specific factors have shown increase in their plausibility for early-stage entrepreneurial activity (2008 with p-value = 0.080) up until 2009 (considering p-value = .121, constant in 2009 was around zero). However, there was a significant negative effect of the unobserved factors in 2010 with a coefficient of -0.2192 and p-value = .013, which can be attributed to the aftermath of the 2008 financial crisis.

In 2016-2019 the positive effect of unobserved year-specific factors was also noticeable. At the same time, this positive force reached its maximum in 2018 ($\gamma = 0.173$) and declined to zero in 2020. Such picture can be provoked by the COVID-19 pandemic.

4. Conclusion

In this thesis the presence of the influence of the regulatory environment on entrepreneurship, within the context of the three pillars of institutional theory, was examined using data from the OECD countries. The strong evidence of such existence was found.

In particular, it was shown that facilitating of the import and export procedures enhances the entrepreneurship activity of the nation, while easing of the taxation regime imposes a negative effect on the emerging business in the presence of a non-linear relationship. Furthermore, it has been demonstrated that the early-stage entrepreneurship is influenced by two additional institutional dimensions, namely the Normative and Cultural-cognitive pillars. At the same time, since institutional variables were measured on different scales, it cannot be concluded that entrepreneurship is more responsive to one of the particular pillars.

This study contributes with the empirical evidence of the impact of the distinct factors on the early-stage entrepreneurship within the institutional framework of the Regulative, Normative and Cultural-cognitive dimensions.

Considering implication for policy makers it can be said that authorities' efforts to simplify international trade, promote business education, support the openness of the culture to innovations encourage the early-stage business. However, special attention should be paid to the taxation policy. Probably, under current circumstances the business is ready to tolerate higher tax rates in exchange of benefits of being a taxpayer.

The study contains limitations regarding data availability and consistency: gaps in data, changes in the data collection methodologies of the World Bank and the GEM consortium within the period of observation, and limiting the subject of study to only OECD countries. Nevertheless, by including all three institutional pillars and a set of control variables in the model, as well as applying the fixed effect method with year-fixed dummies, some of concerns may have been leveled out.

In further research it would be beneficial to estimate the difference of institutional influence on aspiration to set up a company, on young business and on mature corporations, draw the line between industries following, for example, Agostino et al. (2019), and Itskhoki and Moll (2019),

increase the diversity of regulative variables, for instance, with environmental policy (Hunt & Fund, 2016), and pay attention to the factor of motivation (either necessity or opportunity) for initiating a business, as long as institutional changes can have contrasting effects on each of them (Angulo-Guerrero et al., 2017). Finally, the Regulative pillar is not a Kantian "Ding an sich". Scott (2008) highlighted that "regulatory systems are more fast-moving and easier to manipulate than the other elements". Hence, future research may benefit from paying attention to differences how "rules of game" are made.

5. References

Acemoglu, D. (2008). Oligarchic Versus Democratic Societies. *Journal of the European Economic Association, 6*(1), 1-44.

Acemoglu, D. (2012). Introduction to economic growth. *Journal of Economic Theory, 147*(2), 545-550. https://doi.org/10.1016/j.jet.2012.01.023

Acs, Z. (2006). How Is Entrepreneurship Good for Economic Growth? *Innovations: Technology, Governance, Globalization, 1*(1), 97-107. https://doi.org/10.1162/itgg.2006.1.1.97

Agostino, M., Nifo, A., Trivieri, F., & Vecchione, G. (2019). Rule of Law and Regulatory Quality as Drivers of Entrepreneurship. *Regional Studies, 54*(6), 814-826. https://doi.org/10.1080/00343404.2019.1648785

Alesina, A., & Giuliano, P. (2015). Culture and Institutions. *Journal of Economic Literature*, *53*(4), 898-944. http://dx.doi.org/10.1257/jel.53.4.898

Álvarez, C., Urbano, D., & Amorós, J. E. (2014). GEM Research: Achievements and Challenges. *Small Business Economics, 42*, 445-465. https://doi.org/10.1007/s11187-013-9517-5

Alvarez, C., Urbano, D., Coduras, A., & Ruiz-Navarro, J. (2011). Environmental Conditions and Entrepreneurial Activity: A Regional Comparison in Spain. *Journal of Small Business and Enterprise Development, 18*. doi.org/10.1108/14626001111106460

Amorós, J. E., Felzensztein, C., & Gimmon, E. (2013). Entrepreneurial Opportunities in Peripheral versus Core Regions in Chile. *Small Business Economics, 40*, 119-139. https://doi.org/10.1007/s11187-011-9349-0

Andonova, V., & Diaz-Serrano, L. (2009). Political Institutions and Telecommunications. *Journal of Development Economics, 89*(1), 2009, 77-83. https://doi.org/10.1016/j.jdeveco.2008.09.006

Angulo-Guerrero, M. J., Pérez-Moreno, S., & Abad-Guerrero, I. M. (2017). How Economic Freedom Affects Opportunity and Necessity Entrepreneurship in the OECD Countries. *Journal of Business Research, 73,* 30-37. https://doi.org/10.1016/j.jbusres.2016.11.017

Ani, T. G. (2016). Effect of Ease of Doing Business to Economic Growth among Selected Countries in Asia. *Asia Pacific journal of Multidisciplinary Research, 3*(5), 139-145.

Aparicio, S., Audretsch, D., & Urbano, D. (2022). Governmental Support for Entrepreneurship in Spain: An Institutional Approach. *Hacienda Pública Española / Review of Public Economics, IEF*, *243*(4), 29-49.

Apergis, N., & Payne, J. E. (2016). An Empirical Note On Entrepreneurship And Unemployment: Further Evidence From US States. *Journal of Entrepreneurship and Public Policy*. https://doi.org/10.1108/JEPP-10-2015-0029

Apostu S. A., Mukli, L., Panait, M., Gigauri, I., & Hysa, E. (2022). Economic Growth through the Lenses of Education, Entrepreneurship, and Innovation. *Administrative Sciences, 12*(3), 74. https://doi.org/10.3390/admsci12030074

Baldwin, R., & Lopez-Gonzalez, J. (2015). Supply-Chain Trade: A Portrait of Global Patterns and Several Testable Hypotheses. *The world economy, 38*(11), 1682-1721.

Barro, R. J. (2015). Convergence and Modernisation, *The Economic Journal, 125*(585), 911-942. https://doi.org/10.1111/ecoj.12247

Bassanini, A., Scarpetta, S., & Hemmings, P. (2001). Economic Growth: The Role of Policies and Institutions. Panel Data Evidence from OECD Countries. http://dx.doi.org/10.2139/ssrn.265091

Bennett, D. L., (2019). Infrastructure Investments and Entrepreneurial Dynamism in the U.S. *Journal of Business Venturing, 34*(5). https://doi.org/10.1016/j.jbusvent.2018.10.005

Berry, J. W. (2008). Globalisation and Acculturation. *International Journal of Intercultural Relations, 32*(4), 328-336. https://doi.org/10.1016/j.ijintrel.2008.04.001

Besley, T. (2015). Law, Regulation, and the Business Climate: The Nature and Influence of the World Bank Doing Business Project. *The Journal of Economic Perspectives, 29*(3), 99-120.

Bosma, N., Content, J., Sanders, M., & Stam, E. (2018). Institutions, Entrepreneurship, and Economic Growth in Europe. *Small Business Economics, 51*, 483–499. https://doi.org/10.1007/s11187-018-0012-x

Bruton G. D., Ahlstrom, D., & Li, H. L. (2010). Institutional Theory and Entrepreneurship: Where Are We Now and Where Do We Need to Move in The Future? *Entrepreneurship Theory and Practice, 34*(3), 421-440. https://doi.org/10.1111/j.1540-6520.2010.00390.x

Carree, M. A., & Thurik, A. R. (2010). The Impact of Entrepreneurship on Economic Growth. *Handbook of Entrepreneurship Research, 5*, 557–594. https://doi.org/10.1007/978-1-4419-1191-9_20

Casile, M., & Davis-Blake, A. (2002). When Accreditation Standards Change: Factors Affecting Differential Responsiveness of Public and Private Organizations. *The Academy of Management Journal, 45*(1), 180-195. https://doi.org/10.2307/3069291

Chang-hsien T. (2019). To Regulate or not to Regulate? A Comparison of Government Responses to Peer-to-Peer Lending Among the United States, China, and Taiwan. *University of Cincinnati Law Review, 87*(4), 1077-1122.

Charfeddine, L., & Zaouali, S. (2022). The Effects of Financial Inclusion and the Business Environment in Spurring the Creation of Early-Stage Firms and Supporting Established Firms. *Journal of Business Research, 143*, 1-15. https://doi.org/10.1016/j.jbusres.2022.01.014

Chipalkatti, N., Doh, J. P., & Rishi, M. (2011). Institutional Quality, Knowledge Spillovers and Entrepreneurship. *International Journal of Economic Policy in Emerging Economies, 4*(4), 307- 329. https://doi.org/10.1504/IJEPEE.2011.043307

Crecente-Romero, F., Giménez-Baldazo, M., & del Val-Núñez, M. T. (2019). Competitiveness and Entrepreneurship Rate in Europe During the Economic Recovery Phase, 2012–2016. *International Entrepreneurship and Management Journal*, 15, 455-470. https://doi.org/10.1007/s11365-019-00572-x

Crupi, A., Cesaroni, F., & Di Minin, A. (2021). Understanding the Impact of Intellectual Capital on Entrepreneurship: A Literature Review. *Journal of Intellectual Capital, 22*(3), 528-559. https://doi.org/10.1108/JIC-02-2020-0054

Cueto, B., Mayor, M., & Suárez, P. (2017). Evaluation of the Spanish Flat Rate for Young Self-Employed Workers. *Small Business Economics, 49*(4), 937-951. https://doi.org/10.1007/s11187-017-9853-y

Cullen, J. B., & Gordon, R. H. (2007). Taxes and Entrepreneurial Risk-Taking: Theory and Evidence for the U.S. *Journal of Public Economics, 91*(7-8), 1479-1505. https://doi.org/10.1016/j.jpubeco.2006.12.001

D'Andrea, F. A. M. C. (2023). Entrepreneurship and institutional uncertainty. *Journal of Entrepreneurship and Public Policy, 12*(1), 10-31. https://doi.org/10.1108/JEPP-01-2022-0018

Diaz-Serrano, L., & Kallis, G. (2022). Political leaders with professional background in business and climate outcomes. *Climatic Change, 172*, 14. https://doi.org/10.1007/s10584-022-03363-6

Diaz-Serrano, L., & Meix-Llop, E. (2019). Decentralization and the quality of public services: Cross-country evidence from educational data. *Environment and Planning C: Politics and Space*, *37*(7), 1296–1316. https://doi.org/10.1177/2399654418824602

Díez-Martín, F., Blanco-González, A., & Prado-Román, C. (2016). Explaining Nation-Wide Differences in Entrepreneurial Activity: A Legitimacy Perspective. *International Entrepreneurship and Management Journal*, *12*, 1079–1102. https://doi.org/10.1007/s11365-015-0381-4

Dima, B., Lobonţ, O.-R., & Moldovan, N.-C. (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. https://doi.org/10.2298/PAN1604425D

European Commission. (n.d.). *Supporting entrepreneurship.* https://single-market-economy.ec.europa.eu/smes/supporting-entrepreneurship_en

European Commission. (2022). *Launch event for the Spanish Regulatory Sandbox on Artificial Intelligence*. https://digital-strategy.ec.europa.eu/en/events/launch-event-spanish-regulatory-sandbox-artificial-intelligence

Feng, Y., Lagakos, D., & Rauch, J. (2018). Unemployment and Development. *NBER Working Paper* 25171. https://doi.org/10.3386/w25171

Foss, N. J., Klein, P. G., & Bjørnskov, C. (2019). The Context of Entrepreneurial Judgment: Organizations, Markets, and Institutions. *Journal of Management Studies, 56*(6), 1197-1213. https://doi.org/10.1111/joms.12428

Fotopoulos, G., & Storey, D. J. (2019). Public Policies to Enhance Regional Entrepreneurship: Another Programme Failing to Deliver? *Small Business Economics, 53*(1), 189-209, https://doi.org/10.1007/s11187-018-0021-9

Friske, W. M., & Zachary, M. A. (2019). Regulation, New Venture Creation, and Resource-Advantage Theory: an Analysis of the U.S. Brewing Industry. *Entrepreneurship Theory and Practice, 43*(5), 999-1017. https://doi.org/10.1177/1042258718760840

Fritsch, M., Kritikos, A., & Pijnenburg, K. (2015). Business Cycles, Unemployment and Entrepreneurial Entry – Evidence from Germany. *International Entrepreneurship and Management Journal, 11*, 267–286. https://doi.org/10.1007/s11365-014-0326-3

Haggard, D. L., & Haggard, K. S. (2018). The Impact Of Law, Religion, And Culture On The Ease Of Starting A Business. *International Journal of Organization Theory & Behavior, 21*(4), 242-257. https://doi.org/10.1108/IJOTB-04-2018-0043

Heyman, F., Norbäck, P., Persson, L., & Fredrik, A. (2019). Has the Swedish Business Sector Become More Entrepreneurial Than the US Business Sector? *Research Policy, 48*.

Galindo-Martín, M. A., Méndez-Picazo, M. T., & Castaño-Martínez, M. S. (2019). The Role of Innovation and Institutions in Entrepreneurship and Economic Growth in Two Groups of Countries. *International Journal of Entrepreneurial Behaviour and Research, 26*(3), 485-502. https://doi.org/10.1108/IJEBR-06-2019-0336

GEM. (n.d.). *1. What is the Adult Population Survey*. https://www.gemconsortium.org/wiki/1141

Ginsburg, T. (2011). Pitfalls of Measuring the Rule of Law. *Hague Journal on the Rule of Law*, *3*, 269-280. https://doi.org/10.1017/S187640451120006X

Global Entrepreneurship Research Association. (n.d.). http://www.gemconsortium.org

Greene, F. G. (2020). *Entrepreneurship. Theory and practice*. Red Globe Press.

Hughes, R. C. (2022). Regulatory Entrepreneurship, Fair Competition, and Obeying the Law. *Journal of Business Ethics, 181*, 249–261. https://doi.org/10.1007/s10551-021-04932-y

Hunt, R. A., & Fund, B. R. (2016). Environmental Policies Enable Environmentally Friendly Ventures in The Short Run Through Multiple Mechanisms but Risk Crowding out Superior Solutions in the Longer Run.

International Trade Administration. (2022, July 29). *Import Requirements and Documentation.* https://www.trade.gov/country-commercial-guides/spain-import-requirements-and-documentation

Ismael, J. (2019). Determinism, Counterpredictive Devices, and the Impossibility of Laplacean Intelligences. *The Monist*, *102*, 478-498. https://doi.org/10.1093/monist/onz021

Itskhoki, O., & Moll, B. (2019). Optimal Development Policies With Financial Frictions. *Econometrica, 87*, 139-173. https://doi.org/10.3982/ECTA13761

Jha, C. K., & Bhuyan, R. (2020). Do Financial Reforms Promote Entrepreneurship? *Finance Research Letters, 34*. https://doi.org/10.1016/j.frl.2019.08.020

Kimjeon, J., & Davidsson, P. (2022). External Enablers of Entrepreneurship: A Review and Agenda for Accumulation of Strategically Actionable Knowledge. *Entrepreneurship Theory and Practice, 46*(3), 643-687. https://doi.org/10.1177/10422587211010673

Kurowska-Pysz, J. (2016). Opportunities for Cross-Border Entrepreneurship Development in a Cluster Model Exemplified by the Polish–Czech Border Region. *Sustainability 8*(3). https://doi.org/10.3390/su8030230

La Moncloa (n.d.). *High Commissioner for Spain Entrepreneurial Nation.* https://www.lamoncloa.gob.es/lang/en/temas/entrepreneurial-nation/Paginas/index.aspx

Laffan, B. (2001). The European Union Polity: A Union of Regulative, Normative and Cognitive Pillars. *Journal of European Public Policy, 8*(5), 709–727. https://doi.org/10.1080/13501760110083473

Leyden, D. P., & Link, A. N. (2015). Toward a Theory of the Entrepreneurial Process. *Small Business Economics, 44*, 475-484. https://doi.org/10.1007/s11187-014-9606-0

Lombardi, R., Lardo, A., Cuozzo, B., & Trequattrini, R. (2017). Emerging Trends in Entrepreneurial Universities within Mediterranean Regions: An International Comparison. *EuroMed Journal of Business, 12*(2), 130-145. https://doi.org/10.1108/EMJB-10-2015-0052

Martin, L. M., Warren-Smith, I., Schofield, C., & Millman, C. (2013). Exploring SME Advice and Training Needs for Entrepreneurial Rural Firms. *The International Journal of Entrepreneurship and Innovation, 14*(2), 95-102. https://doi.org/10.5367/ijei.2013.0110

Maurer, J. D., Creek, S. A., Bendickson, J. S., McDowell, W. C., & Mahto, R. V. (2022). The Three Pillars' Impact on Entrepreneurial Activity and Funding: A Country-Level Examination. *Journal of Business Research*, *142*, 808-818. https://doi.org/10.1016/j.jbusres.2021.12.080

Mello, L. P. d., Moraes, G. H. S. M. d., & Fischer, B. B. (2022). The Impact of the Institutional Environment on Entrepreneurial Activity: An Analysis of Developing and Developed Countries. *Journal of Entrepreneurship and Public Policy, 11*(1), 1-22. https://doi.org/10.1108/JEPP-09-2021-0113

Méndez-Picazo, M. T., Galindo-Martín, M. A., & Castaño-Martínez, M. S. (2021). Effects of sociocultural and economic factors on social entrepreneurship and sustainable development. *Journal of Innovation & Knowledge*, *6*(2), 69-77.

Mendonça Silva, P., Ferreira Moutinho, V., Carrizo Moreira, A. (2022). Do Social and Economic Factors Affect the Technical Efficiency in Entrepreneurship Activities? Evidence from European Countries Using a Two-Stage DEA Model. *Socio-Economic Planning Sciences, 82*(B). https://doi.org/10.1016/j.seps.2022.101314

Munyo, I., & Veiga, L. (2022). Entrepreneurship and Economic Growth. *Journal of the Knowledge Economy*. https://doi.org/10.1007/s13132-022-01032-8

Nielsen, B. B., & Raswant, A. (2018). The Selection, Use, and Reporting of Control Variables in International Business Research: A Review and Recommendations. *Journal of World Business, 53*(6), 958-968. https://doi.org/10.1016/j.jwb.2018.05.003

Niyungeko, A. (2022). Evaluating Starting a Business Indicators Innovation in the World. *Management & Economics Research Journal*, *4*(1), 1-17. https://doi.org/10.48100/merj.2022.172

North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge University Press. https://doi.org/10.1017/CBO9780511808678

Nunes, A., & Savosh, K. (2022). Worldwide Effect of Business Environment Factors on Innovation. *Journal of Entrepreneurship: Research & Practice, 2022*(2022).

OECD. (n.d.a). *About the OECD*. https://www.oecd.org/about/

OECD. (n.d.b). *Latvia's accession to the OECD*. https://www.oecd.org/latvia/latvia-accession-to-the-oecd.htm

OECD. (n.d.c). *Slovenia's accession to the OECD*. https://www.oecd.org/slovenia/sloveniasaccessiontotheoecd.htm

Palthe, J. (2014). Regulative, Normative, and Cognitive Elements of Organizations: Implications for Managing Change. *Management and Organizational Studies, 1*(2), 59-66. http://dx.doi.org/10.5430/mos.v1n2p59

Piaggio, M., Padilla, E., & Román, C. (2017). The Long-Term Relationship between CO2 Emissions and Economic Activity in a Small Open Economy: Uruguay 1882–2010. *Energy Economics, 65*, 271-282. https://doi.org/10.1016/j.eneco.2017.04.014

Pieterse, J. N. (1996). Globalisation and Culture: Three Paradigms. *Economic and Political Weekly, 31*(23), 1389–1393.

Pinheiro-Alves, R., & Zambujal-Oliveira, J. (2012). The Ease of Doing Business Index as a Tool for Investment Location Decisions. *Economics Letters, 117*(1), 66-70. https://doi.org/10.1016/j.econlet.2012.04.026

Powell, W. W., & DiMaggio, P. J. (Eds.). (1991). *The New institutionalism in organizational analysis.* The University of Chicago Press.

Reynolds, P. (2000). *Global Entrepreneurship Monitor: 1999 Executive Report*. http://dx.doi.org/10.13140/RG.2.1.4860.6247

Rin, M., Giacomo, M., & Sembenelli, A. (2011). Entrepreneurship, Firm Entry, and the Taxation of Corporate Income: Evidence from Europe. *Journal of Public Economics, 95*(9-10), 1048-1066. https://doi.org/10.1016/j.jpubeco.2010.06.010

Rodrik, D., Subramanian, A., & Trebbi, F. (2004). Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development. *Journal of Economic Growth, 9*, 131–165. https://doi.org/10.1023/B:JOEG.0000031425.72248.85

Rosado-Cubero, A., Freire-Rubio, T., & Hernández, A. (2022). Entrepreneurship: What Matters Most. *Journal of Business Research, 144*, 250-263. https://doi.org/10.1016/j.jbusres.2022.01.087

Rusu, S., Florin Lucian, I., Cureteanu, R., & Csorba, L. (2012). Entrepreneurship and Entrepreneur: A Review of Literature Concepts. *African Journal of Business Management*, *6*(10), 3570. https://doi.org/10.5897/AJBM11.2785

Schmutzler, J., Andonova, V., & Diaz-Serrano, L. (2019). How Context Shapes Entrepreneurial Self-Efficacy as a Driver of Entrepreneurial Intentions: A Multilevel Approach. *Entrepreneurship Theory and Practice*, *43*(5), 880-920. https://doi.org/10.1177/1042258717753142

Schneider, F. (2010). The Influence of Public Institutions on the Shadow Economy: An Empirical Investigation for OECD Countries. *Review of Law & Economics*, *6*(3), 441-468. https://doi.org/10.2202/1555-5879.1542

Scott, W. R. (2008). Approaching Adulthood: The Maturing of Institutional Theory. *Theory and Society, 37*, 427–442. https://doi.org/10.1007/s11186-008-9067-z

Scott, W. R. (2013). *Institutions and organizations: ideas, interests and identities* (4th ed.). Stanford University.

Sendra-Pons, P., Comeig, I., & Mas-Tur, A. (2022) Institutional Factors Affecting Entrepreneurship: A QCA Analysis. *European Research on Management and Business Economics, 28*(3). https://doi.org/10.1016/j.iedeen.2021.100187

Sonnenfeld, J., Tian, S., Zaslavsky, S., Bhansali, Y., & Vakil, R. (2022). It Pays For Companies To Leave Russia. http://dx.doi.org/10.2139/ssrn.4112885

Tan, Z., Wu, Y., Gu, Y., Liu, T., Wang, W., & Liu, X. (2022). An Overview on Implementation of Environmental Tax and Related Economic Instruments in Typical Countries. *Journal of Cleaner Production, 330*. https://doi.org/10.1016/j.jclepro.2021.129688

Tarko, V., & Safner, R. (2022). International Regulatory Diversity over 50 Years: Political Entrepreneurship within Fiscal Constraints. *Public Choice*, *193*(1), 79-108. https://doi.org/10.1007/s11127-022-01011-2

The Global Entrepreneurship Monitor (GEM). (n.d.). *Key terminology*. http://gem-consortium.ns-client.xyz/wiki/1154

The World Bank. (n.d.a). *Business Reforms in Portugal.* https://archive.doingbusiness.org/en/reforms/overview/economy/portugal

The World Bank. (n.d.b). *Business Reforms in Spain.* https://archive.doingbusiness.org/en/reforms/overview/economy/spain

The World Bank. (n.d.c). *Doing Business 2004-2020.* https://archive.doingbusiness.org/en/doingbusiness

The World Bank. (n.d.d). *Paying Taxes.* https://subnational.doingbusiness.org/en/data/exploretopics/paying-taxes/reforms

Tripathi, M. A., Tripathi, R., Sharma, N., Singhal, S., Jindal, M., & Aarif, M. (2022). A Brief Study on Entrepreneurship and Its Classification. *International Journal of Health Sciences, 6*(S2). https://doi.org/10.53730/ijhs.v6nS2.6907

Veciana, J., & Urbano, D. (2008). The Institutional Approach to Entrepreneurship Research. Introduction. *International Entrepreneurship and Management Journal, 4,* 365-379. https://doi.org/10.1007/s11365-008-0081-4

Verba, S. (1967). Democratic Participation. *The ANNALS of the American Academy of Political and Social Science*, *373*(1), 53-78. https://doi.org/10.1177/000271626737300103

Whitley, R. D. (1999). *Divergent capitalisms: The social structuring and change of business systems.* Oxford University Press.

Williamson, O. E. (2017). *Contract, governance and transaction cost economics* (G. Chen, Ed.). World Scientific Publishing Co Pte Ltd.

World Bank Group (2021, January 21). *Approach Paper Doing Business Indicators and Country*. https://ieg.worldbankgroup.org/sites/default/files/Data/reports/ap_doingbusiness.pdf

United Nations. (n.d.). *Promote inclusive and sustainable economic growth, employment and decent work for all.* https://www.un.org/sustainabledevelopment/economic-growth/

Urbano, D., & Aparicio, S. (2016). Entrepreneurship Capital Types and Economic Growth: International Evidence. *Technological Forecasting and Social Change, 102*, 34-44. https://doi.org/10.1016/j.techfore.2015.02.018

Urbano, D., Aparicio, S., & Audretsch, D. (2019). Twenty-Five Years of Research on Institutions, Entrepreneurship, and Economic Growth: What Has Been Learned? *Small Business Economics, 53*, 21-49. https://doi.org/10.1007/s11187-018-0038-0

Zhao, Y., Chen, Q., & de Haan, J. (2022). Does Central Bank Independence Matter for the Location Choices of Chinese Firms' Foreign Investments? *International Business Review*, *32*(4). https://doi.org/10.1016/j.ibusrev.2022.102092

Annex

Table A1

List of variables and definitions

Name	Short Name	Description	Source
		INDEPENDENT VARIABLE	
Total early-stage Entrepreneurial Activity (percentage)	TEA	Percentage of 18-64 population who are either a nascent entrepreneur or owner-manager of a new (less than 3.5 years old) business.	GEM APS
Log transformed TEA	LnTEA	the TEA variable after applying the natural logarithm transformation	Own calculation
		DEPENDENT VARIABLES	
		Regulative pillar	
Starting a business	RegStart	The simple average of the scores for component indicators: the procedures, time and cost for an entrepreneur to start and formally operate a business, and the paid-in minimum capital requirement	World Bank
Paying taxes	RegTax	The simple average of the scores for component indicators: the payments, time and total tax and contribution rate for a company to comply with tax laws in an economy, as well as the postfiling procedures to request and process a VAT refund claim and to comply with and complete a corporate income tax correction	World Bank
Trading across borders	RegTrade	The simple average of the scores for the duration and expenses (excluding tariffs) related to distinct sets of procedures: documentary compliance, border compliance as a part of the process of shipping goods across borders, either for export or import purposes. Domestic transport time and costs are not included in to the index.	World Bank
Enforcing contracts	RegContr	The simple average of the scores for component indicators: the procedures, time and cost for resolving a commercial dispute in a local first-instance court	World Bank
Resolving insolvency	RegInsolv	The simple average of the scores for component indicators: the recovery rate of insolvency proceedings involving domestic entities, as well as the strength of the legal framework applicable to judicial liquidation and reorganization proceedings	World Bank
Market openness	RegMkt	The extent to which new firms are free to enter existing markets	NES GEM
		Normative pillar	
Perceived Capabilities Rate	Norm	Percentage of 18-64 population (individuals involved in any stage of entrepreneurial activity excluded)	APS GEM

		who believe they have the required skills and knowledge to start a business	
		Cultural-cognitive pillar	
Cultural and Social Norms	Clt	The extent to which social and cultural norms encourage or allow actions leading to new business methods or activities that can potentially increase personal wealth and income.	NES GEM
		Control variables	
Population size (thousands persons) in the value of natural logarithm	Pop	The number of inhabitants irrespective of their status (legally /illegally reside citizenship)	World Bank
Unemployment rate (% of total labor force)	UnEmp	The share of individuals within the labor force who are currently not employed but actively looking for work and are ready to engage in employment. The labor force consists of individuals aged 15 and above who contribute their labor to the production of goods and services within a specified timeframe (actively employed, actively seeking employment, and those who are newly entering the job market)	World Bank
Urban population (% of total population)	Urb	The percentage of the estimated total population residing in areas designated as urban by national statistical authorities	World Bank

Source: own elaboration.

Table A2

Descriptive statistics

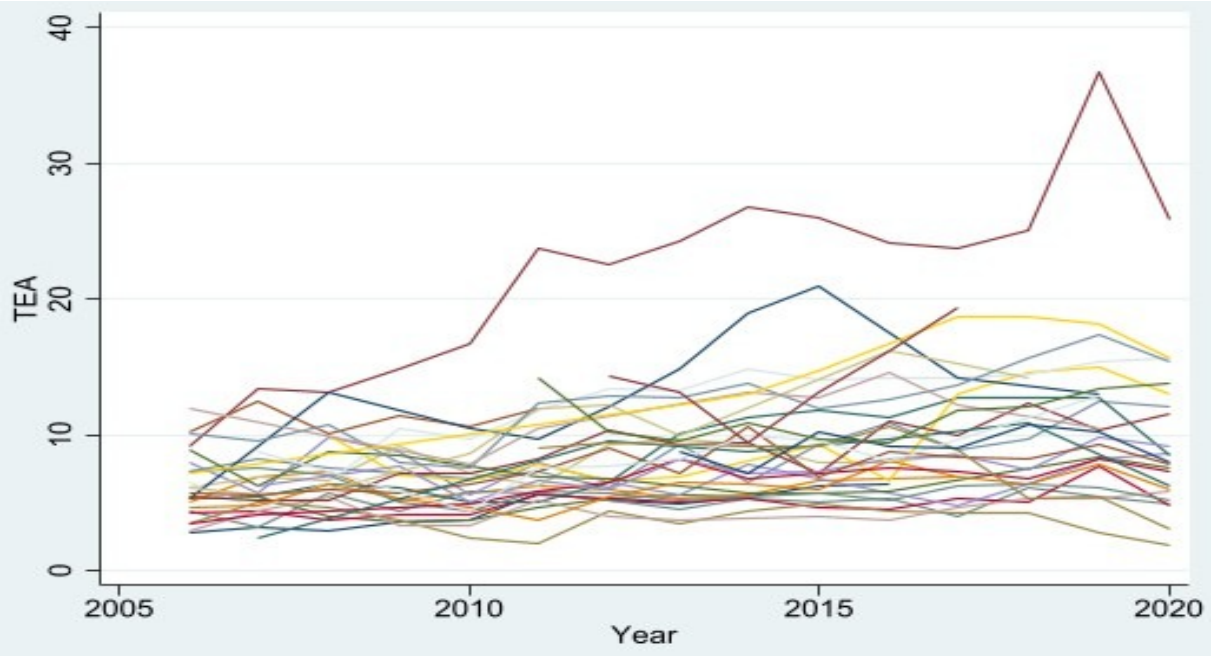
Variable		Mean	Std.Dev.	Min	Max
TEA	overall	8.719	4.608	1.900	36.710
	between		4.074	3.721	21.751
	within		2.288	-3.842	23.678
lnTEA	overall	2.051	0.471	0.642	3.603
	between		0.421	1.271	3.024
	within		0.239	0.977	2.630
RegStart	overall	87.684	6.957	59.660	98.200
	between		5.054	77.711	97.771
	within		4.852	63.640	104.199
RegTax	overall	80.491	8.514	51.950	95.330
	between		7.389	61.200	95.185
	within		3.722	65.891	96.153
RegTrade	overall		5.736	56.650	93.900
	between		5.603	69.122	92.995
	within		1.505	72.444	89.054
RegContr	overall	67.493	10.856	34.470	85.700
	between		10.231	42.063	85.700
	within		1.976	59.899	75.477
RegInsolv	overall	71.611	14.839	31.080	93.890
	between		14.182	35.220	93.293
	within		4.647	52.921	86.941
RegMkt	overall	3.064	0.860	1.890	5.850
	between		0.960	2.357	5.442
	within		0.230	2.115	3.959
Norm	overall	44.692	9.639	10.050	75.540
	between		9.258	12.086	64.243
	within		4.512	32.100	66.879
Clt	overall	3.175	0.878	1.950	6.430
	between		0.959	2.242	5.922
	within		0.269	2.282	4.452
LnPop	overall	9.544	1.426	5.718	12.719
	between		1.592	5.753	12.696
	within		0.028	9.409	9.650

UnEmp	overall	7.965	4.490	2.250	27.470
	between		3.484	2.936	17.773
	within		2.567	-2.048	17.662
Urb	overall	77.036	11.506	51.760	97.920
	between		11.816	53.365	97.693
	within		1.014	71.652	80.397

Note. Number of observations: 358. Groups: 33. Source: own elaboration.

Figure A1

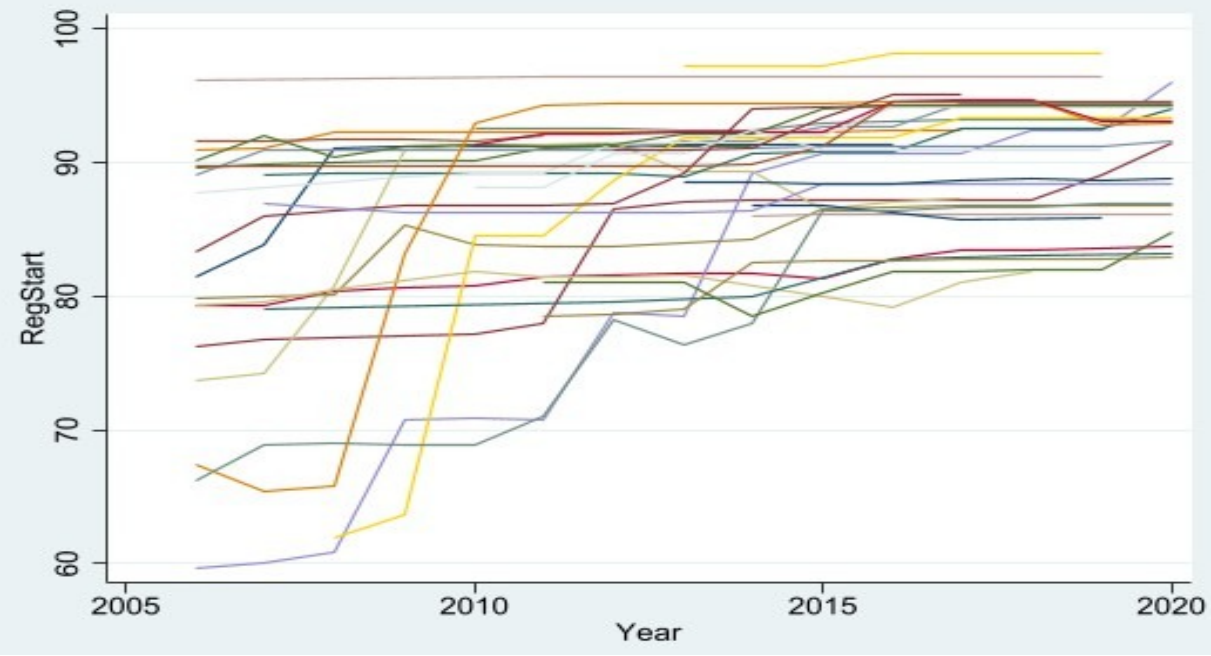
Longitudinal changes of Total early-stage Entrepreneurial Activity of 33 OECD countries in 2006-2020



Source: own elaboration.

Figure A2

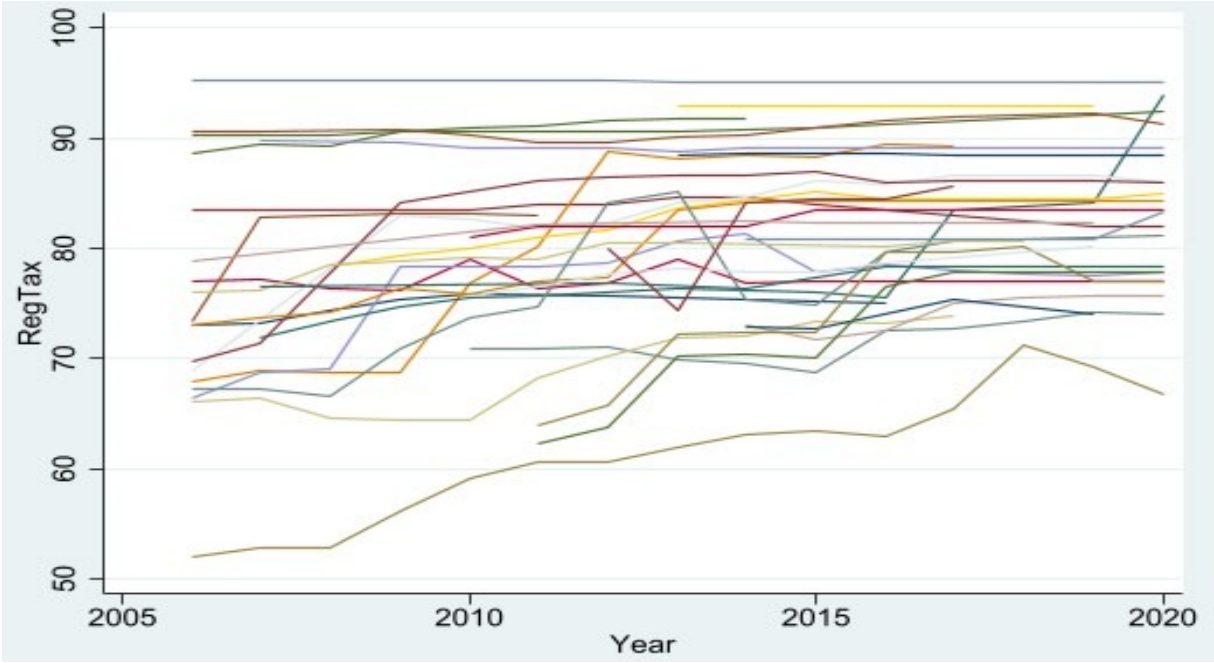
Regulative pillar: longitudinal changes of Starting a business indicator of 33 OECD countries in 2006-2020



Source: own elaboration.

Figure A3

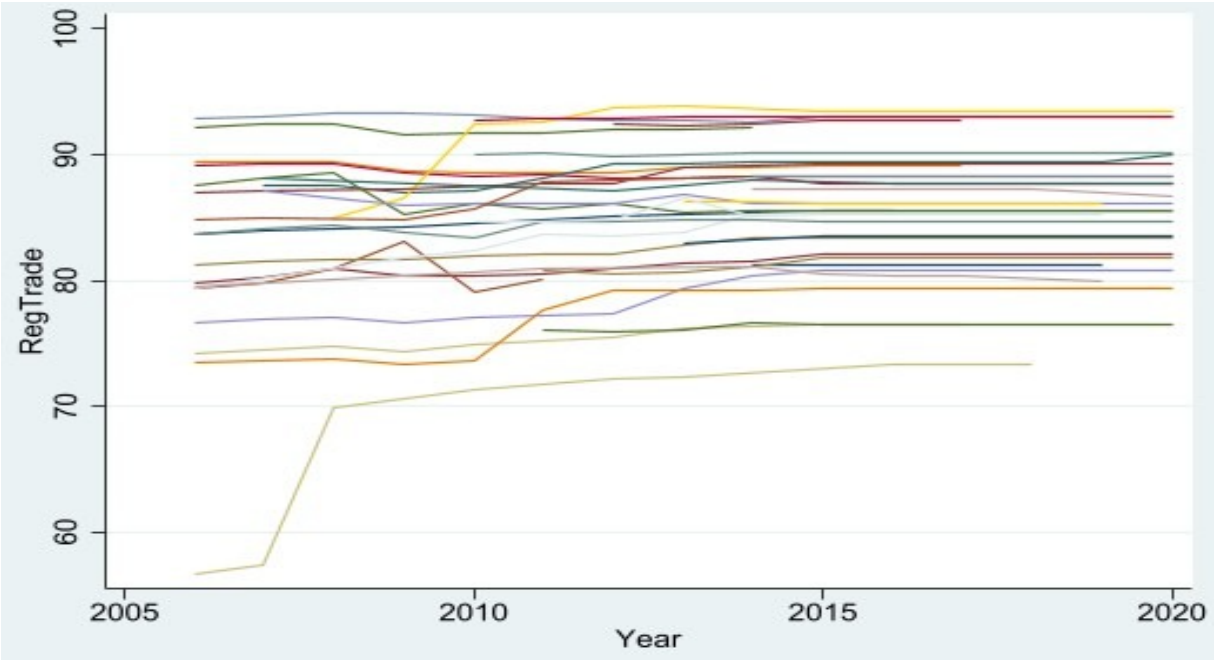
Regulative pillar: longitudinal changes of Paying taxes indicator of 33 OECD countries in 2006-2020



Source: own elaboration.

Figure A4

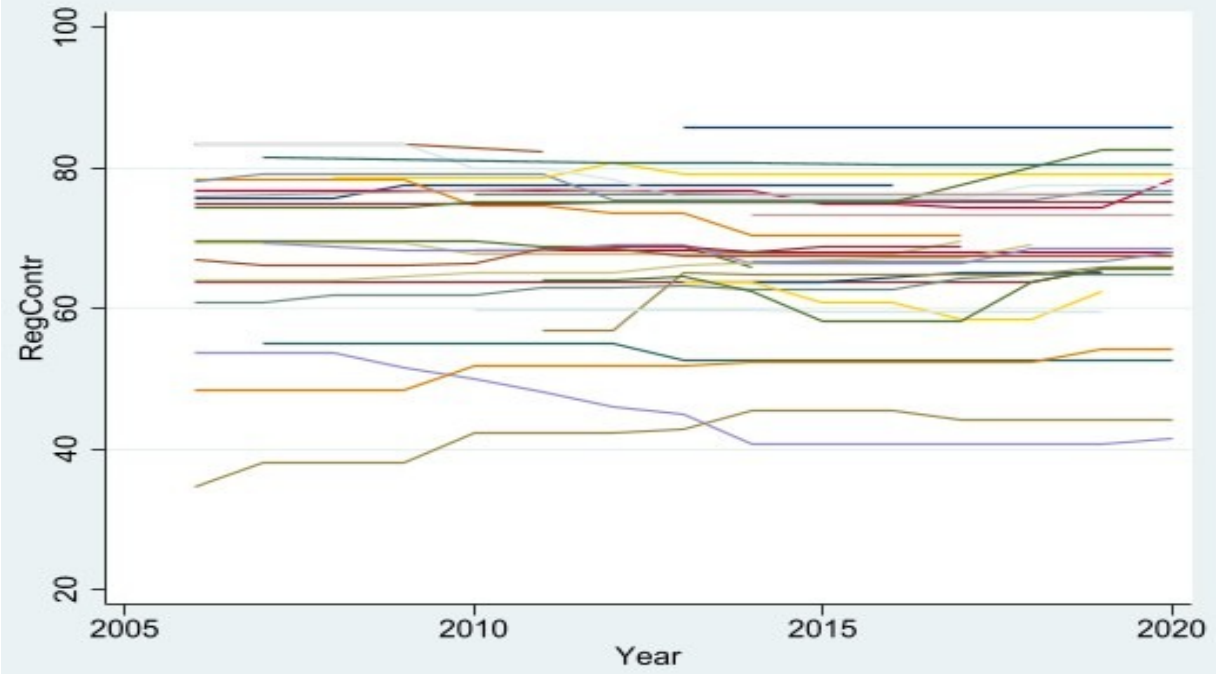
Regulative pillar: longitudinal changes of Trading across borders indicator of 33 OECD countries in 2006-2020



Source: own elaboration.

Figure A5

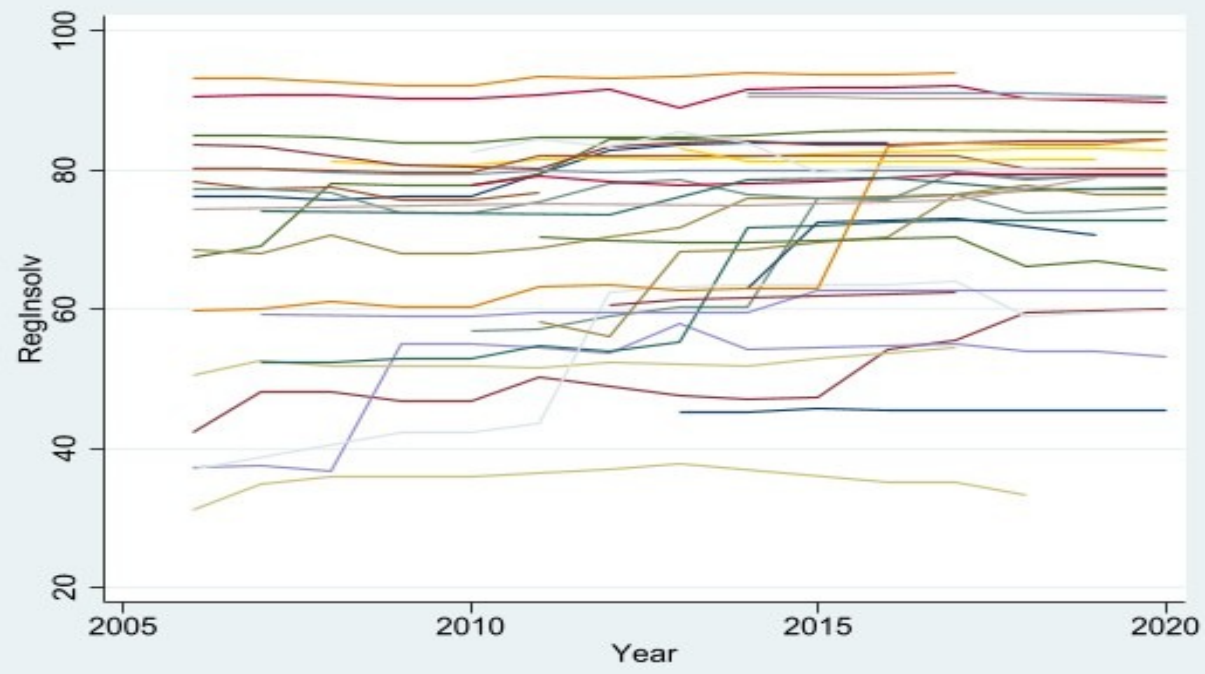
Regulative pillar: longitudinal changes of Enforcing contracts indicator of 33 OECD countries in 2006-2020



Source: own elaboration.

Figure A6

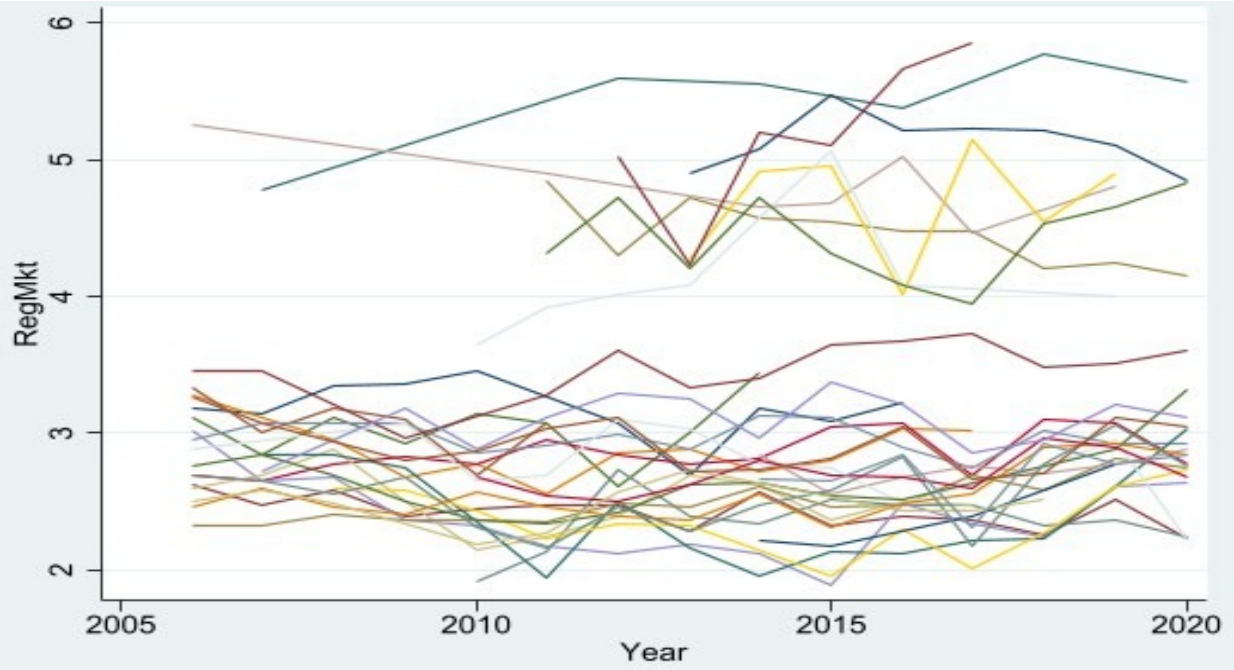
Regulative pillar: longitudinal changes of Resolving insolvency indicator of 33 OECD countries in 2006-2020



Source: own elaboration.

Figure A7

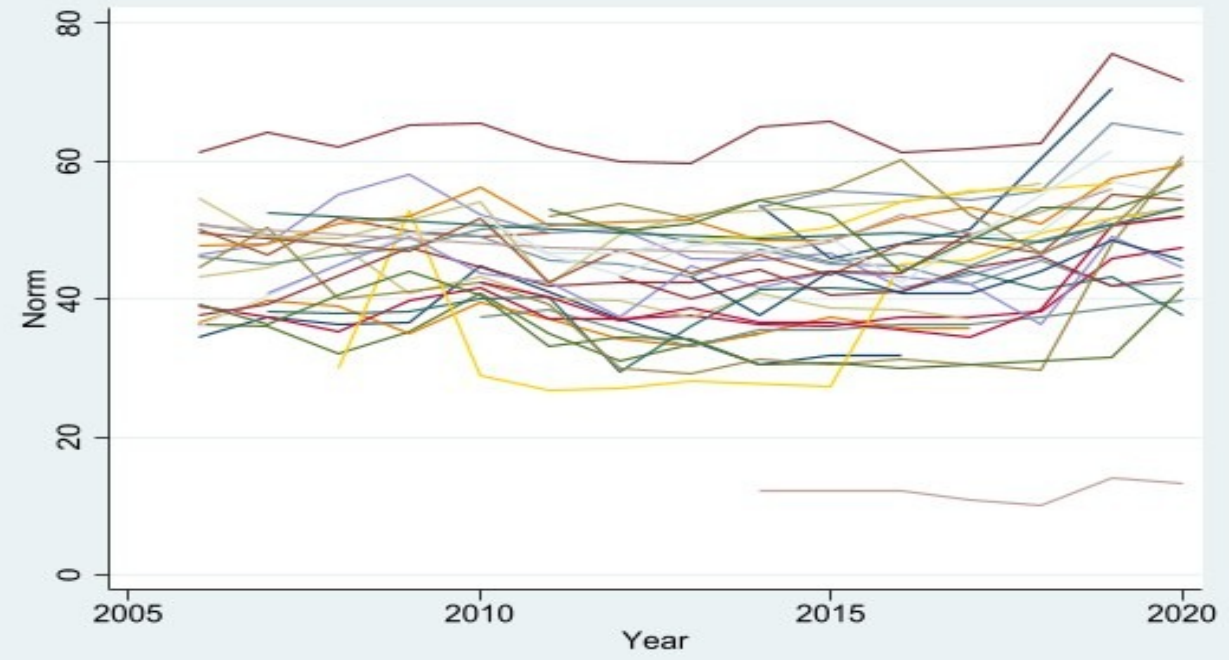
Regulative pillar: longitudinal changes of Market openness indicator of 33 OECD countries in 2006-2020



Source: own elaboration.

Figure A8

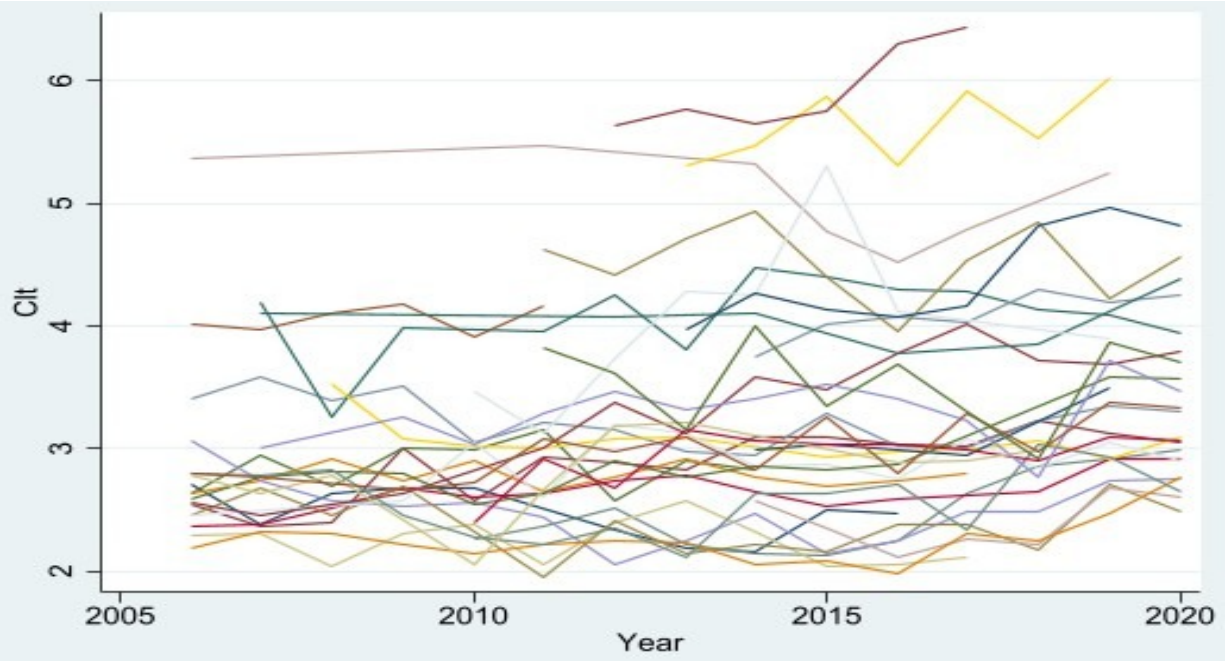
Normative pillar: longitudinal changes of Perceived Capabilities Rate of 33 OECD countries in 2006-2020



Source: own elaboration.

Figure A9

Cultural-cognitive pillar: longitudinal changes of Cultural and Social Norms indicator of 33 OECD countries in 2006-2020



Source: own elaboration.

Table A3

Correlation matrix

	TEA	LnTEA	RegStart	RegTax	RegTrade	RegContr	RegInsolv	RegMkt	Norm	Clt	LnPop	UnEmp	Urb
TEA	1.000												
LnTEA	.942***	1.000											
RegStart	.152**	.183***	1.000										
RegTax	.252***	.335***	.457***	1.000									
RegTrade	-.098	-.083	.431***	.397***	1.000								
RegContr	.075	.143**	.239***	.391***	.371***	1.000							
RegInsolv	-.252***	-.247***	.300***	.174***	.601***	.247***	1.000						
RegMkt	.148**	.214***	.103	.132*	.023	.264***	.053	1.000					
Norm	.580***	.547***	-.122*	.123*	-.363***	.-196***	-.328***	.160**	1.000				
Clt	.410***	.479***	.265***	.268***	.171**	.156**	.033	.739***	.259***	1.000			
LnPop	-.056	-.134*	-.208***	-.293***	.042	-.172**	.241***	-.260***	-.050	-.166**	1.000		
UnEmp	-.119*	-.120*	-.179***	-.198***	-.224***	-.372***	-.259***	-.153**	.158**	-.239***	-.009	1.000	
Urb	.077	.035	.224***	.165**	.331***	.276***	.155**	-.183***	-.290***	.043	.143**	-.187***	1.000

Table A4

Estimation results

	Full model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16	Model 17	Model 18
									Regulative pillar										
RegStart	-0.005	0.010***									-0.001								
	(0.003)	(0.030)									(0.003)								
RegTax	-0.010*		0.011**									-0.009*							
	(0.004)		(0.004)									(0.004)							
RegTrade	0.033***			0.054***									0.025**						
	(0.009)			(0.008)									(0.009)						
RegContr	-0.007				-0.005									-0.005					
	(0.005)				(0.007)									(0.006)					
RegInsolv	-0.001					0.014***									0.000				
	(0.003)					(0.003)									(0.003)				
RegMkt	0.057						0.110									0.083			
	(0.055)						(0.057)									(0.053)			
									Normative pillar										
Norm	0.010***							0.007*									0.011***		0.010***
	(0.003)							(0.003)									(0.003)		(0.003)
									Cultural-cognitive pillar										
Clt	0.113*								0.255***									0.151**	0.132**
	(0.050)								(0.047)									(0.483)	(0.048)
									Control variables										
LnPop	0.877									1.393**	1.335*	1.155*	1.320*	1.434**	1.397**	-1.462**	1.411**	1.310*	1.336*
	(0.542)									(0.532)	(0.550)	(0.539)	(0.527)	(0.535)	(0.003)	(0.533)		(0.525)	(0.516)
UnEmp	-0.016**									-0.021***	-0.020***	-0.019***	-0.021***	-0.022***	-0.021***	-0.021***	-0.022***	-.017**	-0.018***

	(0.005)									(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Urb	-0.026									-0.003	-.003	-0.002	-0.115	-0.002	-0.002	-0.007	0.002	-0.022	-0.015
	(0.019)									(0.018)	(0.018)	0.018	(0.177)	(0.018)	(0.018)	(0.018)	(0.017)	(0.018)	(0.018)
_const	-6.181	1.144***	1.161***	-2.549***	2.403***	1.080***	1.713***	1.716***	1.242***	-10.854*	-10.163	-7.910	-11.612*	-10.982*	-10.967*	-11.462*	-11.988*	-9.103	-10.363*
	(5.495)	(0.235)	(0.283)	(0.704)	(0.453)	(0.198)	(0.176)	(0.131)	(0.151)	(5.307)	(5.555)	(5.426)	(5.253)	(5.313)	(5.363)	(5.308)	(5.203)	(5.263)	(5.181)
										Model description									
Year fixed-effects	Yes	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2 within	.403	.044	.030	.116	.002	.070	.011	.020	.082	.318	.318	.329	.335	.319	.318	.323	.349	.339	.365
corr(u_i, Xb)	-.951	.035	.167	-.647	-.296	-.628	.014	.507	.005	-.979	-.978	-.972	-.977	-.981	-.979	.-981	-.979	-.975	-.976
sigma_u	1.536	0.413	0.402	0.561	0.429	0.511	0.407	0.377	0.345	2.311	2.222	1.969	2.199	2.387	2.318	2.390	2.327	2.138	2.172
sigma_e	0.202	0.245	0.247	0.236	0.251	0.242	0.249	0.248	0.240	0.213	0.213	0.211	0.210	0.213	0.213	0.212	0.208	0.210	0.206
rho	0.983	0.739	0.726	0.850	0.746	0.817	0.727	0.697	0.673	0.992	0.991	0.989	0.991	0.992	0.992	0.992	0.992	0.990	0.991

Note. Number of observations: 358. Significance level: p < .001*** , p < .010** , p < .050*. For the Full model: F (25, 300) = 8.9; p-value = .000. For the Model 4: F(1, 324) = 0.60; p-value = .438. For the Model 6: F(1, 324) = 3.71; p-value = .055. Other models hold the significance level p-value < .050. Source: own elaboration.

Years fixed-effects for the Full model

	_const	y2006	y2007	y2008	y2009	y2010	y2011	y2012	y2013	y2014	y2015	y2016	y2017	y2018	y2019	y2020
Coef	-6.181	-0.290*	-0.269*	-0.182	-0.144	-0.219*	-0.034	0.080	0.079	0.104	0.102	0.145*	0.143*	0.173**	0.127*	(base)
Std. Err.	5.495	0.113	0.105	0.103	0.093	0.088	0.085	0.081	0.078	0.072	0.070	0.066	0.064	0.064	0.060	(base)

Source: own elaboration.

Full model represents three institutional pillars with control for other countries' characteristics and year fixed-effects.

Models 1-6 represent estimation of distinct Regulative pillar's variables.

Model 7 represents Normative pillar.

Model 8 represents Cultural-cognitive pillar.

Model 9 represents our control for other countries' characteristics and year fixed-effects.

Models 10-15 represent estimation of distinct regulative variables with control for other countries' characteristics and year fixed-effects.

Model 16 represents Normative pillar with control for other countries' characteristics and year fixed-effects.

Model 17 represents Cultural-cognitive pillar with control for other countries' characteristics and year fixed-effects.

Model 18 represents Normative and Cultural-cognitive pillar with control for other countries' characteristics and year fixed-effect.