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The Brazilian Entrepreneurial Ecosystem of Startups: an analysis of entrepreneurship determinants in Brazil as seen from the OECD pillars

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Abstract

This paper presents the main findings exacted from a quantitative and qualitative investigation into mapping the Brazilian startup entrepreneurial ecosystem. The analysis was set up as of the six entrepreneurship determinant categories defined by the Organization of Economic Co-Operation and Development (OECD), to wit: the regulatory framework; market conditions; access to finance; the creation and diffusion of knowledge; entrepreneurial capabilities; and entrepreneurship culture. The study involved gathering quantitative data from secondary bases underlying each one of the six pillars and interviewing Brazilian representatives of the determinants indicated above, to proceed to understand which development stage Brazil is in as concerns encouraging entrepreneurial practice and the favorability of the entrepreneurial ambiance in the country.

Key words: *Entrepreneurship. Startup. Ecosystem. Determinants. OECD.*

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1. INTRODUCTION

High-growth startup companies tend to improve their chances of success when inserted in an entrepreneurial ecosystem that encourages business development and innovation. Two benchmarks are the Silicon Valley and Israel, world-acclaimed for their success in entrepreneurial development and for yielding, in one year, more successful startups than other nations could create in years or decades. Although their respective ambiances are completely different, both Israel and the Silicon Valley seem to contain a combination of variables in their ecosystem that encourages the entrepreneurial activity to blossom.

Thus, it is plausible to believe that different nations, albeit resting upon different contexts, are capable of building their own entrepreneurial ecosystems that can encourage the appearance of successful business concerns. For such, the strengths and weaknesses particular to any such community or country beg understanding to develop their entrepreneurship ecosystem on a par with the needs posed by local reality.

Isenberg (2010) postulates that "there's no exact formula for creating an entrepreneurial economy; there are only practical, if imperfect, road maps". This is akin to saying that it is not possible, for example, to replicate a new Silicon Valley in another community or nation by simply replicating the same characteristics of its entrepreneurship ecosystem; rather that, it is feasible to identify benchmark elements to be analyzed and developed according to each country's specific reality.

For the purposes of this study, benchmark elements are the OECD's entrepreneurship determinant groups, to wit: the regulatory framework; market conditions; access to finance; the creation and diffusion of knowledge; entrepreneurial capabilities and entrepreneurship culture. The research effort starts from these pillars to investigate who are the actors composing the Brazilian entrepreneurship ecosystem and what role they play as they operate and evolve. Thus, this effort systematically identifies the characteristics, strengths and weaknesses of the Brazilian entrepreneurship environment focusing on the development of startups, becoming a relevant tool to steer the progress of entrepreneurial practice in Brazil.

The research also indicates benchmark countries for each of the investigation's pillars and draws a comparison with the Brazilian reality, seeking to broaden the comprehension of the country's entrepreneurial ecosystem.

To meet the proposed objectives, the full study on which this paper is based was structured in two stages, the first being a qualitative research comprised of in-depth interviews with different actors in the Brazilian entrepreneurship environment, amidst which notably startup entrepreneurs, investors and investment fund managers, researchers from public universities and representatives of entrepreneurship supporting institutions, such as hubs, incubators, accelerators and law firms from five Brazilian states; and a second stage comprising a research effort involving the compilation of secondary quantitative data gathered from official institutions such as the World Bank, Unesco, the OECD, and the Brazilian Internal Revenue Service, among others, besides world-acclaimed research reports such as Doing Business, the Global Competitiveness Report, the Global Entrepreneurship Monitor (GEM), *inter alia*.

Notably, the construction of the quantitative database was based on OECD-developed methodology and represents a pioneer effort in that there are no known previous efforts of applying this entrepreneurship investigation and mapping technology in Brazil – a country that is not an OECD member – at the level of detail and systematization applied in this study.

Finally, this paper is divided into 5 Chapters. The next Chapter presents the main theoretical references used in the construction of the database and for analysis. Chapter 3 contains information on the methodology employed. Chapter 4 presents the main research findings, while Chapter 5 ends this paper by outlining conclusions on the proposed theme and evaluating possibilities for future studies.

2. THEORETICAL FOUNDATIONS

Resorting to Schumpeter's classic Capitalism, Socialism and Democracy is one of the pathways – and arguably the most concrete – to understand the reasons for the permanent relevance of entrepreneurship and the space it broaches in the discussion agendas concerning public policies worldwide.

In his writings, Schumpeter posits that the business concern is the fundamental element for the capitalist system to operate and develop. This is precisely due to entrepreneurship, which allows the creation of new products, new production methods and new business models, besides being the main responsible for opening new markets. (Schumpeter, 1975).

Governments of different nations are aware of its importance and regard this theme as the indispensable element to preserve the viability and competitiveness of a country's economy. However, the great attention given the subject worldwide notwithstanding, measuring entrepreneurship locally, regionally, nationally or internationally has loomed as a major challenge for decades (OECD, 2009).

In this sense, a few efforts have been undertaken in the attempt to systematize what could be called "an entrepreneurial economy model", pinpointing the main variables to be considered while assessing entrepreneurship. For the purposes of this study, two such models were used as main frameworks: Isenberg's (2011) and the OECD (2011).

Daniel Isenberg's model stems from the initiative developed at the Babson College called BEEP – Babson Entrepreneurship Ecosystem Project. By studying the different attempts at fostering entrepreneurship elsewhere in the world, those involved in the project understood that there was not a unique, single characteristic to determine the success of local entrepreneurship, quite the contrary: an entire ecosystem of variables was needed to foster entrepreneurship sustainable along time and indeed bringing positive social and economic impacts upon the economy. Then the next step was to develop the concepts and the methodology to understand different communities and nations, and work with each of their stakeholders upon the necessary elements for a blossoming, healthy and structured entrepreneurship ecosystem. As indicated in Figure 1, the following domains of entrepreneurship were defined: policy, finance, culture, supports, human capital and markets.

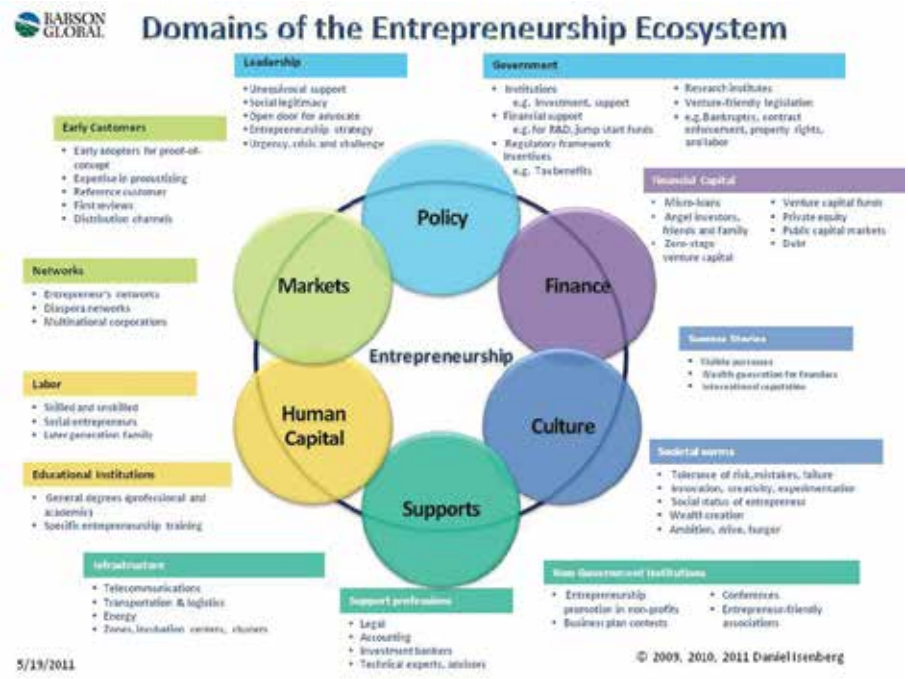

Figure 1: Domains of the Entrepreneurship Ecosystem

Source: ISENBERG, Daniel. **View the Ecosystem Diagram**, 2011. Available at: <http://entrepreneurial- revolution.com/view-the-ecosystem-diagram/> Acessed by: 25 april 2013.

Within the scope of *policy* are governmental institutions to support entrepreneurship, be they public universities that assume an important role by creating knowledge that will eventually be taken to market as a product, or regulatory bodies charged with the implementation of incentives for, or removal of bureaucratic barriers against, fostering business development.

Within the sphere of *finance* are private institutions in charge of entrepreneurship funding, such as angel investors, venture capital funds and seed capital, among others.

Culture encompasses all social characteristics of a community and the subjective aspects related to the manner by which individuals relate to each other, what they reproach and what is reason for recognition. All these aspects are evidently analyzed through the eyes of the entrepreneur. Fear of failure, for example, is a limiting cultural factor against the development of entrepreneurship.

Within the scope of *supports* are the institutions not belonging or related to government that play the role of entrepreneurship stimulators, such as hubs, accelerators, incubators, plus, for example, accounting and law firms required to provide support to the establishment of new companies.

Human capital include both those professionals who amassed their skills through entrepreneurship-veered education, and mass work force, an intrinsic need of a market seeking economic progress through the creation of new companies.

The *markets* orbit, finally, approaches the need of an existing consumer mass, ready to purchase new products and disseminate them via a domestic and international contact network.

Daniel Isenberg (2011) theorizes that the development of entrepreneurship will occur in fact only if these different ecosystem elements are handled altogether, albeit it is not necessary to "worry about changing everything on a full scale at once".

That perception might be a complement of Bygrave point of view on the same issue. He also understand entrepreneurship by being "embedded in a massive structure: society, government, culture, the economy, legal issues, business environment and so on" (Bygrave, 1998).

Thus, it is possible to question, for example, why does Korea not create a greater number of startups, considering the great affinity Koreans have with technology. The answer resides in culture, a determinant variable that is a development-limiting factor in that country. "In Korea, one should not be exposed while failing. Yet, in early 2000, many entrepreneurs jumped on the bandwagon of a new economy [the internet bubble]. When the bubble burst, their public failure left a scar on entrepreneurship" (Senor and Singer, 2009). The presence of skilled professionals in this case demonstrates a well-developed "human capital" domain, favorable to entrepreneurial development. However, without expounding on the "culture" domain, an entrepreneurial revolution in that country is not viable.

Even when analyzing countries of one specific geographic region, like it is the Latin America and Caribbean, for example, different strengths and weaknesses can be observed and have to be addressed individually, taking into account each ecosystem's peculiarities.

When analyzing the variables mapped to Latin America and the Caribbean in the 2012 edition of the Global Entrepreneurship Monitor (GEM) that are related to the individuals' attitudes and perceptions regarding the entrepreneurial environment of each country, it is clear that aspects such as entrepreneurship opportunities, training and fear of failure are differently perceived by each country's respondents and, therefore, differently affect the entrepreneurship development.

Table 1: Entrepreneurial Attitudes and Perceptions in the GEM Countries in 2012 by Geographic Region

Economy	Perceived opportunities	Perceived capabilities	Fear of failure*	Entrepreneurial intentions**	Entrepreneurship as a good career choice+	High status to successful entrepreneurs+	Media attention for entrepreneurship+
LATIN AMERICA & CARRIBEAN							
Argentina	50	63	27	29	74	67	63
Barbados	47	70	17	23	-	-	-
Brazil	52	54	31	36	89	86	86
Chile	65	60	28	43	70	68	66
Colombia	72	57	32	57	89	75	69
Costa Rica	47	63	35	33	72	72	79
Ecuador	59	72	33	51	88	84	79
El Salvador	43	59	42	40	73	72	62
Mexico	45	62	26	18	56	54	38
Panama	38	43	17	12	-	-	-
Peru	57	65	30	45	77	73	76
Trinidad & Tobago	59	76	17	37	78	76	64
Uruguay	51	58	27	20	61	59	51
Average (unweighted)	53	62	28	34	75	71	67

* Fear of failure assessed for those seeing opportunities

** Intentions assessed among nonentrepreneur population

\+ These questions were optional and therefore not included by all economies

Source: Global Entrepreneurship Monitor 2012 Global Report

Table 1 shows that among the 13 countries analyzed in the region, Brazil has the highest rates in all of the three sub-categories under *societal impressions*, which are: whether starting a business is considered a good career choice; opinion about the association of entrepreneurship with high status and awareness of positive media attention for entrepreneurship. This means that 89% of Brazilian respondents perceive entrepreneurship as a good career choice; while only 56% of Mexicans, last on the list in this requirement, share this same perception. Also for the Brazilian respondents, entrepreneurs generally receive media positive attention (86%) and are afforded high status (86%), both variables evaluated by the Mexicans respondents with only 38% and 54% respectively.

On the one hand Brazil stands out when considering their *societal impression*, but, on the other, in the *individual self -perceptions* category Brazil barely stands among the top five of the 13 countries with regard to perceived opportunities, perceived entrepreneurial capabilities and entrepreneurial intentions.

Fear of failure seems to be one of the factors limiting Brazilian entrepreneurs to take advantage of the well-assessed social environment, for indeed engage in an entrepreneurial activity. While in Brazil, 31% of respondents claim to have fear of failure, only 17% of respondents share of this same perception in countries like Panama, Barbados and Trinidad & Tobago, the latter showing the highest rate on the perception of population's entrepreneurial capacity, 76%, against 54% in Brazil.

Following the vein of a similar line of thought and towards the same efforts pursued by the BEEP, the OECD pondered over the theme and also triggered off a movement to map out the experience of different administrations in the quest for entrepreneurship development. OECD's focus, however, lies in facilitating the definition of public policies by political leaders via an internationally comparable database that reflects the reality of different countries as of indicators representing the determinant elements of entrepreneurship.

Thus OECD's EIP – Entrepreneurship Indicators Programme – came into being in 2006. In 2007, the program joined forces with Eurostat, a system for the collection and organization of European country statistics to develop

definitions and concepts that would become the base for the construction of a database on the entrepreneurship phenomenon at the world level.

The result of the OECD-Eurostat partnership is depicted in the Figure 2:

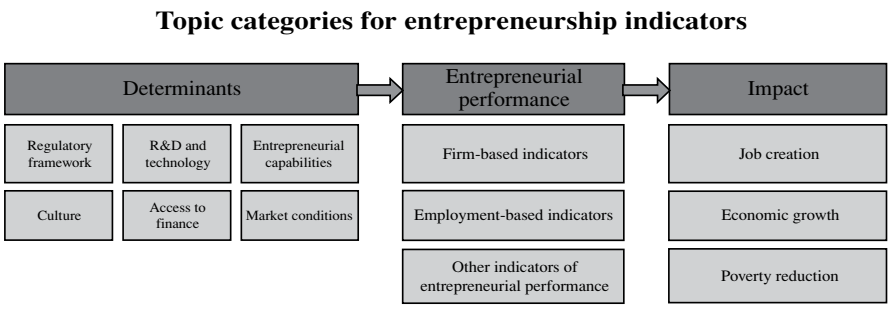

Figure 2: Top categories for entrepreneurship indicators

Source: OCDE. **Measuring Entrepreneurship**: a Collection of Indicators, 2009.

As seen in Figure 2, OECD identifies three different, however interlinked, flows, which are important for the evaluation and formulation of entrepreneurship policies: determinants, entrepreneurial performance and impact. "The first stage of the model comprises various *determinants* which policy can affect and which in turn influence *entrepreneurial performance*, or the amount and type of entrepreneurship that take place. The final stage is the *impact* of entrepreneurship on higher-level goals such as economic growth, job creation or poverty reduction" (Hoffman and Ahmad, 2007).

Albeit recognizing the importance of studying the entire proposed flow, this research effort is concentrated upon the analysis of entrepreneurship *determinants,* as defined in the first quadrant of Figure 2[1].

[1] Because of model complexities, the variables are dynamic and have been constantly improved since their inception in 2006. Therefore, although Figure 2 is the most recent graphical representation of the model presented in the available articles, OECD's website (http://www.oecd.org/industry/business-stats/indicatorsofentrepreneurialdeterminants.htm) shows the list of updated determinants as of 2011, with minor variations in the above-mentioned determinant nomenclature. For the purposes of this study, therefore, updated concepts are considered, where *technology and R&D* are recognized as *creation and diffusion of knowledge* and *culture* is specifically called *entrepreneurship culture*.

Notably, the qualitative approach pursued in this study seeks to map out the perceptions of the ecosystem actors, mainly as concerns entrepreneurship of high-growth startups, as construed according to Julie Meyer's (2012) concept, describing them as companies that start life small, but think big and, due to their great innovative potential, harbor a significant probability of early exponential growth.

Eric Ries argues that when an organization of any nature is based inside the startup thinking (focused on innovation, with as less costs as possible), it will become easier to make a business flow, by having feedbacks from the use of experimentation. The availability of entrepreneurs who takes advantage of experimentation requires actions from both governments and universities to encourage and give capacitation for these entrepreneurs to enter this world of opportunities and wealth creation (Ries, 2012).

3. METHODOLOGY

Quantitative and qualitative data collection happened between August 2012 and March 2013. Sections 3.1 and 3.2 describe in detail what was each stage's process like.

3.1. Qualitative stage

The snowball sampling method was used to gather qualitative data. This method resorts to indications and networking involving the respondents themselves, to establish contact with other individuals of interest to the investigation. That is, the sample is constructed simultaneously with the development of the research work, and this technique is used to broach access to important representatives of the theme in question, who might otherwise not be available for in-depth interviews if not for their prior relations with previously interviewed individuals.

Therefore, 30 in-depth interviews were conducted, all of them semi-structured such as to broach open dialogues over the six entrepreneurship pillars, as proposed by Daniel Isenberg (2011).

Sample diversification was sought by means of interviews with individuals playing different roles in the Brazilian entrepreneurship scenario. The authors also sought to approach representatives from different Brazilian states, notwithstanding the prevalence of the southeastern region due to its geographic proximity to the research center. The table below shows sample details.

Table 2: Description of qualitative interviews – Primary data

Classification	Number of interviewees	States
Entrepreneurs	6	MG/PR
Support Institutions	11	MG/SP/PR/SC
Investors	7	MG/SC
Researchers	2	MG
Consultants	4	MG/RJ/SP

Source: FDC Study – The Brazilian Entrepreneurial Ecosystem of Startups

Considering that the proposed quantitative approach does not specifically explore **startup** entrepreneurship, qualitative interviews were strategically designed to provide the research work with information and perceptions from this specific universe. Therefore, the interviewed entrepreneurs and investors concentrated their action focus upon high-impact companies still in their initial development stage, as well as the entrepreneurship support institutions, that comprised incubators, accelerators and hubs, besides agencies such as the Brazilian Small Business Administration – Sebrae and law firms veered towards supporting venture capitalists. Consultants are understood as the individuals who do not play a single role in the ecosystem, but command a general view of the subject and have shared their views as interested specialists in the Brazilian entrepreneurship phenomenon.

3.2. Quantitative stage

The quantitative database was constructed basing on the updated version of the entrepreneurial determinants as defined by OECD in their website section dedicated to entrepreneurship[2], where the investigation's six main

[2] http://www.oecd.org/industry/business-stats/indicatorsofentrepreneurialdeterminants.htm

pillars are available and determinant factors and sub-factors of each one of them are specified. OECD also suggests, in the same documents, the sources whence the data corresponding to each variable can be extracted. However, a major part of these is focused upon the study of European countries and, therefore, do not contain data about Brazil. Therein lays the main challenge to the construction of a Brazilian quantitative base.

Therefore, an extensive research effort was developed to find alternative – yet corresponding – variables to those whose specified sources did not provide numbers relating to the Brazilian reality.

Although not all of them are approached in this paper, it is important to mention that the database constructed considered a total of 103 variables as suggested by OECD, being 92 of them mapped – of which 55 were original and 37 were corresponding variables – which represents a success mapping rate of approximately 89%[3].

3.3. Definition of benchmark countries

Aiming at enriching this study comparative analyses were drawn between Brazil and benchmark countries for each of the six studied pillars. An additional research effort was put forth to elect these countries, in compliance with the following methodology: countries were selected that appeared as top countries in the reports from which the quantitative variables under analysis were extracted. This means backtracking to the sources of each one of the variables that were successfully mapped for Brazil and the 10 best-rated countries in each of them were mapped out. The investigation then took as a benchmark country that country that appeared among the 10 first positions in the largest number of variables. In the cases where two or more countries appeared the same number of times, the definition criterion was the number of incidences in the first 5 positions. It is important to observe, therefore, that the definition of benchmark countries considered the list of participants in the consulted studies and not the total number of countries

[3] An approximation. The alternative variables are either **similar** or **complementary** to the originals. It is not possible to guarantee 100% correspondence among the variables as originally suggested by the OECD, whose values were not found in Brazil, with those alternatively suggested.

on the planet, and countries not mapped by the reports in question may have been left aside.

4. DISCUSSION OF RESULTS

Table 3 shows the main insights taken from the set of qualitative interviews. The perceptions gathered from the 30 in-depth interviews were mapped considering the six OECD pillars and explored by each respondent's profile. The data analysis is presented right after, condensing the qualitative insights with the quantitative findings so it is possible to understand in what cases the perceptions validate or go against the secondary quantitative data analyzed. The quantitative data provided are for the last year that was available for each indicator. The quotations from the qualitative interviews are not identified in respect to the confidentiality policy applied at the request of the interviewees.

Table 3: Main insights of qualitative interviews - primary data

QUALITATIVE INTERVIEWS - DETAILING			
RESPONDENTS PROFILE	REGULATORY FRAMEWORK	MARKET CONDITIONS	ACCESS TO FINANCE
ENTREPRENEURS	Positive aspects: . Availability of government financial incentives for technological research development; . As long as the entrepreneur have a good project to apply he will probably get public subvention; Negative aspects: . No periodicity/predictability of government incentives = entrepreneurs usually are not prepared to apply in short notice under government's conditions; . To much bureaucracy on project approval and financial incentive release = entrepreneur may lose market timing for sales (mainly in IT companies); . Specific industries have huge problems to get their products approved by the National Agency for Sanitary Vigilance (ANVISA) - it can take up to six years or more to have a product approved for commercialization.	. New Brazilian companies usually already starts aiming international markets;	. Brazilian startups entrepreneurs tend to invest their own capital as seed money to make the company run; as well as their human resources, being full time dedicated to the business since its conception; . Entrepreneurs perceptions is that it is very tough to attract Venture Capital investments; . When they do attract investments the process is very slow and bureaucratic - more focused on business analysis and less in entrepreneur profile; . The greatest part of investments on research come from the government;
INVESTORS	. Perception is that the investments on startups in their initial developing stage is government responsability;	_	. Investors feel that Brazil is about 20 years behind USA considering the Venture Capital/Private Equity/Angels environment and development; . Investors tend to evaluate if entrepreneurs have a partner or a owner mentality. If the entrepreneur do not accept very well to work with partners in his/her business he/she won't deal well with investment funds; . Other aspect investors evaluate is entrepreneurs' ambition - must to be high; . Skills to adapt the business to the market needs are mandatory for success; . Investment funds in Brazil invest really high amount of money, but in lower risk operations;
SUPPORT INSTITUTIONS	. There is a lot of research financial support from the government but with no criteria linked to the research implementation on the market/ startups misses resources for marketing and a good commercialization strategy;	. Main startups success cases are of those ones that had the ability to adapt their business to the market changes or needs; . Incubator startup selection evaluate the business model focusing on market size and product demand; . The market understanding is usually weak on incubated startups. Sometimes they have a well developed product but do not understand their market for effective commercialization; . Incubators tend to approve companies with high-growth potential that already starts focusing in international markets; . Incubators usually give market strategy advice to their startups;	. Startups can even get a first investment round but can hardly get a second round ("about 3 out of 30 companies evaluated get a second investment"); . Incubated companies miss investments for scaling their products; . High-technology companies developing disruptive innovation does not attract many investments in their beginning as it demands high amount of capital associated with high risk operations;

QUALITATIVE INTERVIEWS - DETAILING CONT. 1			
RESPONDENTS PROFILE	REGULATORY FRAMEWORK	MARKET CONDITIONS	ACCESS TO FINANCE
RESEARCHERS	. Belief on the triple helix model - it is necessary to work the complex relationship between government, private companies and universities;	_	_
CONSULTANTS	. There are regulation laws according to which public employees as university teachers/researchers are not allowed to constitute a company while working at the university - can't be both researcher and entrepreneur; . From the point of view of the investor it is very complicated to invest in a technology being developed inside the university because there are no guarantees for the freely commercialization of the technology in the market; . Brazilian tax system gives no incentive for those who make investment in innovation; . There is no significant differentiation of taxation by size or turnover of companies (could have a turnover of 2 or 50 millions and the same costs and statements are applied); . Legally there is no difference between companies that already have revenues of those who are still in the process of raising capital; . The investor in Brazil has no regulatory protection; . Companies seek Brazil despite the regulatory framework; . Regulatory framework is focused on developed companies and not in companies in the development stage;	. There is a favorable market in Brazil as a consequence of the mobility of the middle class mainly in the last years;	. The universe of Venture Capital, Private Equity and Angels institutions is concentrated in southeastern Brazil. In other states that community is still very weak; . It feels that there is a delay of 40/50 years with respect to the U.S. and its investment environment of VC / PE / Angel;

QUALITATIVE INTERVIEWS - DETAILING CONT. 2				
RESPONDENTS PROFILE	CREATION AND DIFFUSION OF KNOWLEDGE	ENTREPRENEURIAL CAPABILITY	ENTREPRENEURSHIP CULTURE	SUPPORT INSTITUTIONS
ENTREPRENEURS	. The major part of the research development in Brazil is made inside the universities - it is necessary to help academics to develop applied technology, focused on market needs; . Researchers have difficulties in scalability of their technologies - they get a laboratory scale but can't insert it in a production line;	_	. It might be a limitation of the Brazilian culture not to be open to talk with neighbor countries as it does with more facility other countries in Latin America - might be a language issue or a localism aspect of the Brazilian culture;	. Incubators help to build a network between companies - favorable environment for developing business partnerships;
INVESTORS	. It feels like in Brazil the researcher has no obligation to present practical results out of its work, therefore there is no concern on the application of the knowledge or technology to solve real problems or attend real market needs;	. There is a lack of entrepreneurship education, therefore the country misses entrepreneurs with good entrepreneurship mentality; . Brazilian entrepreneurs are lacking the main characteristics investors evaluate (see Access to Finance);	Main cultural problems: . Lack of tolerance to failure; . Risk aversion;	_
SUPPORT INSTITUTIONS	_	. Entrepreneurs enter the incubator with a very short market view, they are very technical, with no long-term plans for their business;	. Brazilian investors also have risk aversion and usually does not support high risk business as, for example, highly innovative startups;	. Advice of consultants or support institutions on building a strong business model is determinant for startup success;
RESEARCHERS	. The most innovative companies that emerge are rooted in universities' research; . IT vs. Eco technologies: IT companies come more from the perception of an opportunity while eco technology comes more from research. . Entrepreneurs and researchers speak different languages - entrepreneurs: technology commercialization/ researchers: it is all about the technology development; . Lack of expertise on patent transfer and negotiation; Main issue: . The researcher does not want to divide among its research activities and duties from a company. There is no interest for looking the research under a business perception;	_	. Brazilian culture seems to be characterized by the need for socialization in a very informal level and lack socialization to talk about business, or about skills; . The catholic cultural values seems to understand wealth as a sin, what might be an obstacle for entrepreneurship development;	_
CONSULTANTS	. The process of transferring technology that is produced at the university does not work well today in Brazil; . Patent is absolutely linked to the university which discourages potential private investments in the technology development process;	_	. The culture of Brazilian investors determines more investments in low risk opportunities (e.g. Franchises). It is important to encourage investors to look for alternative, higher-risk businesses, which bring higher results not only for the entrepreneur, but for the country economy in general;	_

Source: FDC Study – The Brazilian Entrepreneurial Ecosystem of Startups

4.1. Regulatory Framework

The qualitative perceptions about this pillar stress the quantitative findings and point towards the Brazilian regulatory framework as a problem for the country's entrepreneurial development.

Concerning quantitative analysis, since there are a considerable number of variables involved in assessing the regulatory framework, the authors

decided to split the set of sub-factors into three categories that facilitate understanding, to wit:

Variables in progress: these are the variables that have evolved in the past few years in the sense of facilitating new business in Brazil.

Stagnant variables: these are variables that have not evolved or have regressed in the past few years, showing variations smaller than one unit in the indices analyzed.

Regressing variables: these are the variables that have regressed in the past few years in the sense of facilitating the development of new business in Brazil.

Table 4 shows the classification of all variables analyzed according to the categories above, their corresponding factors within the regulatory framework pillar and, also, the comparison between Brazilian and Singaporean models - Singapore being the country chosen as the regulatory framework benchmark according to the methodology described in the previous section.

Table 4: Mapped variables for the Regulatory Framework pillar

REGULATORY FRAMEWORK											
Variables	2007	2008	2009	2010	2011	2012	2013	Singapore	Year*	Corresponding Factor
Variables in progress										
Costs Required for Starting a Business	9,9	10,4	8,2	6,9	7,3	5,4	4,8	0,6	2013	Administrative Burdens
Number of Days for Starting a Business	149	149	149	119	119	119	119	3	2013	Administrative Burdens
Cost to build a Warehouse	62,2	99,4	46,7	50,6	46,6	40,2	36	16,7	2013	Administrative Burdens
Number of Procedures for Starting a Business	15	16	16	14	13	13	13	3	2013	Administrative Burdens
Enforcing Contracts - Number of Procedures	45	45	45	45	45	45	44	21	2013	Court & Legal Framework
Private expenditure on health as a percentage of total expenditure on health	58,2	57,2	56,4	53	ND	ND	ND	63,7	2010	Social and Health Security
General government expenditure on health as a percentage of total expenditure on health	41,8	42,8	43,6	47	ND	ND	ND	36,3	2010	Social and Health Security
Taxes on financial and capital transactions (% GDP)	1,7	0,7	0,6	0,7	ND	ND	ND	ND	ND	Business and Capital Taxes
Cost of capital	1,7	2,4	1,9	2,2	2,6	2,8	ND	7,2	2012	Business and Capital Taxes
Stagnant variables										
Burden of Government Regulation	1,9	1,9	1,8	1,9	2	2	ND	5,6	2012	Administrative Burdens
Minimum Capital Required for Starting a Business	0	0	0	0	0	0	0	0	2013	Administrative Burdens
Procedures to Build a Warehouse	17	17	17	17	17	17	17	11	2013	Administrative Burdens
Costs for Register Property	2,8	2,8	2,7	2,6	2,7	2,6	2,6	2,9	2013	Administrative Burdens
Time it Takes to Prepare, File and Pay the Corporate Income Tax, VAT and Social Contributions	2,6	2,6	2,6	2,6	2,6	2,6	2,6	82	2013	Administrative Burdens
Actual Cost to Close a Business	12	12	12	12	12	12	12	1	2013	Bankruptcy Regulations
Actual Time to Close a Business	4	4	4	4	4	4	4	0,8	2013	Bankruptcy Regulations
Immigration Laws	6,1	5,5	5,4	5,0	5,6	5,9	ND	5,6	2012	Product and Labour Market Regulation
Difficulty of Firing*	0	0	0	0	ND	ND	ND	0	2010	Product and Labour Market Regulation
Rigidity of Hours Index*	60	60	60	60	ND	ND	ND	0	2010	Product and Labour Market Regulation
Pay and productivity	3,8	4,2	4	3,7	3,7	3,8	ND	5,4	2012	Product and Labour Market Regulation
Enforcing Contracts - Cost in % of claim	16,5	16,5	16,5	16,5	16,5	16,5	16,5	25,8	2013	Court & Legal Framework
Enforcing Contracts - Time	731	731	731	731	731	731	731	150	2013	Court & Legal Framework
Total expenditure on health as a percentage of GDP	8,5	8,3	8,8	9	ND	ND	ND	4,0	2010	Social and Health Security
Taxes on income, profits and capital gains (% GDP)	7,3	7,8	7,3	6,9	ND	ND	ND	ND	ND	Income taxes; Wealth/Bequest Taxes
Payroll taxes - payed by the employer (% GDP)	3,8	3,8	3,9	3,9	4,0	ND	ND	ND	ND	Income taxes; Wealth/Bequest Taxes
Payroll taxes - payed by the employee (% GDP)	1,9	1,9	1,9	1,9	2,1	ND	ND	ND	ND	Income taxes; Wealth/Bequest Taxes
Taxation of Corporate Income (% of GDP)	3,7	4,0	3,8	3,4	ND	ND	ND	ND	ND	Business and Capital Taxes
Intellectual Property Rights	3,3	3,3	3,0	3,1	3,2	3,5	ND	6,1	2012	Patent System Standards
Property Rights	4,5	4,6	4,4	4,3	4,4	4,7	ND	6,4	2012	Patent System Standards
Regressing variables										
Number of procedures for register property	13	13	13	13	13	13	14	5	2013	Administrative Burdens
Time for register property	33	33	33	33	33	33	34	21	2013	Administrative Burdens
Days to build a warehouse	375	469	469	469	469	469	469	26	2013	Administrative Burdens
Bankruptcy Recovery Rate	12,1	14,6	17,1	17,1	17,1	17,1	15,9	91,3	2013	Bankruptcy Regulations
Difficulty of hiring*	67	78	78	78	ND	ND	ND	0	2010	Product and Labour Market Regulation

Source: FDC Study – The Brazilian Startup Entrepreneurial Ecosystem

ND: Unavailable data.

*Year: indicates to what year the data specified for Singapore corresponds. *Difficulty of Firing; Rigidity of hours index and Difficulty of hiring: all data referring to *Doing Business* were pro-

vided directly by the report organizing committee. The documents provided to Fundação Dom Cabral listing the requested data included the observation in these specific variables that the indicators are being revised. The figures were then extracted from the *Doing Business* reports available online. A full description of each variable mentioned above is presented in **Appendix I** at the end of the paper.

The entrepreneurial environment requires dynamism to develop; thus the importance of a regulatory framework that will break with the bureaucratic hamstringing of the entrepreneurship development process.

Mainly, when startup entrepreneurship is discussed, it is necessary to consider that the speed of setting up a business and the facilities that encourage its rapid growth are key factors for success. Young entrepreneurs are usually at the helm of these companies, bringing innovative ideas that break away from traditional product standards or business models. They think ahead of their time and their reality seems to run on a faster track.

In this context, two variables currently regressing in Brazil call attention: personnel hiring difficulties and the bankrupt company recovery rate.

On a scale from 0 to 100, the latter being the highest the score and the greater the influence of laws and regulations representing hurdles against personnel hiring, Brazil was rated at 78 points. Hiring personnel appears, therefore, to be a major limiting factor of the country's dynamism. Entrepreneurs are grid-locked in the face of administrative charges levied against personnel hiring that hamstring their budgets or when labor laws, focused upon workers' needs, do not contemplate the employer's requirements.

> *"If a company wishes to create job opportunities there's no difference, no different treatment to create these new work stations[...]"*

> *"[The Brazilian] labor market is completely different from that of seventy years ago, but it still has the same law of seventy years ago; extremely protective and hardly flexible..."*

The numbers also indicate that there is no easing in Brazil concerning the regulations applicable to the recovery of bankrupt companies. The rate of recovery assessed above is recorded as cents to the dollar recovered by creditors by means of reorganization, liquidation or debt foreclosing procedures.

In Brazil, therefore, once a company slips into red territory and contracts debt for recovery, only 15.9% of total assets committed are expected to be recovered.

Consequently, Brazilian companies have followed the opposite rationale of a favorable entrepreneurship environment; where entrepreneurs should find ease to venture serially and bankruptcy cannot loom as a limiting factor to the continuity of their efforts towards new businesses. It is precisely the possibility of restarting that strengthens the ecosystem with continual innovative ideas that increase the possibility of successful companies existing in the marketplace.

Besides, for those companies that require proper space to develop technologies through laboratory studies and more complex prototyping studies to manufacture a marketable product, the slowness of the facility building process and the bureaucracy involved in property registration, which are two other regressing variables in Brazil, can be development-limiting factors.

On the other hand, it is of the essence to note that the costs of building a warehouse decreased substantially in the past few years and that there has been remarkable progress in the process of starting a business, entailing a significant reduction both of the number of days required to start a business and also of the costs and number of procedures involved in the process.

The Brazilian federal administration created the Individual Micro-entrepreneur modality via Complementary Law no. 128, dated 12/19/2008. This is an example of official action that facilitates the establishment of companies, reducing the time required to obtain a valid corporate taxpayer number (CNPJ) down to 15 minutes, via the Internet. This measure contains many limitations since it is only applicable to entrepreneurs who are enjoying maximum sales of R$60,000 per year and who do not hold equity interest in another company as a partner or owner. However, it does benefit self-employed professionals who are trying to start their own business and offers them the possibility of issuing fiscal invoices, together with the facility of opening a corporate checking account and entering into loan agreements for the company when necessary[4].

[4] http://www.portaldoempreendedor.gov.br/mei-microempreendedor-individual - 4/16/2013.

Another federal government measure whose purpose is to stimulate the economy and facilitate the development of companies concerns the reduction of payroll taxes, a stagnant variable in Brazil for years.

Tax exemptions upon payroll were implemented in 2011 and extended application to more industries in April 2013, currently favoring 42 sectors of the Brazilian economy by the reduction of taxes levied upon workers' wages. The measure contemplates the substitution of a 20% contribution on the payroll of companies, made to the National Institute of Social Security (INSS), for a fee varying between 1% and 2% of companies' sales. It is an interesting reaction by the government to the negative evaluation of personnel hiring in Brazil and, indeed, may stimulate the creation of jobs in the country and improve Brazilian corporate competitiveness[5].

Although advances have been made in merit recognition because of the important influence it brings to Brazilian entrepreneurial development, the Brazilian regulatory framework is far from being a role model for entrepreneurship incentive. Among the 34 elements mapped above, 25 of them, or approximately 74% are stagnant or regressing considering the period between 2007 and 2013. This scoring is evidence of a negligent facet of the Brazilian reality that has scantily changed in the past few years in the sense of stimulating the regulatory model such as to facilitate corporate development in Brazil.

> *"[...] as concerns the regulatory framework, having worked in this market for such a long time, my understanding is that Brazil is attractive despite the regulatory framework. There is nothing in the regulatory framework that will make Brazil an interesting country. The regulatory part does not reduce the Brazil Risk".*
>
> *"[...] Brazil as a rule finds it difficult to regulate companies. The regulatory system is a hurdle, a weakness in the area of specific entrepreneurship regulation".*
>
> *"[...] before earning a profit, long before compensating investors and others, we are compensating the government, paying*

[5] http://www.fazenda.gov.br/portugues/documentos/2012/cartilhadesoneracao.pdf - 4/16/2013.

> *taxes for a long time before we can yield results. We were having negative net margins in the beginning, that is, costs were greater than revenues. Negative margins and even so you must pay taxes all the same, that means one incentive less, one advantage less to encourage you to be enterprising".*

Still, even considering the results found with variables that denoted some progress in the past few years, a marked contrast can be found between Brazilian and Singaporean numbers, which once more demonstrates the pillar's shortcomings.

Table 5: Singaporean government measures towards entrepreneurship

Singaporean government measures towards entrepreneurship	Corresponding years
Established an online business registration	2007/2008
Allowed the company registration and tax declaration to be made through a single online form	2008/2009
Facilitated the obtaining of building permits by improving the internal process of electronic data processing	2009
Further facilitated the process of obtaining building permits with a new Regulation of Health and Safety that allows low-risk industries to submit documents online	2010
Facilitated the property registration through improvements in the country's digital system	2010

Source: *Doing Business* reports for corresponding years

Therefore, the reforms implemented by the Singaporean government since 2007 stand as an interesting tool to guide future measures in the sense of developing public policies in Brazil. According to previous years' reports by *Doing Business,* the actions described on Table 5 are notable.

4.2. Market Conditions

Qualitative interviews indicated that individuals who are involved with entrepreneurship in Brazil have an optimistic view of the Brazilian market as concerns the possibility of attracting new business and technology. For

these people, the increased population purchasing power in the past few years, together with a growing access to digital tools and the Internet characterizes an exceedingly fertile environment for the development of startups. Technologies already saturated in markets such as the United States, i.e, highly scalable ideas through e-commerce and which are already commonplace in other countries, find a practically untapped market in Brazil, daily increasing its thirst for digital consumption.

> *"[...] [the e-commerce market] is a brisk market all over the world and there's a lot of space for this type of market in Brazil too, that is, ideas that appear consistently in these markets, I think they stand good chances of [creating] differentiated start-ups".*

> *"Companies that bring innovations from abroad to this country envision only one thing: our market. We are an emerging economy, with markets sometimes totally untapped, look at the electric car issue, they're coming to explore our market".*

Indeed, the numbers unveiled an impressive e-commerce growth in Brazil. Sales from digital commerce increased from R$ 8.2 billion in 2008 to R$ 22.5 billion in 2012 in Brazil (E-bit Company, 2012). However, the consumers' sophistication level did not increase on a par with their purchasing power increase. The country's evaluations in this respect showed minimal variation, and have remained below average (between 3.8 and 3.6) for the past seven years, 1 being the score that indicates who base their buying on low price only while 7 denotes consumers who base their buying upon sophisticated product performance analysis (World Economic Forum [WEF], 2012).

This is a peculiar characteristic of the Brazilian entrepreneurship ecosystem, which does not necessarily minimize its development potential but should certainly be considered by young entrepreneurs at the time of conceiving their business, since the actual purchasing intention is obviously a determinant factor for product and service success or failure.

Another important point to be highlighted is the degree of governmental adaptability vis-à-vis changes in the economy, that scored 4.59 in 2012, representing an increase of nearly 2 points compared to the 2007 score of 2.67.

The scale considered here contains 10 points, where 0 means low adaptability and 10 represents high governmental policy adaptability (Institute for Management Development [IMD], 2012).

Although it is possible to notice some progress in this respect, a comparison with the Singaporean index – 8.25 in 2012 – Singapore being a benchmark country elected for this pillar as well, indicates that Brazil is still much behind what would be a benchmark adaptability level and, therefore, needs to identify and overcome possibly existing fetters in its market policies such as to follow up the speed of an entrepreneurial economy.

One suggestion is, for example, the facilitation for Brazilian companies to project themselves internationally. Many startups are born international and resort to information technologies to eliminate barriers among countries. It behooves the economies to understand and facilitate this movement as a manner to retain Brazilian best companies in the country, minimizing the risk of losing them to international markets.

> *"[My startup] had to be born international already, because the games industry in Brazil is mostly pirated software, 80% to 90% of everything is pirated. Then major international partners simply didn't communicate with Brazil, didn't invest in games in Brazil".*

> *"[...] the businesses we have approved here at the incubator are fast-growing companies, companies that have great potential. In fact, some of their customers are here in Paraná, but most of them are outside the country".*

The great issue is that such international projection in Brazil is being hindered by the export rates that grew exponentially in the past few years. According to *Doing Business* data, export costs nearly quadrupled for companies, from US$ 630 per container in 2007 to US$ 2215 per container in 2013 (World Bank, 2013a).

4.3. Access to Finance

Respondents note a growing supply of capital in Brazil. The economic prosperity this country has experienced for the past few years not only in-

creases the purchasing power of class C but also allows a greater accumulation of wealth by the individuals who were already at the top of the pyramid during crisis times. Such capital accumulation together with a dropping interest rate encourages investors to cast their eyes upon new investment opportunities, since fixed income investments are no longer so financially attractive.

> *"[...] Interest income is dropping and fixed income investments lose attraction. It wasn't too attractive before, now it's not at all, because investors will find an actual interest rate of 3% per year at best [...]"*

Besides that, the numbers show that, indeed, credit availability in the country has increased in the past few years. The percentage of credit extended to the private sector, for example, was 61.4% in 2011, from 47.8% in 2007 (World Bank, 2013b). Probably a reflection of improvement of the country's credit rating, from 61.2 in 2007 to 70.9 in 2011, in a scale from 0 to 100, where 100 represents the greatest probability of obtaining credit (IMD, 2012).

The *Investor protection*[6] variable, however, indicates that the economy growth movement is not on a par with adaptations for the improvement of investor conditions. In Brazil, it has been stagnant for the past seven years at the score of 5.3, for an almost 4-point difference compared to the Hong Kong score – 9 –, a country defined as a benchmark for this pillar, showing the distance between Brazil and a protection benchmark country (World Bank, 2013a).

Likewise, the variable *Venture Capital Availability* is also stagnated in Brazil, with scores below 3 from 2007 to 2012. On a scale 1 to 7, 1 means it is impossible to get a bank loan in the country with only a good business plan and no collateral and 7 means it is easy to get a loan in these conditions (WEF, 2012).

Thus, on the one hand entrepreneurs complain of not having access to the capitals available in the country and stress the reality in that the do-

[6] This variable is an average of the evaluation of three indices: transparency in transactions, responsibility for self-dealing and the capacity stockholders have to sue directors and executive officers for mismanagement.

mestic capital-tapping capacity does not directly influence the ease for entrepreneurs to obtain investments or loans for their businesses during the embryonic stage of their startups.

> *"[...] in Brazil today it takes us one year to obtain venture capital funds, it's very tough".*

> *"[...] fella has his business, proved it works and everybody's dying to give him money; now fella who doesn't have any, who needs resources to develop, no way, he's got to prove it works on his own and after he's proven, when he doesn't need money anymore, then he'll find money".*

> *"[...] even with [public] subventions, in this specific case I tried, I had to apply through another company, because a company that doesn't sell isn't approved. Because they take up part of the technological risk but they don't assume any commercial risk, then, if the company doesn't sell, it doesn't have a commercial life with technology, they don't even invest".*

On the other hand, investors argue that a legal framework is lacking, such as to prompt them to invest in higher risk ventures. Investor insecurity looms as the great hurdle in the process. Most times investors will opt for transactions with larger sized companies, requiring heavier investments, but offering an attractive return at a smaller risk associated to the operation.

> *"[...] one thing is to take a piece of your personal assets and plough it into some venture. If it succeeds, fine. If it doesn't, I kiss my resources goodbye. One thing is to take a piece of my personal assets, plough it into some productive activity and if this activity goes south I'll be liable not only for the amount I've invested but will risk everything I own. This discourages investing in production activities."*

> *"I know of several investment funds that don't invest less than 10 million; I know many that don't invest less than 50 million".*

> *"[...] the groups that have investment potential in Brazil are not prepared for startup companies. They look for solid compa-*

> *nies. We participated in an application call for credit in 2010 and one of the awarded companies had revenues to the tune of 5 billion reals that year. My question is: does a company that sell 5 billion reals really need 3 million to invest in the development of a new product? And this money really makes a difference to those who need it the most, the startup company, the company that is only just starting, the small business".*

The growth of domestic mergers and acquisitions in Brazil – from 351 in 2007 to 410 in 2011, for example – is an indication that, indeed, large-size businesses have increased in number in this country and emerging enterprise investments end up not being a first option (KPMG, 2012). Of the 11,677 investment funds on record with the CVM – the Brazilian Securities and Exchange Commission – in 2012, only 34 are on record as **Emerging Enterprise** Mutual Investment Funds (FMIEE), which signifies a share of only .3% of this universe (CVM, 2013).

4.4. Creation and Diffusion of Knowledge

Respondents understand the two axes composing this pillar in different manners. On the one hand, there is a belief that relevant knowledge has been created in the academy, that is, the *creation of knowledge* is not seen as a major problem in Brazil. On the other hand, the *diffusion* of this knowledge has not been satisfactory, that is, the results of efforts veered towards research do not necessarily become business and often times remain mothballed in academic shelves broaching no dialogue with the market. This lack of dialogue appears as a consequence of the incapability of two parties – researchers and entrepreneurs – to understand each other's language. The researcher's idealism cannot connect to the entrepreneur's pragmatism, and this lack of communication between academia and enterprise ends up becoming a major hurdle to transform new ideas into successful companies.

> *"Academic researchers have a soft spot for invention; inventors are always quite myopic [...]. I strutted high toting my patent and thought I would save the world with my environmental area invention. I talked to industry people and disaster hit [...]. We speak different languages. In my mind [I thought]: sure, they'll*

be interested in an invention that'll save the world! We then began to talk and they began asking questions I couldn't answer, and very obvious questions for those in the private area, who are thinking about the use, marketing the technology. This evidently vexed me, why couldn't those people understand the beauty [of the invention]? Sure, from the chemical view point it was too cool!"

"[...] the hardest, in fact, is having expectations that a researcher, a person who prepared himself to be a researcher at the university, should have an entrepreneurial behavior. Some companies in the fund found some difficulties because of this profile gap."

Quantitative evaluation indicates that the collaboration between university and industry is, indeed, below Finnish levels – Finland being the pillar's benchmark country – confirming the Brazilian shortcomings as qualitatively seen in this respect. However, a small growth can be seen in the past few years' indices. On a scale where 1 represents a minimal to non-existent level of collaboration between academia and enterprise and 7 represents an intense and continual level of collaboration, Brazil scored 3.4 in 2007 and 4.1 in 2012, not too far from the Finnish score of 5.6 for the same year (WEF, 2012).

On the other hand, the effective creation of knowledge – assessed by the number of patents registered in the country in the past few years – are behind Finnish indices, depicting a less optimistic reality than that seen by respondents.

In the reference year of 2010 the number of patents granted to inventors residing in Brazil, a country of approximately 196 million inhabitants[7], is almost three times smaller than Finland's, a country of only 5.39 million inhabitants[8] (OECD, 2013).

[7] Data referring to 2011 extracted from the WIPO – World Intellectual Property Organization site – http://www.wipo.int/ipstats/en/statistics/country_profile/countries/br.html

[8] Data referring to 2011 extracted from the WIPO – World Intellectual Property Organization site – http://www.wipo.int/ipstats/en/statistics/country_profile/countries/fi.html

Within the scope of technological availability and acceptance – another factor that affect the Creation and Diffusion of Knowledge pillar according to the OECD framework – a fast-growing ambiance is already noticeable in Brazil. The increase in digital business, that almost tripled in the past five years driven by the 13 percentage point increase in the percentage of individuals who purchase products and services via the Internet between 2007 and 2011 is evidence that at least the basic technological structure – computers and the internet – has become more available to the Brazilian population in the past years and, more importantly, has been absorbed by individuals (CETIC, 2011). That is, the country wins on both sides: on the one hand, when a greater number of potential entrepreneurs has the possibility to access what is developed elsewhere – being capable of transforming information in subsidies for the creation of new businesses – on the other, chances to absorb digital business[9] increase by the day, due to the growing mass of consumers.

Finally, the low level of cooperation among Brazilian companies in 2012 – 4.7 –, compared to Finland – 7.5[10] – demonstrates that large Brazilian companies also have space for supporting the process of entrepreneurship development in Brazil, inserting embryonic companies in their production chains as suppliers of specific technologies, for example, playing an important incentive role in the creation of a greater number of startups in the country (IMD, 2012).

4.5. Entrepreneurial Capability

The entrepreneurial capability development process, according to the OECD, is determined by two main elements: the presence of education veered towards entrepreneurship and migratory flows bringing qualified foreigners professionals into the country.

Both interviews and quantitative data depict the Brazilian reality in a similar fashion. Education in Brazil, almost entirely, does not approach entrepreneurship themes neither in the traditional formation courses nor in higher education courses such as business management, engineering and

[9] Segment to which most startups interviewed in Southeastern Brazil have veered.

[10] The index is based on a scale from 0 to 10, where 0 means technological cooperation among companies is lacking and 10 means that cooperation is well-developed.

economics, for example, in which applied entrepreneurship curricula would be applicable. However, these courses are limited to the classic education to develop professionals who are mostly trained to be fine employees of great organizations – a synonym with professional success – but not to establish their own business.

> *"[...] as far as I know, universities have practically nothing, at most they have a junior company, which is something very different. I think all courses, engineering, IT, chemistry, medical courses – because there are several companies in the medical area as well – all courses should offer some type of training, of guidance, for [the students] to become entrepreneurs. The student finishes school, how is he going to venture?"*

Even Brazilian business schools, which represent an alternative option for those who seek more specific education with the development of enterprising skills, have quality indices below those found in the United Kingdom, a benchmark country for this pillar. The scale evaluates the quality of business schools in different countries, where 1 means poor or limited quality and 7 denotes the presence of schools classified as the best in the world. Brazilian score in 2012 was 4.4 against 6.1 of United Kingdom in the same year (WEF, 2012).

Another worrying factor is the access to basic higher education, with or without entrepreneurship elements, that in 2010 was benefit of only 12% of the Brazilian population, a number in stark contrast with the 46% of the United Kingdom population trained in higher education in the same year, which unveils a precarious reality as concerns the availability of skilled human resources for the large scale development of enterprises in Brazil (IMD, 2010).

Given this scenario, it would be interesting for the country economy to make Brazil attractive for skilled foreign professionals who come to this country to share ideas and abilities with local potential entrepreneurs.

However, considering the year 2010 as the baseline, a comparison between the number of foreign students in Brazil – 14,738 – and in the United Kingdom – 389.958 – is a warning of the lack of attractiveness to welcome foreigners and possibly retain them in the country (UNESCO, 2013).

4.6. Entrepreneurship Culture

Culture is the backdrop of all elements of an entrepreneurial ecosystem and directly affects its operations and growth. In this pillar, behavioral preferences and characteristics of individuals in favor or against entrepreneurship are assessed, besides contemplating entrepreneurial education in a subtly different manner than how it was approached in the previous pillar. Here, investigating the development of an entrepreneurial mindset in individuals from their basic schooling is more important than understanding whether is any knowledge about entrepreneurship being taught in intermediary school and higher education.

Starting from an analysis of preferences and characteristics, we note in the respondents' statements an interesting counterpoise between the fear of failure and entrepreneurial initiative. The qualitative issue of greatest eminence was precisely the resistance that Brazilians offer against failure and, possibly as a direct consequence of this element, their risk aversion. Failure, in Brazil, often times seems to come hand in hand with hard to overcome social stigmata that loom as impediments or hindrances to the entrepreneur restart.

> *"Brazil has a complicated problem, that is, the lack of a failure culture. And you don't have any venture capital, no innovation, nothing of the sort here, if there's no tolerance for failures".*

> *"[...] today there's more space to create and innovate, but I also think that the fear of failing is still great. If you've ventured and failed, I think society in general […] the person is recognized as a flop, a person who can't manage nor create a company".*

Risk aversion, in turn, affects the other side of the coin. Since collateral for investors still has not reached satisfactory levels, as shown in the *Access to finance* pillar analysis, the risk aversion cultural aspect influences investors even further into resisting greater aggregate risk, represented by the startup companies.

Nevertheless, Brazilians are still seen as people of great initiative. However, such initiative is motivated by the need to find an income generation

manner in situations where other alternatives are not available. The fear of failure, in this case, seems to strengthen the profile of the "necessity driven entrepreneur" as a counterpoise to what is expected from entrepreneurs and startup investors, who opt for assuming great risks in exchange for the possibility of achieving significant financial gains. These are the so-called "opportunity driven entrepreneurs".

> *"I think it's changed a little, the entrepreneur has been a little more acknowledged, but I think he is seen as a jobless person, you don't know what to do so you open a little company around the corner […] out of need instead of out of opportunity [...]"*

Quantitative data, differently from the qualitative approach adopted during the interviews, seem to turn to a different face of entrepreneurship. While respondents voiced their views concerning the entrepreneur/startup investor and the characteristics required to be at the helm of a high-growth, high-risk business, some quantitative variables seem to approach entrepreneurship merely through the eyes of the individual who would rather be self-employed than an employee. The first profile requires a different range of skills that the Brazilians, as expounded in previous paragraphs, must still improve.

The second profile is more intimately related to the wish of opening a business, no matter if it is a retail activity such as a restaurant, a bakery, a convenience store, etc. The propensity of Brazilians to pursue this type of activity is high. The 2012 data indicate that the Brazilian individual harbors many more wishes to both open his/her own business and to be a self-employed professional than Norwegians, Norway being the country selected as a benchmark for this pillar (Xavier, Kelley, Kew, Herrington & Vorderwülbecke, 2012).

On the other hand, stressing the qualitative view, Norwegians are positioned 11 percentage points ahead of Brazil considering opportunity-driven entrepreneurship. This index represents the percentage of individuals involved in entrepreneurial activities in their initial stage who claim to be motivated by the opportunity as opposed to not finding any other gainful employment (Xavier et. al, 2012).

5. CONCLUSION

The Brazilian regulatory framework, albeit showing subtle signs of improvement, does not seem to follow the entrepreneurial movement in Brazil at the same speed as its milieu. Brazilian decision-making regulatory bodies seem not to have yet perceived the role of extreme importance they play in the country's economic development by means of encouraging the creation of new companies, and the need to eliminate legal and regulatory constraints to stimulate the birth and growth of companies in the country.

The market for Brazilian companies, on the other hand, presents itself as a major force in Brazil, with a huge amount of potential consumers. The question that remains, however, is whether the Brazilians are willing to overpay for an innovative product. For emerging businesses it is necessary to study in depth their target audience to understand its peculiarities and develop products and services that can be, in fact, absorbed by them.

With regards to the access to financing, it is clear that the progress of the Brazilian economy has created potential investors, that is, people with disposable capital for myriad investments who are at the crossroads of making their investment decisions. Therefore, Brazil has a very important resource with which to move its entrepreneurship ecosystem forward – the capital – and the country needs to apply efforts towards making the *New Enterprise* a more attractive option to these individuals. Measures for investor protection, for example, can smooth the Brazilian's risk aversion trait, serving as an incentive to transfer investments into larger companies to investments into startup enterprises.

Concomitantly, the creation of knowledge and capacity-building professionals for the market – entrepreneurs or otherwise – are ecosystem elements also behind their potential, and require attention both from public bodies and other ecosystem players.

Indeed, public investment in education and measures to encourage the entrepreneurship mindset are of the essence to create a greater number of relevant research that can become businesses and, just as importantly, to place skilled professionals in the marketplace such as to meet the demand for labor during their growth process.

On the other hand, the responsibility for the great functioning of the ecosystem is incumbent upon all the players in it; entrepreneurs and researchers should also take up important roles in this evolution. Since there is evidence that much knowledge has been created and is mothballed on Brazilian academia shelves, for example, it behooves researchers and entrepreneurs to bring it out in the open and to help each other identify applications for this knowledge that are interesting to both parties.

Besides that, Brazilian entrepreneurs possess basic abilities for the entrepreneurial development in the country, such as initiative and the desire to break away from subordinated employment. It is necessary to develop these abilities in the sense of more intensely encouraging high-growth entrepreneurship that yields large-scale economic and financial returns to the country.

This change may occur by means of capacity building and entrepreneurship culture, which are complementary pillars. Entrepreneurial capacity building may influence a country's culture change towards entrepreneurship, which would probably return as encouragement to advances in entrepreneurial capacity building investments.

It is well to consider that greater visibility for the country begets a greater market, attracts foreign talent from abroad and increases the chances of retaining them in the country, awakens investor interest and, more importantly, encourages the implementation of measures by the government to accelerate economic progress. Thus, considering the growing Brazilian international exposure in the past few years and the exposure it will have at least until all sports events end in 2016, the time is definitely favorable to invest in the progress of the Brazilian entrepreneurial ecosystem, aiming at a fast development of the features that require attention indicated in this study; in an effort to leave, for future generations, not just stadiums and memories, but a diverse portfolio of new successful businesses.

The authors reiterate that this paper is an initial effort to systematize data on entrepreneurship in Brazil resorting to an official database enabling international comparisons, and its prime objective is to be a starting point to establish a dialogue and join efforts with research and professional organizations and domestic and international academicians who are motivated by

the same wish to understand world entrepreneurship and who wish to add their observations or share relevant data to allow the constant improvement of the database presented here. A very interesting next step would be, for example, to develop comparative studies among Brazil and the others Latin American countries in which regards their entrepreneurial ecosystem, its characteristics and evolution.

Also, a longitudinal study combined with joint efforts to map out the indicators for which Brazilian data could not be found will allow an understanding of the evolution of entrepreneurship. For this purpose, the Determinants scope alone can be considered, as done by the authors; also fitting is expanding the understanding of the model proposed by the OECD as of the study of two other scopes approached: Impacts and Performance.

Considering this study's qualitative stage, the authors have met with resistance while discussing failure experiences with entrepreneurs who were not successful with their startups. Amassing a greater number of statements concerning this issue may contribute enriching information to understand the reason for enterprise failure, adding a more comprehensive dimension of the phenomenon to the study.

Besides, in such a diverse country as Brazil, regional studies are always interesting and unveil surprising realities. Close analysis of the country's peculiarities – mainly those belonging to the north, northeast and center west regions, not approached by this investigation – stand out as another possibility for a study capable of creating deeper knowledge about the subject.

Finally, greater efforts should be prosecuted upon the study of pillars *Entrepreneurial capability* and *Entrepreneurship culture*. Because these aspects are more subjective than the others are, available data are scarcer, therefore limiting understanding. The contribution from Brazilian and international bodies that may share data of this magnitude is of the essence, such that the effort may indeed reach world comparability proportions.

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Appendix I - List of mapped variables on regulatory framework and their respective description and sources

OECD VARIABLES		
Regulatory Framework	Description	Data Sources
Administrative Burdens (Entry and Growth)		
Burden of Government Regulation	Survey responses to the question: how it is to comply with administrative requirements (permits, regulations, reporting) issued by the government in your country? (grades going from 1 to 7: 1= burdensome, 7 = not burdensome).	Global Competitiveness Report (WEF)
Costs Required for Startinga Business	The official cost of each procedure in percentage of Gross national Income (GNI) per capita based on formal legislation and standard assumptions about business and procedure.	World Bank, Doing Business
Minimum Capital Required for Startinga Business	The paid-in minimum of capital requirement that the entrepreneur needs to deposit in a bank before registration of the business starts.	World Bank, Doing Business
Number of Days for Starting a Business	The average time spent duringeach enterprise start-up procedure.	World Bank, Doing Business
Number of Procedures for Startinga Business	All generic procedures that are officially required for an entrepreneur to start an industrial or commercial business.	World Bank, Doing Business
Procedures to Build a Warehouse	The total number of procedures required to build a warehouse. A procedure is any interaction of the company's employees or managers with external parties.	World Bank, Doing Business
Days to build a Warehouse	The total number of days required to build a warehouse. The measure captures the median duration that local experts indicate is necessary to complete a procedure in practice.	World Bank, Doing Business
Cost to build a Warehouse	Cost is recorded as a percentage of the economy's income per capita. Only official costs are recorded.	World Bank, Doing Business
Number of procedures for Register Property	The total number of procedures legally required to register property. A procedure is defined as any interaction of the buyer or the seller, their agents (if an agent is legally or in practice required) or the property with external parties.	World Bank, Doing Business
Time for Register Property	The total number of days required to register property. The measure captures the median duration that property lawyers, notaries or registry officials indicate is necessary to complete a procedure.	World Bank, Doing Business
Costs for Register Property	Cost is recorded as a percentage of the property value, assumed to be equivalent to 50 times income per capita. Only official costs required by law are recorded.	World Bank, Doing Business
Time it Takes to Prepare, File and Pay the Corporate Income Tax, VAT and Social Contributions	The time it takes to prepare, file and pay (or withhold) the corporate income tax, the value added tax and social security contributions (in hours per year).	World Bank, Doing Business
Bankruptcy Regulations		
Actual Cost to Close a Business	The cost is measured in percent of estate, based on a standard business closure.	World Bank, Doing Business
Actual Time to Close a Business	Time is recorded in calendar years. The indicator is based on a standard business closure.	World Bank, Doing Business
Bankruptcy Recovery Rate	The recovery rate estimates how many cents on the dollar claimants - creditors, tax authorities and employees - recover from an insolvent firm.	World Bank, Doing Business
Possibility of a Fresh Start	The indicator measures an entrepreneur's possibility to resume running a business after experiencing financial difficulties. A fresh start can be attained through a restructuring of the existing business to avoid bankruptcy or by restructuring debt.	OECD one-off survey "Policy questionnaire on bankruptcy"

OECD VARIABLES		
Regulatory Framework	Description	Data Sources
Product and Labour Market Regulation		
Difficulty of Firing*	The index measures whether laws or other regulations have implications for the difficulties of firing a standard worker in a standard company, based on factbased (yes/no) questions, remodelled into a 0-100 index.	World Bank, Doing Business
Difficulty of Hiring*	The index measures whether laws or other regulations have implications for the difficulties of hiring a standard worker in a standard company, based on factbased (yes/no) questions, remodelled into a 0-100 index.	World Bank, Doing Business
Ease of Hiring Foreign Labour	Survey responses to the question: Does labour regulation in your country prevent your company from employing foreign labor? (grades going from 1 to 7: 1 = prevents your company from employing foreign labor, 7 = does not prevent your company from employing foreign labor).	Global Competitiveness Report (WEF)
Extent of Incentive Compensation	Survey responses to the question: what is the extent of cash compensation of management? (grades going from 1 to 7: 1 = is based exclusively on salary, 7 = includes bonuses and stock options, representing a significant portion of overall compensation).	Global Competitiveness Report (WEF)
Rigidity of Hours Index*	The indicator is an index with five components: (i) whether night work is restricted; (ii) whether weekend work is allowed; (iii) whether the work week consists of five and a half days or more; (iv) whether the workday can extend to 12 hours or more (including overtime); and (v) whether the annual paid vacation days are 21 days or less. (grades goes from 0 to 100, when higher grades indicates stronger rigity of hours).	World Bank, Doing Business
Immigration Laws	Survey responses to the question: Does immigration laws in your country prevent your company from hiring foreing labor? (grades going from 0 to 10: 0 prevents - 10 does not prevent).	IMD World Competitiveness Yearbook
Pay and productivity	Survey responses to the question: To what extent is pay in your country related to productivity? [Rate: 1 = Not related - 7 = Strongly related].	Global Competitiveness Report (WEF)
Court & Legal Framework		
Enforcing Contracts - Cost in % of claim	Cost is recorded as a percentage of the claim, assumed to be equivalent to 200% of income per capita. No bribes are recorded. Three types of costs are recorded: court costs, enforcement costs and average attorney fees	World Bank, Doing Business
Enforcing Contracts - Number of Procedures	A procedure is defined as any interaction between the parties, or between them and the judge or court officer. This includes steps to file the case, steps for trial and judgment and steps necessary to enforce the judgment.	World Bank, Doing Business
Enforcing Contracts - Time	Time is recorded in calendar days, counted from the moment the plaintiff files the lawsuit in court until payment. This includes both the days when actions take place and the waiting periods between.	World Bank, Doing Business
Social and Health Security		
Public Expenditure on Unemployment Support	Public expenditure on unemployment per unemployed in US$, current PPPs. Public expenditure includes both partly, full public pay and any other program expenditures the public has.	OECD, Public expenditure and participant stocks on Labour Market Policy (LMP)
Public Health Care Coverage	The share of the population eligible for a defined set of health care goods and services under public programmes.	OECD Health data
Total expenditure on health as a percentage of gross domestic product	This is a core indicator of health financing systems. It provides information on the level of resources channeled to health relative to a country's wealth.	World Health Organization
Private expenditure on health as a percentage of total expenditure on health	This is a core indicator of health financing systems. This indicator contributes to understanding the relative weight of private entities in total expenditure on health. It includes expenditure from pooled resources with no government control, such as voluntary health insurance, and the direct payments for health by corporations (profit, non-for-profit and NGOs) and households. As a financing agent classification, it includes all sources of funding passing through these entities, including any donor (funding) they use to pay for health.	World Health Organization
General government expenditure on health as a percentage of total expenditure on health	This is a core indicator of health financing systems. This indicator contributes to understanding the relative weight of public entities in total expenditure on health. It includes not just the resources channeled through government budgets to providers of health services but also the expenditure on health by parastatals, extrabudgetary entities and notably the compulsory health insurance payments. It refers to resources collected and pooled by the above public agencies regardless of the source, so includes any donor (external) funding passing through these agencies.	World Health Organization

OECD VARIABLES		
Regulatory Framework	Description	Data Sources
Income taxes; Wealth/Bequest Taxes		
Average Income Tax plus Social Contributions	The average rate of taxation in percentage of the gross wage. The indicator is based on a standard case: single (without children) with high income. [% GDP].	OECD Revenue statistics
Highest Marginal Income Tax plus Social Contributions	The highest rate of taxation in percentage of the gross wage. The indicator is based on a standard case: single (without children) with high income.	OECD Revenue statistics
Revenue from Bequest Tax	The revenue from bequest tax as a percent of GDP on a 3 year moving average.	OECD Revenue statistics
Revenue from Net Wealth Tax	The revenue from net wealth tax as a percent of GDP on a 3 year moving average.	OECD Revenue statistics
Taxes on income, profits and capital gains (% GDP)	Federal or central government's revenue from income, profits and capital gains taxes as a percentage of GDP	OECD Revenue statistics - Latin American Countries
Payroll taxes - payed by the employer (% GDP)	Contribution of employers, private or governmental, to public pension schemes.	Receita Federal do Brasil
Payroll taxes - payed by the employee (% GDP)	Contribution of employees - of public or private sphere - to the social security system.	Receita Federal do Brasil
Business and Capital Taxes		
SME Tax Rates	Not specified at OECD framework	OECD Revenue statistics
Taxation of Corporate Income (% of GDP)	Corporate Tax Revenue as a percentage of GDP.	OECD Revenue statistics
Revenue	As percentage of GDP on a three year moving average.	Not specified at OECD framework
Taxation of Dividends – Top Marginal Tax Rate	Not specified at OECD framework	OECD Tax database
Taxation of Stock Options	The average tax wedge for purchased and newly listed stocks. Average incomes are used.	OECD, The Taxation of Employee Stock Options - Tax Policy Study No. 11
Taxes on financial and capital transactions (% GDP)	Federal or central government's revenue from financial and capital transactions taxes as a percentage of GDP.	OECD Revenue statistics - Latin American Countries
Cost of capital	Survey question: cost of capital encourages business development [RATE: 0 Deters - 10 Encourages].	IMD World Competitiveness Yearbook
Patent System; Standards		
Intellectual Property Rights	Survey responses to the question: intellectual property protection in your country (1 = is weak or nonexistent, 7 = is equal to the world's most stringent).	Global Competitiveness Report (WEF)
Property Rights	Survey responses to the question: property rights, including over financial assets (1 = are poorly defined and not protected by law, 7 = are clearly defined and well protected by law).	Global Competitiveness Report (WEF)

REGULATORY FRAMEWORK:

- Variables suggested by the OECD for which it was possible to find data from Brazil = 24
- Variables suggested by the OECD for which it was **not** possible to find data from Brazil = 13
- Alternative variables added to the initial list provided by the OECD = 10

***** Difficulty of Firing; Rigidity of hours index and Difficulty of hiring: all data referring to Doing Business were provided directly by the report organizing committee. The documents provided to Fundação Dom Cabral listing the requested data included the observation in these specific variables that the indicators are being revised. The figures were then extracted from the Doing Business reports available online.