The Brazilian Entrepreneurial Ecosystem of Startups: An Analysis of Entrepreneurship Determinants in Brazil and the Perceptions Around the Brazilian Regulatory Framework

Carlos Arruda, Vanessa Silva Nogueira, Afonso Cozzi, and Vinícius Costa

Abstract This paper presents the main findings extracted from a quantitative and qualitative research mapping of the Brazilian startup entrepreneurial ecosystem. The analysis was set up based on the six entrepreneurship determinant categories defined by the Organization for Economic Co-operation and Development (OECD), which are: 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, mainly in regards to the country's regulatory structure.

Keywords Determinants • Ecosystem • Entrepreneurship • OECD • Startup

1 Introduction

Fast-growing 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 1 year, more successful startup 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.

C. Arruda • V.S. Nogueira (✉) • A. Cozzi • V. Costa
Innovation and Entrepreneurship Research Center, Fundação Dom Cabral, Nova Lima, MG, Brazil
e-mail: arruda@fdc.org.br; vanessanog@gmail.com; acozzi@fdc.org.br; vinicius.costa@fdc.org.br

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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.

2 Objectives

The research effort starts from these six pillars to investigate who are the players 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 and 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 players in the Brazilian entrepreneurship environment, amidst whom were notable 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, as there are no previous efforts of applying this entrepreneurship mapping technology in Brazil – a country

that is not an OECD member – at the level of detail and systematization applied in this study.

3 Theoretical Foundations

Resorting to Schumpeter's classic *Capitalism, Socialism and Democracy* is one of the pathways 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 driver responsible for opening new markets. (Schumpeter 1975).

Governments of different nations understand entrepreneurship as an indispensable element to preserve the viability and competitiveness of a country's economy. Yet, despite the great attention given to the subject worldwide, 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 the main framework: 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. BEEP aimed at developing the concepts based on which would be possible to understand different communities and nations regarding what Isenberg called *Entrepreneurship Ecosystem*. The Ecosystem is composed by the following domains: policy, finance, culture, supports, human capital and markets.

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 the 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 the reason for recognition. 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 includes both those professionals who amassed their skills through entrepreneurship-veered education, and the mass work force, which are both part of 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".

Following the same efforts pursued by the BEEP, the OECD also triggered 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 indicators representing the determinant elements of entrepreneurship.

Thus OECD's EIP – Entrepreneurship Indicators Programme – came into being in 2006 and, in 2007, joined forces with Eurostat, a system for the collection and organization of European country statistics, to develop definitions and concepts that would become the basis for the construction of a database on the entrepreneurship phenomenon at the world level.

The result of the OECD-Eurostat partnership is depicted in Fig. 1:

As seen in Fig. 1, 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 takes 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 Fig. 1.[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*.

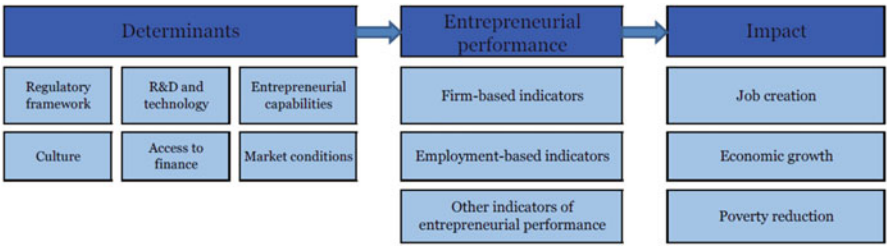

Fig. 1 Topic categories for entrepreneurship indicators (Source: OCDE 2009)

Finally, it is very important to mention that the study gave major focus specifically to startup entrepreneurship, mainly when considering the qualitative approach. According to Julie Meyer's (2012) concept, startups are companies that start life small, but think big and, due to their great innovative potential, harbor a significant probability of early exponential growth.

4 Methodology

Quantitative and qualitative data collection happened between August 2012 and March 2013. Sections 4.1 and 4.2 describe in detail what each stage's process was like.

4.1 Qualitative Stage

Thirty 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. Table 1 shows sample details.

Consultants are understood to be 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.

Table 1 Description of qualitative interviews

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

4.2 Quantitative Stage

The construction of the quantitative database was based 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 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 laid the main challenge to the construction of the Brazilian quantitative base.

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

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

5 Discussion of Results

The analysis of the results presented below follows the structure of the six pillars contained in the previous sections, although special attention is given to the Regulatory Framework since the greater number of variables mapped to understand the entrepreneurial ecosystem in Brazil are associated with this exact pillar.

Most relevant qualitative and quantitative data are shown in a condensed manner. 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.

5.1 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 2 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.

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.

Table 2 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	59.4	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[b]	0	0	0	0	ND	ND	ND	0	2010	Product and Labour Market Regulation
Rigidity of Hours Index[b]	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	17.9	15.9	91.3	2013	Bankruptcy Regulations
Difficulty of hiring[b]	67	78	78	78	ND	ND	ND	0	2010	Product and Labour Market Regulation

Source: FDC Study – The Brazilian Startup Entrepreneurial Ecosystem

A full description of each variable mentioned above is presented in Appendix 1 at the end of the paper

ND unavailable data

[a]Year: indicates to what year the data specified for Singapore corresponds

[b]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

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.

> [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.

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 min, 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.[3]

[3] 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.[4]

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.

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.

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 3 are notable.

5.2 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's 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. Innovative technologies or highly

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

Table 3 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

scalable ideas through e-commerce that are already commonplace in other countries find a practically untapped market in Brazil, a country that is increasing its thirst for digital consumption daily.

> 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. The country's evaluations in this respect showed minimal variation, and have remained below average (between 3.8 and 3.6) for the past 7 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 which 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.

5.3 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 increases 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.

Besides that, the numbers show that 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, against only 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, on a scale from 0 to 100, where 100 represents the greatest probability of obtaining credit (IMD 2012).

The *Investor Protection*[5] 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 7 years at a score of 5.3 – an almost 4-point difference compared to Hong Kong, a country defined as a benchmark for this pillar, whose score is 9 (World Bank 2013a).

Thus, on the one hand entrepreneurs complain of not having access to the capital available in the country and stress the reality in that the domestic 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.

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.

> [...] the groups that have investment potential in Brazil are not prepared for startup companies. They look for solid companies. 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. [...] And this money really makes a difference to those who need it the most, the company that is only just starting.

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).

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 on 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.

[5] 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.

> 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.

Quantitative evaluation indicates that the collaboration between Brazilian universities 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, some growth is noticed 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).

5.4 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 foreign professionals into the country.

Both interviews and quantitative data depict the Brazilian reality in a similar fashion. For example, education in Brazil, almost entirely, does not approach entrepreneurship themes either in the traditional formation courses or in higher education courses such as business management, engineering and economics; in which an entrepreneurship curriculum would be applicable. These courses are limited to the classic education to develop professionals who are mostly trained to be fine employees of great organizations – in Brazil, a synonym with professional success – but not to establish their own business.

> [...] as far as I know, universities have at most a junior company, which is something very different [from proper entrepreneurship education]. 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?

Given this scenario, it would be interesting for the country's economy to make Brazil attractive to 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 the attractiveness necessary to welcome foreigners and possibly retain them in the country (UNESCO 2013).

5.5 Entrepreneurship Culture

Culture is the backdrop of all elements of an entrepreneurial ecosystem and directly affects its operations and growth. Here, investigating the development of an entrepreneurial mindset in individuals from their basic schooling is more important than understanding whether any knowledge about entrepreneurship is being taught in intermediary school and higher education.

An analysis of preferences and characteristics of Brazilian individuals show 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 stigmas 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.

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 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".

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.

(continued)

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 studies 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.

Measures encouraging high-growth entrepreneurship that yields large-scale economic and financial returns to the country 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.

Finally, 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.

Appendix 1: List of Mapped Variables on Regulatory Framework and Their Respective Description and Sources

Table 4 Mapped variables on regulatory framework - 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? (gradres going from 1 to 7: 1= burdensome, 7 = not burdensome).	Global Competitiveness Report (WEF)
Costs Required for Starting a 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 Starting a 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 during each enterprise start-up procedure.	World Bank, Doing Business
Number of Procedures for Starting a 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

Table 4 (continued)

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

[a]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

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