BRAZILIAN SYSTEMS OF ENTREPRENEURSHIP: ARE SYSTEMIC FORCES AT WORK?

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ABSTRACT

The objective of this study was to evaluate the Brazilian System of Entrepreneurship in the light of the Systemic Conditions of Dynamic Entrepreneurship (ICSEd-Prodem) in order to identify the factors that interfere in the development of dynamic enterprises. The study indicates that the Brazilian system of entrepreneurship inhibits dynamic entrepreneurship, due to the preference of costumers for low prices rather than products with differentiated attributes based in technological innovation, social inequality that implies the formation of non-dynamic companies and regulations that discourage the creation of firms, and lack o policies and programms to support entrepreneurs. The results of the article provide insights for decision makers on the factors that determine the opening and development of dynamic firms.

Keywords: Entreprenuership. System. Indicator.

1 INTRODUCTION

Entrepreneurship is essential for the growth and competitiveness of a nation, regardless of its stage of development. The developed nation face the dilema of maintaining productivity and economic prosperity while developing countries are expected to generate jobs for the growing population. One of the way to meet the needs of both developed and developing countries is through policies that stimulate dynamic entrepreneurship, especially that which generates jobs and values for society, measured by the introduction of new or significantly improved products and/or services, originated from technological innovation, from small and medium enterprises (SMEs) in startup or pos-startup phase (ÁCS; SZERB; AUTIO, 2015).

Therefore, entrepreneurship is closely related to innovation that is increasingly seen as key factor for competitivneess of a country, both nationally and internationally, and thus it needs to be a parto f the competitive strategy of firms. Among the arguments, those related to resilience can be mentioned, as innovative firms recover more quickly from economic downturns (WYMENGA et al., 2011) and related to the results of entrepreneurial action which, among others, creating firms that generate value, such as higher organizational performance, by the creation of new skilled job posts and well paid, or by the introduction of new products or process (KURATKO; HODGETTS, 2001; SCHUMPETER, 2011 [1934]). Entrepreneurship is a great vector of development and recovery from economic shocks and generating jobs, the need for analytical assessment tools development and monitoring has also increased, with aim of creating a set of information (indicators) that can support decision-makers in developing more efficient and effective policies in the future and deliver accountability of the effects of policies implemented in the past (SHANE, 2009).

The Index of Systemic Condititons of Dynamic Entrepreneurship (ICSEd-Prodem) is one of the most recent approaches to measures the national systems of entrepreneurship (NSE) to stimulate the creation of dynamic enterprises and to evaluate the path of economic development through entreprenuership, based on the systemic factors that interfere in the opening and development of dynamic enterprises (KANTIS; FEDERICO; GARCÍA, 2014a). This research aims to evaluate the Brazilian System of Entrepreneurship (BSE) in the light of the ISCEd-Prodem approach. It is na exploratory effort, in order to identify the systemic factors that interfere in the development of dynamic entrepreneurhsip.

To achieve this objective, the study is divided into six sections, excluding this introduction. Section 2 presents the justification of the study by addressing the subject and investigated problem. Section 3 provides a brief of overview of the national systems of

entrepreneurship approach, and then Section 4 discusses the assumptions and indicators used to assess National Systems of Entrepreneurship. Section 5 comments on the methodological steps taken, while Section 6 contains the investigation results and discussions. Finally, Section 7 concludes with the final remarks and suggestions for further work.

2   DYNAMIC ENTREPRENEURSHIP

Several studies address the socioeconomic contribuition of entrepreneurship in terms of job creation and innovations in new products, services and organizational models (ÁCS, 2006; HOLTZ-EAKIN; KAO, 2003; STEL; CARREE; THURIK, 2005; TOMA; GRIGORE; MARINESCU, 2014).

According to Llisterini (2004), small and medium enterprises (SMEs) are associated with entrepreneurship due to their ability to create jobs, iinovation and export opportunities. One of the pioneers in research to emphasize this point was David Birch, in 1981 (apud OECD, 2002), which showed that over 80% of new jobs created came from small rather than large companies in the US. In his research, the author introduced a metaphor of the animal kingdom to explain the differences between companies in terms of contribution to job creation. According to the author, small-enterprises are like mices, in spite of their quantity, they do not grow and do not impact in a significant way the job creation. Some large companies (quoted on the stock market) are associated with elephants because of their size, market share and slow growth in new job creation. The highest rates of employment generation, comes from the companies called gazelles, small fast-growting enterprises, associated with this species due to their high growth rates in terms of job creation in the startup phase.

The OECD considers as gazelles, "all enterprises up to 5 years old with average annualised growth greater than 20% per annum, over a three year period" (PETERSEN; AHMAD, 2007, p. 3). "The share of gazelles, as mensured by employment (or turnover), corresponds to the number of gazelles as a percentage of the population of enterprises with tem or more employees" (OECD, 2015, p. 70). Based on Birch's enterprise typology and the OECD gazelle enterprise definition. Kantis, Ishida and Komori (2002) have developed the concept of dynamic enterprise, which refers to firms with more than 3 and less than 10 years of age and which increased the volume of employed staff from 15 to 300 workers.
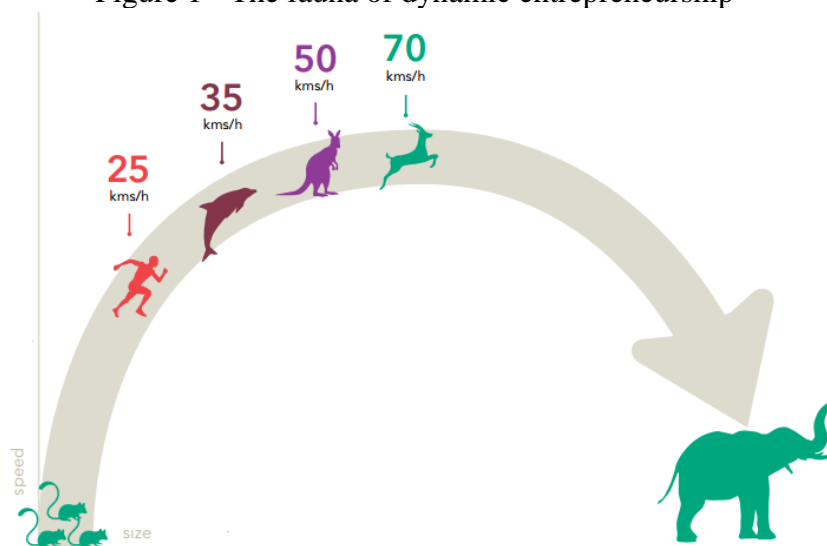
According to Kantis, Federico and García (2015) the definition of dynamic firms is more appropriete to reflect the complexity of the enterprises growth (at all stages of their life cycle), than more rigid definitions based on the growth sales or contribuition to the job generation. According to these authors, the concept of gazelles is a simplification of the firms growth dynamics. Some researchers (GARNSEY et al., 2004; GARNSEY; HEFFERNAN, 2005) have identified different growth dynamics among nascent firms, such as: i) Fast and continuous growth (gazelles); ii) Slow growth in the early years, until these firms grow exponentially; iii) Moderate but steady growth; iv) Fast but unstable growth; v) Grow through a entrepreneur's business portfolio.

These results were used by Kantis, Federico and García (2015) to support his new typology of growth of dynamics enterprises, illustrated in Figure 1. According to the authors, firms should not only be evaluated for their capacity for fast and continuous growth, but for their development dynamics. Firms classified as kangaroos, are the second fastest type, but slow compared to gazelles, however, are able to jump (growth). Dolphin firms are slower than the first two, yet often emerge to move forward (they are characterized by rapid growth with oscillations). Firms classified as human, are characterized by certainty as to ability to move forward. These firms, show growth dynamics ranging from moderate to fast, in addition to jumps. However, in lower growth rates the gazelles and jumps lower than those of the kangaroos enterprises. Mices representes the reality of developing economies, they refer to

microenterprises due to their quantity and are associated with liberal professionals or individuals who have started a venture due to lack of quality jobs.

This typology is adequate to classify the development dyanamics of firms, since many althrough producing innovative and complex products and/or services, identify market preferences only after a few years of existence. A firm can be defined as a **kangaroo** enterprise presentes a delay in growth, that is, it dedicates its first years to the development of highly innovative products, however it does not get significant revenues, since its products do not meet the preferences of its market (for inferiority or for excesso of complexity), however, after some years making improvements according to the preferences of the market, the company starts to present high rates of growth. There are mixed cases where a enterprise is defined as kangaroo in early years until it grows rapidly and becomes a gazelle, however, after deceleration, it is again classified as kangaroo. Other companies, while offering innovative products to specific markets, have their growth linked to the demand of some specific customers. As in the case of producers of agricultural Technologies, where the price of the products is available to only a few farmers. Some companies may have sales volumes similiar to microenterprises in the early years and will only attain high levels of growth through export (KANTIS; FEDERICO; GARCÍA, 2015).

Figure 1 - The fauna of dynamic entrepreneurship

Source: Kantis, Federico and García (2015)

In addition to the evaluation for growth, firms can be evaluated for their value, so some researches (KANTIS; FEDERICO; GARCÍA, 2016; TRUMAN; LOCKE, 2016) mention four new metaphors to classify the firms according to their value, are they: unicorns with na appreciation of US$ 1 billion in a period of 5 years since its foundation; Dragons with na appreciation of less than US$ 1 billion, however, are highly profitable and able to return all capital to investors. Finally, the centaurs and the little ponies with appreciation of US$ 100 and US$ 10 millions respectively.

Kantis, Federico and García (2016) integrate the definitions and typologies of dynamic entrepreneurship in the ICSEd-Prodem approach to evaluate the conditions of the NSE with regard to the creation of dynamic firms.

3   NATIONAL SYSTEMS OF ENTREPRENEURSHIP (NSE)

In the field of contextual entrepreneurship, two systemic approaches to the development of policies to support entrepreneurship stand out. The first known as the "Entrepreneurial

Development System" or simply "National System of Entrepreneurship (NSE)" (ÁCS; AUTIO; SZERB, 2014) analyzes the development trajectory of dynamic enterprises by observing the systemic factors that influence the entrepreneurial activity. This approach allows the recognition of the problems that inhibit the entrepreneurial activity and, based on this, identify the areas that need political intervention (KANTIS; FEDERICO; GARCÍA, 2014b). The second approache called "entrepreneurial ecosystems" analyzes the role of the actors and their interactions in generating the conditions for the development of new dynamic firms, as well as the insertion of entrepreneurs in different support networks (ISENBERG, 2011; MASON; BROWN, 2014).

Figure 2 - National Systems of Entrepreneurship
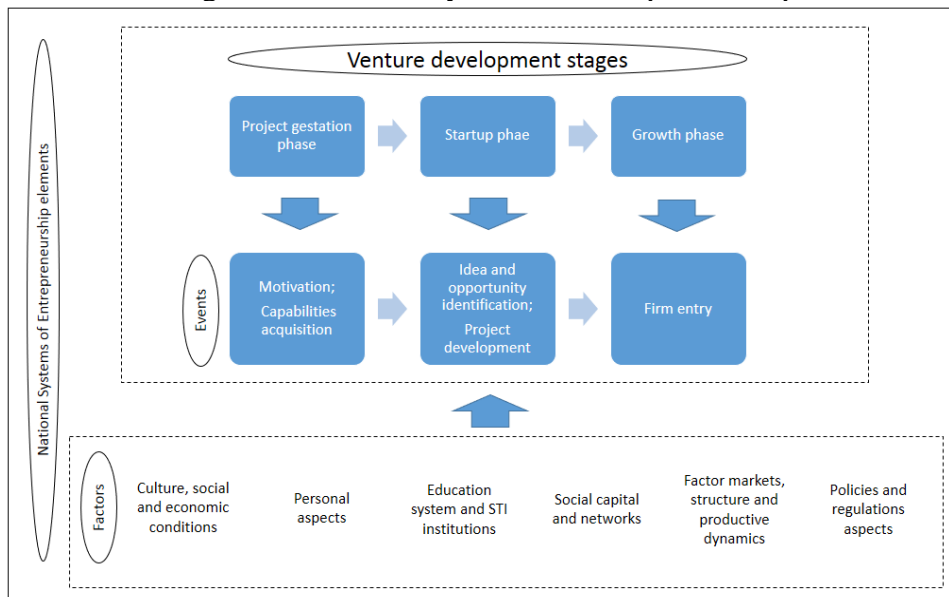
Source: Elaborated by authors based on Kantis (2010)

The NSE approach considers the creation of firms as the product of a process influenced by a series of interdependente factors. These factors affect the life cycle of the companies from the project gestation gestation phase, startup phase and business growth phase (pos-startup period), as shown in Figure 2 (KANTIS; FEDERICO; MENENDEZ, 2012).

The success in the gestation phase, depends on individuals with entrepreneurial attitudes and aspirations (entrepreneurial behavior), that is, motivated to create and expand their own business (KANTIS; FEDERICO; MENENDEZ, 2012). The entrepreneurial behavior is significantly influenced by culture, through social values and norms that can stimulate or inhibit entrepreneurial attitudes and aspirations, represented by risk aversion, business creation, growth and innovations. The cultural and normative aspects influence the degree of openness of the entrepreneurs to socialize their experiences with other people, a fact that interferes in the career choice of the individuals (AUTIO; PATHAK; WENNBERG, 2013; KANTIS; FEDERICO; GARCÍA, 2014b). Studies shows that family support, the universities and the supports networks, influence the entrepreneurial behavior and consequently the oppenness and quality of companies (FINI; GRIMALDI; SOBRERO, 2009; GRIMALDI et al., 2011; ROBERTS; EESLEY, 2011; ROMERO LUNA; PETRESCU; BALALIA, 2011).

Sucess in the startup phase depends on the quality of the Project (idea and opportunity identification) and the availability and capacity to acquire resources, such as financing, capital, technologies, business partners, among others (KANTIS, 2003).

The growth phase (or post-startup period) translates into the firm's entry into the market (KANTIS, 2003). The firm's entry is the result of the search of the entrepreneurs by an opportunity, either by the lack of quality jobs or by the opportunity to improve income (AMIT; MULLER; COCKBURN, 1995). The business entry is also associated with the dynamics of the productive structure, such as changes or maturity of technologies, industrial growth (ABERNATHY; UTTERBACK, 1978; DOSI, 1982; KENNEY; VON BURG, 1999), market demand, characteristics (barriers) of competition (SOBEL; CLARK; LEE, 2007; SORENSEN, 2007), availability of resources (NANDA; SORENSEN, 2010), among others.

The STI institutions (universities, technology transfer offices (TTO), R&D institutions, S&T parks and incubators) influence the development of technology-based enterprises (AUDRETSCH et al., 2016; LOCKETT et al., 2005; ROBERTS; EESLEY, 2011; WEST; BAMFORD, 2005). These institutions, in addition to technology development or technology transfer, provide resources, such as human capital, financial resources (venture capital) and administrative support in business operacionalization (CUMMING; LI, 2013; GRIMALDI et al., 2011; WRIGHT et al., 2006).

The NSE approach is a form of *ex-post* analysis to evaluate the trajectories of development of the dynamic firms in a specific economy, considering the contextual and individual aspects of entrepreneurship (ÁCS; AUTIO; SZERB, 2014; SZERB et al., 2013). This approach goes beyond market failures (human and financial resources, information, support services, etc.) that are used to justify political interventions for entrepreneurship, but which are not capable of contemplating the social aspects that interfere in the entrepreneurial activity, such as the influence of education and culture on entrepreneurship (entrepreneurial attitudes and aspirations) (KANTIS; FEDERICO; MENENDEZ, 2012).

Lundstrom and Stevenson (2002) argue about the need for entrepreneurship and SMEs policies. The first one aims to help the firm creation and help the enterprises in initial stage, while SME policies are aimed at helping the estabeleshed business growth. Basead on the idea of Lundstron and Stevenson (2002), Kantis and Federico (2012) emphasize the need for entrepreneurship policies from individuals, for potential entrepreneurs to established business.

Figure 3 - Market failures and entrepreneurship policies
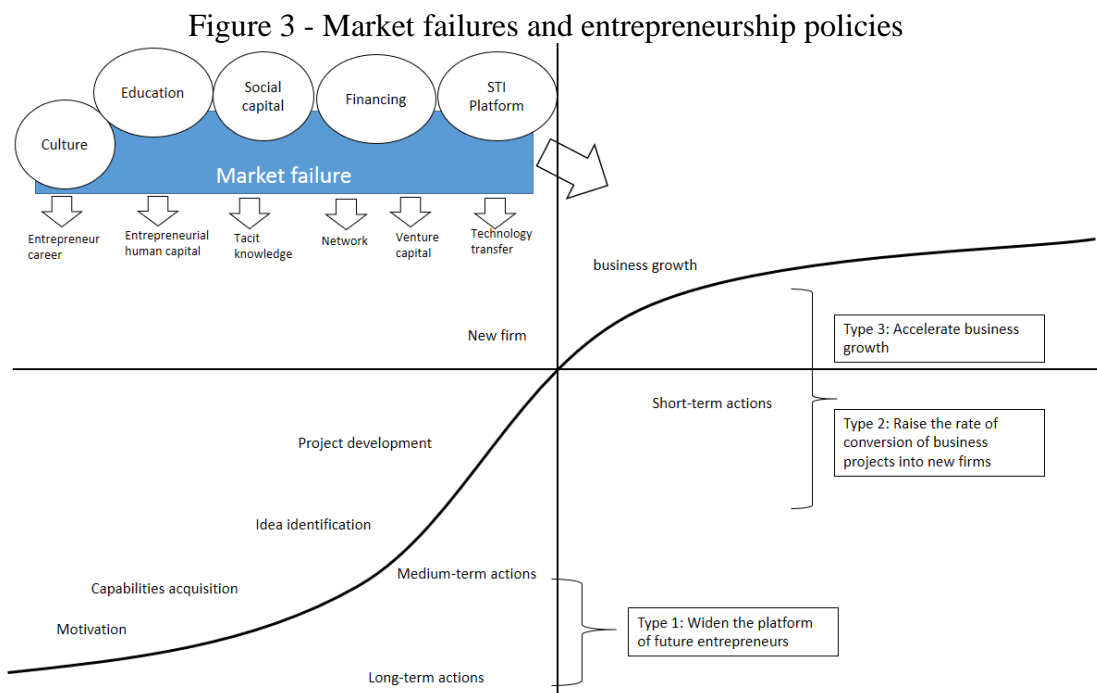
Source: Elaborated by authors based on Kantis e Federico (2012) e Kantis, Federico e Menendez (2012)

The Figure 3 adapted from the works of these authors, illustrates the market failures and aspects considered by the NSE approach, the entrepreneurship stages and their respective policies.

Kantis and Federico (2012) mention three policies types. Type 1 seeks to expand the number of entrepreneurs in the medium to long term through the development of an entrepreneurial culture, acquired through entrepreneurial education, fiscal reforms and innovation incentives. Type 2 policies are aimed at transforming ideas and projects into startups (in short-term) through programs to support entrepreneurs, such as incubators programs, sicence parks, institutional and university capacity programs. Type 3 seeks to affect entrepreneurship in the short term, by financing the growth of estabelished business, as well as in value generation projects, through venture capital and advisory programs.

Based on the structural and entrepreneurial cultural problems, besides the market failure of the Latin American Economies, Kantis, Federico and Garcia (2014a) developed the ICSEd-Prodem, a methodology based on the assumptions of the National Systems of Entrepreneurship approach, described in the next section.

4   INDEX OF SYSTEMIC CONDITIONS FOR DYNAMIC ENTREPRENEURSHIP (ICSED-PRODEM)

ICSEd-Prodem is a composite index that allows, through a benchmarking approach, to identify the systemic factors that stimulate or inhibit the dynamic entrepreneurship. The first version of the ICSEd-Prodem dates from 2014 and was developed by *Programa de Desarrollo Emprendedor* (Prodem) with the purpose of providing comparative analyzes on the socioeconomic and structural factors that interfere in the entrepreneurship of developing countries, especially in the Latin American Economies (KANTIS; FEDERICO; GARCÍA, 2014a, 2015, 2016).

ICSEd-Prodem is structured around ten key dimensions (key performance indicators) that have an impact on developing enterprises. These dimensions are grouped into three distinct areas: i) Entrepreneurial capital and its determinants; ii) Factors affecting the opportunity space for new dynamic enterprises; iii) Factors wich can foster or inhibit the development of dynamic firms.

The area of **entrepreneurial human capital and its determinants** is divided into four indicators (entrepreneurial human capital, culture, education and social condititons). The section of **factors affecting the opportunity space for new dynamic enterprises** is composed of three indicators: demand conditions, business structure and STI platform. The area of **factors wich can foster or inhibit the development of dynamic firms** is divided into three indicators (social capital, financing and policies & regulations). Table 1 shows the description of ICSEd-Prodem indicators.

The ICSEd-Prodem approach was built basead on the OECD indicator building guide (NARDO et al., 2008). This approach uses 41 variables distributed among the 10 dimensions (or indicators) that result in ICSEd-Prodem. The variables are obtained from various sources, publicly available, such as, World Bank, Global Entrepreneurship Monitor, Global Competitiveness Index, World Value Survey and UNESCO, among others (KANTIS; FEDERICO; GARCÍA, 2016), details of the variables and their sources are available in Appendix 1.

ICSEd-Prodem is a holistic approach that evaluates the performance of National Systems of Entrepreneurship in therms of the systemic conditions for the generation of dynamic entreprenuership. The performance of NSEs is determined by its lowest value indicator. Thus, in order to increase systemic performance, policymakers should focus on minimizing bottlenecks, represented by poor performance indicators (KANTIS; FEDERICO; GARCÍA, 2016).

Table 1 - ICSEd-Prodem Dimensions description

Dimensions (Indicator)	Description
Entrepreneurial human capital and its determinants	
Entrepreneurial human capital	Refers to the percentage of entrepreneurs who started a business motivated by an opportunity for income improvement and who have expectations of expanding their activities and are characterized by aversion to business risk
Culture	It refers to the perceptions of society regarding entrepreneurs and their influence on career decisions.
Education	It refers to enrollment rates in secondary and tertiary education, as well as studant expenditures and the existence of entrepreneurial education at the initial and tertiary levels.
Social conditions	It assesses social equity, income leves and youth unemployment
Factors affecting the opportunity space for new dynamic enterprises	
Demand conditions	Evaluates the quality of demand, GDP growth and purchasing power parity
Business structure	It evaluates the productivity and technological intensity of the industry and the high-tech exports.
STI platform	It refers to company spending on R&D, the quality of S&T institutions and the university-industry relations, such as their S&T production and the engagement of researchers in R&D activities on private sector.
Factors wich can foster or inhibit the development of dynamic firms	
Social capital	It evaluates the characteristics of a society in terms of individualism and trust, as well as the formation of social support networks.
Financing	It assesses accessibility to Venture Capital, bank loans and entrepreneurship funds.
Policies and regulations	Evaluates administrative procedures for opening and closing businesses, taxes and entrepreneurship support policies and programs.

Source: Elaborated by authors based on ICSEd-Prodem 2016 (KANTIS; FEDERICO; GARCÍA, 2016)

Table 2 - ICSEd-Prodem Latin America ranking of systemic condititons

Ranking	Country	ABB	ICSEd	GDP per capita
1	Chile	CHL	38,42	22.370,20
2	Brazil	BRA	33,74	15.390,60
3	Mexico	MEX	31,90	17.268,50
4	Uruguay	URY	31,60	21.243,80
5	Colombia	COL	31,33	13.829,10
6	Costa Rica	CRI	31,32	15.594,60
7	Argentina	ARG	29,94	20.364,40
8	Bolivia	BOL	25,81	6.953,80
9	Peru	PER	25,71	12.529,20
10	Ecuador	ECU	24,73	11.474,10
11	Panama	PAN	24,37	18.142,00
12	Venezuela	VEN	19,27	9.340,00
13	El Salvador	SLV	15,64	8.619,60
14	Dominican Republic	DOM	12,87	10.864,50
15	Guatemala	GTM	11,71	7.722,40

Source: Elaborated by authors based on ICSEd-Prodem 2016 data (KANTIS; FEDERICO; GARCÍA, 2016)

Table 2 shows the ICSEd-Prodem ranking of Latin America countries 2016. Chile, Brazil and Mexico lead the regional ranking and have the best systemic conditions for the development of dynamic entrepreneurship.

5 METHODOLOGY AND DATA

This research is classified as quantitative and qualitative, from the approach point of view. The quantitative approach is characterized by the use ICSEd-Prodem approach. While the qualitative approach gives the research the responsability of analyzing the data logically. The
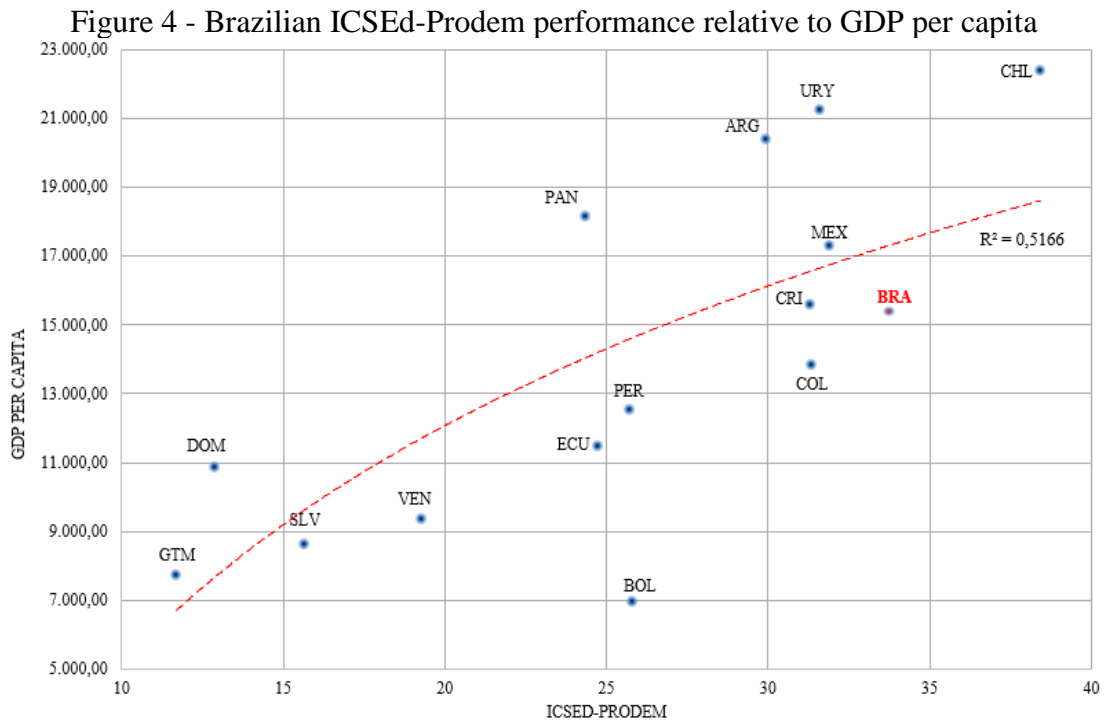
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research is classified as descriptive, while in the applied phase, since we analyze the Brazilian entrepreneurial system (SILVA; MENEZES, 2005).

The research use data-opinions in order to analyze them and assess inductively the Brazilian entrepreneurial system. Data were collected in ICSEd-Prodem 2016 report, Global Entrepreneurship Monitor (GEM) 2015-2016 adult population survey, GEM National Expert Survey 2014, Global Competitiveness Index (GCI) 2016-2017 report and Doing of Business Index (DBI) 2017 report (KANTIS; FEDERICO; GARCÍA, 2016; KELLEY; SINGER; HERRINGTON, 2015; MACEDO et al., 2014; SCHWAB, 2016; WORLD BANK, 2016a).

To meet the objective of the work, the investigation is conducted in three levels: (1) On the index level we present the Brazilian relative position in comparison to other nations. The associated trend line of ICSEd-Prodem makes possible to see if the nation sits above or below the asociated trend line, that is, the income level has affects the dynamic entrepreneurship; (2) Analysis of 10 indicators in the light of ICSEd-Prodem approach of Brazil and in comparison with Latin America averange and with the firsts economies in the ICSEd-Prodem Latin America ranking, as radar chart; (3) On the indicator level we show the Brazilian relative position on each indicator in comparinson with all Latin American countries, the performance are ranked from highest to lowest and Split into quartilhes: top (green), medium-high (blue), medium-low (yellow), lower (red), minium (grey) and maximum value (dark-green).

6   RESULTS AND DISCUSSIONS

Figure 4 shows the correlation between income level and the quality of systemic conditions for dynamic entrepreneurship in Latin America. The logarithmic function (R^2=0,5116) does not significantly represent the relationship between income and systemic condittions, however, Chile, Mexico, Uruguay and Argentina have good systemic condittions and high income levels. Brazil is na exception, since it presents good systemic conditions, however, it has modest income levels, positioning itself below the trend line.

Figure 4 - Brazilian ICSEd-Prodem performance relative to GDP per capita

Source: Elaborated by authors based on ICSEd-Prodem 2016 data (KANTIS; FEDERICO; GARCÍA, 2016)

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Figure 5 - Brazil's profile compared against Chile, Mexico and Latin America
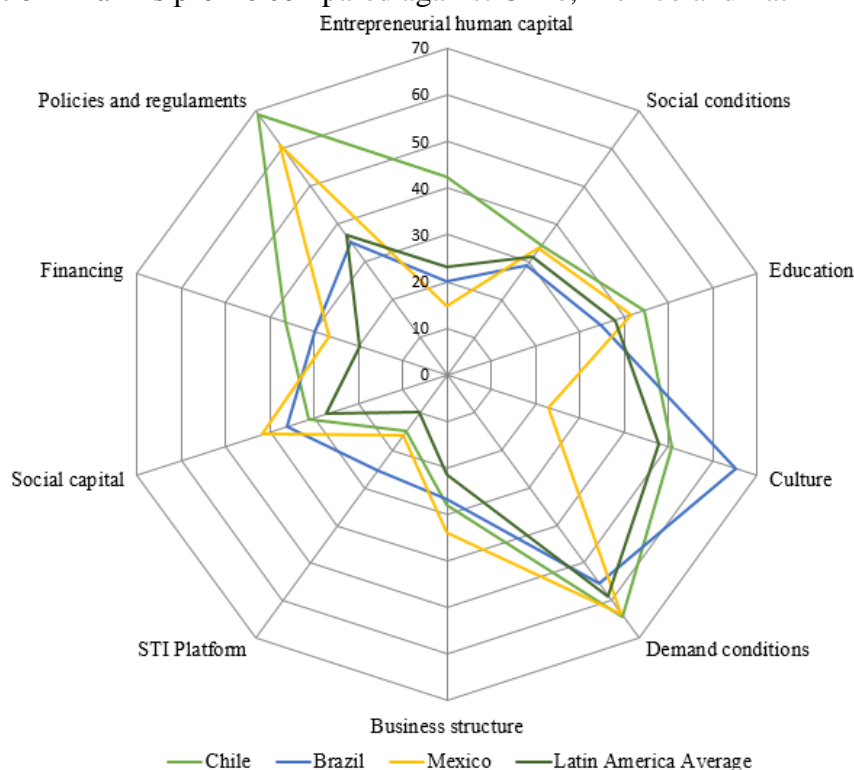
Source: Elaborated by authors based on ICSEd-Prodem 2016 data (KANTIS; FEDERICO; GARCÍA, 2016)

Figure 5 shows a comparative analysis between the three Latin American Economies with best systemic conditions for dynamic entrepreneurship, available in ICSEd-Prodem Latin America ranking (Table 2). Chile presents greater potential than the countries analyzed in terms of Entrepreneurial Human Capital, Social and Demand Conditions, Education, Financing and Policies & Regulations. Brazil overcomes Chile in two indicators: Cultural Conditions and in the STI Plataform. With respect to Mexico, it surpasses in four indicators: Entrepreneurial Human Capital, Cultural Conditions, STI Platform and Financing.

Additionally, Figure 5, shows the performance of mexican systems of entrepreneurship, which is superior to the Chilean in three indicators: Business Structure, STI Platform and Social Capital. Mexico overcomes Brazil in six indicators: Social Conditions, Education, Demand Conditions, Business Structure, Social Capital and Policies & Regulations. Brazil overcomes Latin America average in five indicators (Business structure, STI Platform, social capital and financing).

Table 3 shows the relative position of Brazilian Systems of Entrepreneurship in indicators level, for that, a benchmarking was carried out between Brazil and Latin American Economies, the values were classified by means of quartilhes and signaled in different colors. By analyzing of Brazilian Systems of Entrepreneurship in the light of ICSEd-Prodem approach, the country have potential in Culture, Business Structure, STI Platform, Social Capital and Financing. In the STI Platform, Brazil has the highest performance in Latin America. In the Education indicator, the country is characterized by medium-high performance.

In two indicators (Policies & Regulations and Social Conditions) the country presents medium-low. Regarding the Demand Conditions, although Brazil presents an indicator with a significantly high value, compared to Latin America, the country is positioned in the lower

quartile. However, the lack of entrepreneurial human capital represents the main weakness of the Brazilian Systems of Entrepreneurship.

The lack of **entrepreneurial human capital** is the main problem of the Brazilian systems of entrepreneurship when compared to the Latin American Economies. GEM survey indicate that 47.79% of the nascent companies were initiated by entrepreneurs who sought na opportunity to improve their income, however, only 9.06% of these entrepreneurs present ventures with growth expectations (KELLEY; SINGER; HERRINGTON, 2015).

IBGE's (2014) entrepreneurship research revels that from 2009 to 2012 the percentage increase in salaried employees was 32.3% in the total number of compnaies with an anual growth rates of at least 20%. However, when compared to other firms, high growth companies created 58.3% of jobs in the period 2008 to 2012. However, 9.4% of those firms are large-sized, 38.9% are medium-sized and 51.7% are small-sized and only 17.2% showed continuous growth from 2011 to 2012. These firms operate in the sectors of information and communication technology (ICT) and other knowledge-intesive activities. With regard to gazelle enterprises, these firms represent only 13.3% of the total of high growth firms. Only 5.4% are large-size, 37.7% are medium-sized and 56.8% are small-size.

Table 3 - Brazilian performance in Latin America comparison

	Indicators	Performance
Entrepreneurial human capital and its determinants	Entrepreneurial Human Capital	20,17
	Culture	65,30
	Education	34,72
	Social Conditions	29,17
Factors affecting the opportunity space for new dynamic enterprises	Demand Conditions	55,59
	Business Structure	26,87
	STI Platform	25,51
Factos wich can foster or inhibit the development of dynamic firms	Social Capital	35,98
	Financing	29,73
	Policies and Regulations	35,15

Legend:	Minimum value	Lower quartile
	Medium-low quartile	Medium-high quartile
	Top quartile	Maximum value

Source: Elaborated by authors based on ICSEd-Prodem 2016 data (KANTIS; FEDERICO; GARCÍA, 2016)

Although it presentes a score of 55.59 in the **demand condition** indicator, Brazil scores in the low quartile when compared with the Latin American countries. This indicator assesses income levels, purchasing power parity, degree of costumer orientation and buyer sophistication. In terms of income (as show in Table 2 and Figure 4) the country has a median income (GDP per capita), which implies a low purchasing power.

According to the Global Competitiveness Index (GCI), Brazil is in its ninety-fifth position regarding the degree of constumer orientation, na indicator in which the country has a score of 4.3, a fact that translates into a number of companies that are still indifferent to constumer satisfaction. Regarding the buyer's sophistication indicator, the GCI survey ranks the country in the sixty-fifth position, with a score of 3.4, indicating that a large proportion of Brazilian consumers' purchasing decisions are based on lower prices (SCHWAB, 2016).

The Brazilian performance in the **social conditions** indicator is medium-low quartile compared to the other Latin American Countries, this indicator is composed by the inverted GINI coefficient, national per-capita income and youth unemployment.

Regarding the GINI coefficient and national per-capita income, Brazil remains one of the most socially unequal countries in the world. However, between 2001 and 2013, some 24.6

billion individuals escaped poverty, representing a reduction of 0.59 to 0.53 in the poverty rate. The reduction of social inequalities in the result of increased employment and vertical policies, such as conditional transfer program *Bolsa Família* (WORLD BANK, 2016b). With regard to youth unemployment (population aged 15 to 24), rates were significantly reduced in the mid-2000s, but have been increasing since 2013 (ILO, 2016).

Brazil has a medium-low performance in the **policies and regulation** indicator, measured by variable of the Doing of Business Index (DBI) and GEM National Expert Survey. Brazilian administrative procedures make it dificult to open and close firms (MACEDO et al., 2014; WORLD BANK, 2016a). Regarding international trade, despite the implementation of a system to facilitate international trade, the country has poor performance in the cross-border trading indicator of the Doing of Business Idex (DBI), especially in terms of time, procedures and cost of import, the fact that puts the country in the position of number 149 in a ranking of 189 countries. With regard to contractual security, the country has a high performance, being the thirty-seventh in the DBI indicator of enforcing contracts. However, the tax burden is one of the highest in the 189 countries surveyed by the DBI, putting the country in position of number 181 (WORLD BANK, 2016a). According to the Global Entrepreneurship Monitor - National Experts Survey (MACEDO et al., 2014), entrepreneurship policies and support programs do not stimulate the entrepreneurial activity, but they represent barriers to entrepreneurship and deserve to be reviewed.

The country is characterized by high social inequality, with formal work being a main way of obtaining income, a low proportion of quality jobs results in the creation of informal jobs and often informal microenterprises due to the existence of regulation (administrative procedure and tax burde) that inhibit the opening and closing, formalization of existing companies. As export and import regulations also inhibit the firms internationalization, due to tariffs, time and administrative procedure.

Due to the market characteristics in terms of costumer orientantion and buyer sophistication, the entrepreneurs should adapt their strategies to increase consumer satisfaction and seek to offer products and/or services based on cost leadership, in contrast to sophisticated products, based on attibutes that differentiate them from the goods and/ or services of the main competitors. Although unsophisticated products can create opportunities for companies that offer differentiated and highly innovative products (and/or services), a large portion of the market prefers low prices.

The country has the highest performance in the STI platform, which measures the quality of S&T institutions, the investment of companies in R&D and relations between universities and industries, among others. However, high performance in this indicator is due to the investments of the established companies and their relations with universities and other S&T agentes. According to Abernathy, Utterback (1978) and Klepper (1996) the emerging companies: SMEs find it difficult to invest in R&D due to the high cost and uncertainty of these activities, as mature industries require high R&D investments to geenrate innovation, which limits startups entry. While in the new industries, firms entry rates are significantly high due to technology uncertainty, imitation ease and low R&D costs.

Some researchers pointed (BUAINAIN; CORDER; PACHECO, 2014; SCHWARTZMAN, 2008; SUZIGAN; ALBUQUERQUE, 2011; VIOTTI, 2008) the university-enterprise relationships still need to grow and cooperation between educational and research institutions is in a timely manner and in a few mature sector such as health Science, mining, agriculture and resource extraction, with the exception of the aeronautical technology sector. Nonetheless, NSE approach considers the relation between universities and individuals/startups as a key to regional development in terms of economic growth and creation of new jobs (AUTIO et al., 2014), the lack of cooperation between companies and universities makes it difficult to transfer technology, transform patentes into innovation, and share costs and

uncertainties of R&D activities, which significantly affects the ability of companies to innovate, since SMEs have difficulties in engaging large part of its budget in innovative activities, such as hiring researchers and engineers, and spending on research and development of new technologies.

These factors contribute to a low rate of entrepreneurs who started their business driven by an income opportunity and who show growth expecations, since social conditions favor entrepreneurship by necessity and the formation of microenterprises, while the regulations make it difficult to operationalization and formalization of business. Market characteristics also contribute to low diversification of enterprises, which should focus on cost leadership rather than differentiation, a fact that implies in less dynamic firms and companies that invest little in innovation due to the consumers profile.

7   FINAL REMARKS

Considering the importance of the socieconomic role of dynamic enterprises in terms of job creation, this paper proposed na analysis of Brazilian system of entrepreneurship in the light of ICSEd-Prodem approach, which was used to identify and describe the strenghts and weaknesses of entrepreneurial system, by observing the systemics factors that affects the emergence of dynamics firms. This approach is a tool to assist decision makers in designing and implementing incentive policies to entrepreneurship and SMEs.

The results showed that the dimension of STI platform is the main strength of the BSE. The dimension of entrepreneurial human capital representes the weakest link in the NSE, that is, the main bottleneck, followed by demand and social conditions, policies and regulations, the interaction of these factors affects the population entrepreneurial intentions and the entrepreneurs growth aspirations. This implies in entrepreneurs who started ventures driven by necessity and by the lack of quality jobs, due demand conditions, these entrepreneurs competes by lower prices due the costumers preferences and has not policies and regulations that incentives the adoption of growth strategies based in innovation and hiring quality human capital.

The main contribution of this paper to the field of studies related to entrepreneurship lies in the systemic analysis of the Brazilian system of entrepreneurship, the study progresses through the assessment of the factors that affect the creation and growth of dynamic firms. In the field of public policy, policymakers should aim to improve the business environment in the early stage with regard to the development of policies and regulations favorable to entrepreneurship, policies and programms to reduce social inequalities, so that entrepreneurs seek to start a business driven by opportunity for income improvement rather than starting ventures for lack of quality jobs. Policies can still encourage the development and growth of dynamic firms, through federal purchases, of technologically innovative products, characterized by attributes that differentiate them from the competition.

For future research, we propose the application of the data envelopment analysis (DEA) in the ICSEd-Prodem indicators to verify the efficiency of the systemic conditions of the National Systems of Entpreneurship of Latin America with regard to the development of dynamic firms.

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APPENDIX 1

Table 3 - ICSEd-Prodem, indicators, variables and sources

Indicators	Variables	Sources
Entrepreneurial human capital and its determinants		
Entrepreneurial human capital	-Improvement-driven opportunity entrepreneurial activity/TEA; -Growth expectation early-stage entrepreneurial activity/TEA; -Risk aversion coefficient	GEM Adult population survey G. Hofstede Database
Culture	-Entrepreneur's social status -Entrepreneurship in the media -Social hierarchy	GEM Adult population survey G. Hofstede Database
Education	-Secondary education enrollment; -Tertiary education enrollment; -Public spending per student/GDP per capita; -Entrepreneurship education at initial levels; -Entrepreneurship education at tertiary levels.	HDI – UNDP UNESCO GEM National Expert Survey
Social conditions	-Iversed Gini coeficiente -National per-capita income -Youth unemployment	World Bank International Labor Organization
Factors affecting the opportunity space for new dynamic enterprises		
Demand Conditions	-GDP at PPP (in logs); -Demand quality; -GDP growth; -Purchasing power parity	World Bank Global Competitiveness Index International Monetary Fund
Business Structure	-Business sophistication index; -Work productivity (GDP per person employed); -High-tech exports; -Industry technological intensity	Global Competitiveness Index World Bank UNIDO
STI Platform	-Companies' spending in R&D (% GDP); -Productive units' spending in R&D (% GDP); -S&T institution quality; -Researchers/PEA; -S&T production; -University-company relations	UNESCO Global Innovation Index; Global Competitiveness Index
Factos wich can foster or inhibit the development of dynamic firms		
Social Capital	-Interpersonal trust; -Individualism; -Social support network	World Survey Value/Gallup G. Hofstede database HDI - UNDP
Financing	-Accessibility to VC; -Acessibility to bank loans; -Entrepreneurship funding	Global Competitiveness Index GEM National Expert Survey
Policies and Regulations	-Opening companies; -Closing companies; -Foreign trade; -Contractual security; -Tax burden -General entrepreneurial support policies; -Specific programs for dynamic entrepreneurship support;	Ease of Doing Business GEM National Expert Survey

Source: Elaborated by authors based on ICSEd-Prodem 2016 (KANTIS; FEDERICO; GARCÍA, 2016)