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Chapter 1

Entrepreneurial ecosystems, learning regions, and the role of universities

1.1 Introduction

This chapter aims at discussing the role of universities in establishing entrepreneurial ecosystems, especially in terms of how learning regions, understood as development coalitions, can be used in the formation process. An entrepreneurial ecosystem, by generating value and distributing it among the members of the ecosystem, can create sustainable economic, technological, and societal impacts (Audretsch, Cunningham, Kuratko, Lehmann & Menter, 2019). To develop an entrepreneurial ecosystem, the concept of “learning region” contributes by pointing to the establishment of a strategy for long-term, bottom-up, and broad partnership-based development coalitions (Asheim, 2012). A learning region emphasizes cooperation and collective learning in regional networks resulting in the promotion of entrepreneurship and innovation, and, as a consequence, the creation of sustainable businesses (Asheim, 2012).

Universities as knowledge generating institutions have the potential of going beyond traditional support for entrepreneurship, focused mainly on the creation of academic spin-offs or licensing activities, towards promoting regional cultural change and network building activities (Pugh, Soetanto, Jack & Hamilton, 2019). That broadens the understanding of university engagement in a developmental role, which is based on the medium to long-term alignment of university capabilities with the needs of local actors (Marques, Morgan, Healy & Vallance, 2019). However, little is known of universities as the main drivers of the development of entrepreneurial ecosystems, especially in the context of emerging economies. This chapter will, therefore, fill this lacuna by analysing the role of universities in creating entrepreneurial ecosystems in emerging economies by exploiting learning regions as development coalitions. To answer this, we look into a case study of three universities in Southern Brazil that, by forming an alliance, decided to act towards the creation of an entrepreneurial ecosystem to contribute to promoting sustainable new and existing businesses. Specifically, we explore how the alliance of universities worked to establish a bottom-up, horizontally based cooperation between different actors, including the activities performed by universities’ leaders to mobilize regional stakeholders in the development of the ecosystem.

1.2 Universities, entrepreneurial ecosystems, and learning regions: Theoretical perspectives

There are studies about universities and entrepreneurial ecosystems which look at universities mostly as institutions with a supporting role as knowledge and human resources generators. A bibliometric review by Malecki (2018) shows that universities are the most frequently identified actor in entrepreneurial ecosystems after entrepreneurs but, as a matter of fact, the most important function of a university is still to provide highly skilled and specialized talents. Ierapetritis (2019), for instance, analyses the role of Greek universities in fostering entrepreneurial ecosystems, emphasizing their actions with the academic community as business incubation and education, guidance and counselling on entrepreneurship and innovation. Pugh et al. (2019) show that the university of Lancaster, in the UK, has taken a role of facilitating learning activities not only at the individual entrepreneurial level but also at the wider regional level, helping the development of the entrepreneurial ecosystem. Shaw and Allison (1999) go a little further and include the university's contribution to regional governance by its involvement in local regional and strategic planning processes. Their focus in Australia is on universities' contribution to regional development, by strategically positioning the region as a learning region in the knowledge economy. Some universities "act not only as educators but also as institutional entrepreneurs, proactively networking, shaping regional strategies and attempting to change local routines as well as national policies" (Raagmaa & Keerbergh, 2017, p. 270).

The ecosystem concept has become increasingly popular the last years, but often it has been used without any clear ideas of what it actually means. It is also often used interchangeable with regional innovation systems (RIS), and although there are similarities between these two concepts, they are different in many aspects. A RIS is constituted by two sub-systems, an exploration sub-system of knowledge generating and diffusing organizations such as universities, research organizations and technology transfer agencies, and an exploitation sub-systems of firms, often located in (regional) clusters, surrounded by an organizational and institutional support structure. A variant of the RIS concept is the triple helix construct (Etzkowitz & Leydesdorff, 1997), where the public sector adds to universities and industries on the same level as a key actor of the regional set-up, while the public sector in the RIS context is part of the organizational and institutional support structure. Both frameworks are most often a result of top-down planning initiatives as part of a public regional innovation policy, even if there are examples of organic developments of RIS, especially in regions with a long industrial tradition. Consequently, most examples of well-functioning RIS can be found in well-developed countries and regions with good governance and strong institutions, where trust and social capital provide the glue for a tradition of close public-private collaboration.

Ecosystems on the other hand are most often developed organically driven by innovative entrepreneurs and venture capitalists, as most typically seen in Silicon Valley and US science parks such as the Research Triangle Park in North Carolina. In addition to these two actors, universities, often with an explicit vision of becoming entrepreneurial universities with a strong focus on the commercialisation of research through IP rights is a third active organization of the ecosystem. In contrast, the role of universities in a RIS is broader than just commercialization of research, and contains also university–industry cooperation in general, as well as more specifically a mode 2 oriented research cooperation between universities and industries which often involves industrial doctorates and adjunct professors paid by industry (Trippel, Sinozic & Lawton Smith, 2015). Industry more generally is also part of an ecosystem, but more as springboards for new entrepreneurs and customers of entrepreneurs’ products and services, and the public sector has a more indirect role, as funders of universities and specific support agencies for entrepreneurs, research, and commercialization activities. An ecosystem is not normally a planned, top-down event, but organically developed in a bottom-up fashion. Cooke and Leydesdorff (2006) summarizes these differences talking about two forms of RIS, an Institutionalized RIS (IRIS), as we know it from European countries with a coordinated market economy (Hall and Soskice, 2001) as we described above, and an entrepreneurial RIS (ERIS), which we will call an entrepreneurial ecosystem.

Conceptually, this chapter draws on the entrepreneurial ecosystem concept from Spigel (2017): “combinations of social, political, economic, and cultural elements within a region that support the development and growth of innovative start-ups and encourage nascent entrepreneurs” (Spigel, 2017, p. 50), complemented by Stam (2015) who emphasizes entrepreneurship not only as the output of the system, but entrepreneurs as important players in creating a sustainable ecosystem. The relations among a set of interdependent actors and factors coordinated in a systemic way to enable productive entrepreneurship (Stam, 2015) can, given internal and external favourable conditions, lead to sustainable regional development (Volkman, Fichter, Klofsten & Audretsch, 2019).

Actions by connected previously independent actors targeted at regional development can be initiated and fostered by place leaders, who organize collective development efforts to benefit both the actors’ individual objectives and the objectives of the region (Beer et al. 2019; Beer & Clower, 2014; Grillitsch & Sotarauta, 2020). Place leaders have shown “an important position in regional development when policy makers and local governments fail to provide resources and support for innovation and entrepreneurship, which is a common reality in developing countries” (Thomas, Faccin & Asheim, 2021). In Colombia, Porrás-Paez and Schmutzler (2019) found that the Chamber of Commerce at Atlantico region acted as the articulating actor for the development of the entrepreneurial ecosystem, because it was perceived as a locally embedded trustworthy institution, independent from the government.

In the process for place leadership to mobilize the broad range of stakeholders, including NGOs and the civil society in addition to the private and public sectors, which were necessary to successfully build the alliance in Porto Alegre, the concept of the learning region as a development coalition can be helpful (Asheim, 2012). It represents a horizontal bottom-up co-operation between different actors in a local or regional context, based on a socially broad mobilization and participation of people (Ennals & Gustavsen, 1999). Our case study shows a region that aims at becoming a hub for innovation and entrepreneurship, but it lacks the previous step of actors' participation in networks. The universities in the alliance are working towards building localized, interactive learning, and cooperation. "Learning regions should be looked upon as a policy framework or model for formulations of long-term, partnership-based development strategies for initiating learning-based processes of innovation, change and improvement" (Asheim, 2001, p. 75). In the formation of learning regions, the role social capital and trust plays in promoting formal and informal interfirm networks and the process of interactive learning must be in focus, because trust can only be earned through repeated transactions (Asheim, 2001; Morgan, 1997). The development of new routines requires time, resources and, a collective vision of regional renewal (Morgan, 1997), which was exactly what the three universities managed to achieve by taking on the role of place leadership.

Factors that influence the development of entrepreneurial ecosystems are place-specific, and the geographic area shapes the nature of entrepreneurial activities (Audretsch and Belitski, 2017). The next session, therefore, presents the regional setting where the case Alliance for Innovation takes place.

1.3 Porto Alegre and the metropolitan region: Background for the alliance for innovation

The city of Porto Alegre is the capital of Brazil's southernmost state, Rio Grande do Sul, and has a population of 1.4 million people. Its metropolitan region covers an area of 6,900 square kilometres and hosts around 3 million inhabitants. The area houses a petrochemical cluster, manufacturing sites and innovation facilities of large international companies, such as General Motors, Dell Computers, Hewlett Packard, SAP, and Stihl. Although unemployment in the metropolitan region was reduced in 2019 compared to previous years, it still reaches around 10% (IBGE, 2020).

Rio Grande do Sul has a high level of development in Brazil, and the comparatively high level of education and strong academic environment are of particular importance in the region (The Swedish Agency for Growth Policy Analysis, 2016, April). That said, Porto Alegre has a strong tradition in the formation of human resources, although recently it has been difficult to retain talents (Zen, Gazzaro, Faccin & Gonçalves, 2018).

Fischer, Queiroz, and Vonortas (2018) explain that, in Brazil, knowledge-intensive entrepreneurship is concentrated in and around a few urban areas, with the presence of research-oriented universities functioning as a vector, however, urban disorders as theft and lack of adequate infrastructural conditions hamper the generation and attraction of knowledge-intensive new ventures. In a wrong manner, such overarching conditions are usually left out of discussions related to initiatives aiming at increasing entrepreneurial activity in Brazil (Fischer et al., 2018).

Another fact worth emphasizing about Porto Alegre is its strong tradition of entrepreneurship, which derives from its relatively late colonization consisting of European smallholders. “This group of wage earners, who came to Brazil on their own initiative in the hope of a new future, were not only skilled within their respective field, but were also constituted in a considerably more market-oriented context” (The Swedish Agency for Growth Policy Analysis, 2016, April).

As a matter of fact, it has been a long-term goal in Porto Alegre to develop an ecosystem that retains talents, supports new knowledge-based firms and fosters the renewal of big established firms. A programme called Porto Alegre Tecnopole (from 1994 to 2007) had the aim of transforming the metropolitan region into a knowledge-based economy. It was run by the city hall with the participation of universities, industry, and workers associations. Applying the triple helix concept (Etzkowitz & Leydesdorff, 1997), the initiative focused on creating the necessary conditions and support for the development of high technology firms through establishing technology parks, incubators, TTOs, and so on. The programme generated positive results, especially in developing science and technology parks (STPs) in the metropolitan region. As explained by Bencke, Dorion, Prodanov and Olea (2019), the development of STPs in the state of Rio Grande do Sul had a direct influence of political, business, and university leaderships, and happened as an endogenous development arising from the existing resources and opportunities of the territory and network. However, there were barriers for the programme’s sustainability, specifically the fact that it was run by the city government (Dienstmann, 2019), which led to the programme’s closure when there was a shift in mandates. Another barrier to Porto Alegre Tecnopole’s sustainable success was the fact that the private venture capital firm was not “closely linked to the formally planned elements of this cluster, preferring to work independently” (Tiffin & Bortagaray, 2008). The programme therefore had a strong reliance in public funding.

There was also an attempt in Porto Alegre towards building civic participatory budgeting for the distribution of municipal funds. However, after 20 years of operations, independently of the public administrations’ idealism, enthusiasm, and branding (Junge, 2018), the participatory budget did not manage to develop an ecosystem that was positive to economic growth, being centred on basic improvements, as paved streets, sewer investments, and school constructions, for example (Abers, 1998).

The case study we explore in the present chapter attempts to overcome some of the challenges previously faced by programmes towards the development of innovation ecosystems, as the short-termism of government mandates, civic participation led by governments, and the exclusion of issues such as public safety and infrastructure, which influences ecosystems that aim at retaining talents and benefitting the growth of new knowledge-based firms.

1.4 Method

This research took a qualitative approach, using a case study strategy, to analyse the role of universities in creating learning regions as development coalitions. Interviews were the main source of data collection, complemented by secondary data. In 2018 and 2019, we have interviewed 41 people from universities, the City Hall, industry associations, firms and people who represent organizations from the civil society. The interviews varied from 30 min to 1 h and were audio-recorded to allow further consultation. Researchers followed a semi-structured protocol with open questions. To ensure interviewees' anonymity, each one of them was assigned a random number, which we used in the description of the case. Secondary data was gathered from documents and from the media to complement information given by respondents.

The initiative called Alliance for Innovation, with the objective of fostering high impact actions towards advancing the entrepreneurial ecosystem in the region, is an articulation between three universities in the city of Porto Alegre:

- UFRGS (Universidade Federal do Rio Grande do Sul): publicly funded university, founded in 1934. Around 14,000 people are involved in research and technology development including bachelor and graduate students, laboratory technicians, professors, and visitors (UFRGS, 2020). Its technology park established in 2012 focuses on entrepreneurship training and start-up incubation.
- PUCRS (Pontifical Catholic University of Rio Grande do Sul): private non-for-profit university, founded by Marist Brothers (religious congregation) in 1948. It has more than 4,000 faculty and staff members, and over 170,000 alumni. Its technology park established in 2002, TecnoPUC, has 170 companies generating more than 8,000 jobs. The university accounts for 43 granted domestic patents, 36 international granted patents, and 34 registered software.
- UNISINOS (Universidade do Vale do Rio dos Sinos): private non-for-profit university, founded by the Jesuit Network (religious congregation) in 1969. Its technology park established in 1999, Tecnosinos, has 75 companies generating 6,000 jobs. Tecnosinos has 120 intellectual property registers. It has around 900 faculty members, and over 90,000 alumni.

1.5 The alliance for innovation

After the crisis of 2015–2016, where federal initiatives and support were non-existent, Brazilian regions were forced to find their own solutions to their problems (The Swedish Agency for Growth Policy Analysis, 2016, April). The metropolitan region of Porto Alegre needed to boost its economy, because, as some of the interviewees explained:

The state's economy is very dependent on agriculture so, if it doesn't rain, we are bad (I1);
The government doesn't have money to invest. The industrial manufacturing is not doing well. Our economy is based on old things, on things that are going to stay in the past, so if we don't innovate, we are done, we are dead (I2);

One of our weaknesses is regarding raising funds for innovation and start-ups (I3).

In 2017, with a new mandate in Porto Alegre's city hall, a new economic development public policy was created, especially aiming to promote innovation and entrepreneurship. The city's Innovation Council was led by the rector of PUCRS, who was also the president of the Latin American Division of the International Association of Science and Technology Parks and Areas of Innovation (IASP). This shows the proximity of universities to the regional government regarding innovation. In Brazil, universities are crucial for the success of technological initiatives because science and technology infrastructure are mostly localized at universities (Lahorgue & Cunha, 2004).

Through his role at IASP, he had contact with Josep M. Piqué, a Spanish consultant on developing ecosystems for innovation and entrepreneurship (IE), who was invited to deliver a seminar for the Innovation Council of Porto Alegre. Key regional stakeholders were invited for the seminar, where they started discussing the future of the city. Leaders who were involved in the previous Porto Alegre Tecnopole Program and new stakeholders continue to work for the development of the IE ecosystem "by assuming new roles in the institutions or by assuming functions in different institutional spheres" (Bencke et al., 2019).

A problem to the development of this project was the lack of trust from the business community in the public administration. As some of the interviewees comment:

Municipalities, not only in Porto Alegre but in Brazil, are more concerned with politics. And companies don't want to take part in one side and another. Public bodies at this moment don't have (I am going to use a strong word) credibility from the business community (I4);

Government people have different ideologies, and ideologists criticize each other. Another problem is that they are thinking only for 4 years because they are in government for just this period. No one thinks beyond their time (I5).

For reasons such as these, the three main universities in the region offered to jointly coordinate a project to mobilize the business community to improve and boost an innovation and entrepreneurship ecosystem. The universities' long tradition of triple-helix partnerships for innovation and of positive impacts on society rendered

them a trust-worthy place in the region. Formalized in 2018, the Alliance for Innovation has been the driving force of the IE ecosystem development in Porto Alegre.

Important activities in different realms were necessary to start the project, such as financing, communicating with the community and, most importantly, mobilizing stakeholders and having them committed to participate. Therefore, the first joint effort by the three universities was to engage companies, industry associations, the civic society, public authorities, and other institutions to make them part of the project, which was not easy.

The lack of trust and collaboration culture among regional actors was pointed out by several interviewees:

A weakness here is people's mindset. Some people just don't want to help; they only think on their own firms (I6);

People are always fighting with each other. We have two football teams. People are really fanatic about their teams. If you are from one, I don't like you. Some people get a little radical. We have the same with politics (I8);

First, we don't have the give back concept. Most of the people that made money in the past don't live here anymore. They move to Sao Paulo or abroad. And most of the companies move to Sao Paulo when they get bigger. So, they can't give back to the community. The second weakness of the region, for some cultural reason, people just want to work by themselves, they don't want to cooperate (I2);

We are very polarized in this state. As a result from the Alliance, in the short term, I expect we move towards a common centre (I1).

For around 6 months, vice-chancellors from the 3 universities met more than 80 entrepreneurs, businessmen, and industry associations in the region to present the Alliance and motivate the stakeholders to participate. One of the initial big achievements, that allowed the economic sustainability of the project, was to get the support of three banks, Sicredi, Agibank, and Badesul, to provide funds to hire the Spanish consultant, who became the mentor for the project's progress.

In addition, the biggest local media company got on board. By that, the main newspaper started writing about the need for innovation and entrepreneurship as a solution to overcome the region's socio-economic challenges. The discussion in the newspaper helped to mobilize the broader community. The wishes of the local businessmen and entrepreneurs were broadcasted, stressing that they wanted a region where social, environmental, and economic concerns were met.

The strategy for raising awareness in the region and engaging more actors worked well. People started to be willing to work together to guarantee sustainability in the economy and social environment in the long term. This could be seen on an open event in which more than 600 people showed up at Unisinos University on a Wednesday morning in July 2018. Representatives from the government, the media, start-up incubators, technology parks, researchers, businessmen, industry associations, and other organizations that were interested in developing the IE ecosystem in the city

were invited to “build the future of Porto Alegre together.” The mayor of the city attended the event with around 200 employees from the city hall to show his support for the project. The speakers presented examples of functioning IE ecosystems abroad and in other places in Brazil, where the society collectively developed the regions to be positive to sustainable businesses and to be better in terms of quality of life for its citizens.

The event’s attention from the media raised the motivation and engagement from many actors. From that moment on, the Alliance for Innovation formalized a Board of Directors formed by 75 institutions (6 universities, 5 other educational institutions, 1 start-up incubator, 5 start-ups, 15 large firms, 33 business associations, 1 non-governmental institution, and public administration agencies). This coalition established an executive group and officialized a partnership with the city hall (entitled Pacto Alegre agreement) to realize practical projects addressing the regional socio-economic needs.

The initial result from the direct involvement of universities in the development of the IE ecosystem is the engagement and formal commitment of the banks, the City Hall and other institutions who signed the agreement to be part of the Board of Directors. Participants’ expectations reveal that indeed people trusted the universities to drive the creation of a learning region based on collaboration and trust among the actors:

In the short term I think we can get a very spread mobilization from people that were previously working alone and separately, as everyone is now getting together, and the subject is getting stronger. Also, we can bring some investments as well because of the changes in this environment (I3);

The initial result will be the common view for the future. Through this common view in the long-term we can make changes regarding living conditions and the mobility, and then we can build this entrepreneurship ecosystem that could change the scenario of the city (I7);

For the very long term, I hope for a cultural change, helping each other, making partnerships, working together, this is the most important contribution that the project can bring. This can be a game-changer for us (I2).

1.6 Legacy: Power delegation to the community

With the officialization of the executive group, formed by professors, PhD students, and members of City Hall, the universities began transferring decision-making and the operation of projects to the network of stakeholders (Thomas, Faccin & Asheim, 2021). This network is self-organized, and its executive group functions as a facilitator of activities.

The initial initiatives from the network were to run a series of thematic workshops, where 135 participants from civil society, universities, government, and firms

gathered to discuss the current conditions of the city and to plan new actions. The result was a definition of six grand challenges of the local IE ecosystem: City Identity; Modernization of Public Administration; Education and Talents; Business Environment; Urban Transformation; and Quality of Life. The participants created 24 initial projects to address the challenges. By targeting these six areas, the coalition aims at creating a better city for citizens and an ecosystem where entrepreneurship and innovation will flourish.

The current step of the ecosystem development in Porto Alegre has been the operation of these hands-on projects within the Pacto Alegre agreement. The projects are being run simultaneously by different groups, and some participants are involved in more than one project. Some projects have a long development period, for example, the integration of health data, that will unite information about a patient from different public hospitals and clinics, and the improvement of tap water, which currently follows all health and safety regulations, but could have a better taste by using less chlorine. Four professors from UFRGS are collaborating with the municipal water department on an 18-month pilot test for a new treatment method (Vargas, 2019). Another example is a crowdfunding portal, initiated by Badesul, the regional development bank, focused on early-stage start-up using the equity crowdfunding strategy.

After one year of Pacto Alegre execution, results can be seen from the initial projects that were doable in a short-term period, for example, training public employees on start-up culture and innovation ecosystems, within the grand challenge “Modernization of Public Administration”; targeting the challenge of “Education and Talents,” all the students from public schools have watched a movie on entrepreneurship and innovation; within the grand challenge “Business Environment,” the mayor of Porto Alegre launched an Innovation Fund, aiming at fostering the implementation of disruptive projects and accelerating start-ups that contribute to improve the quality of public services (Pacto Alegre, 2019). In addition, new projects have been established by the network of stakeholders, focusing on other needs that were identified. Through transferring the decision and execution regarding hands-on projects to the network, the three founding universities of the Alliance for Innovation managed to delegate power and share the decision-making with the broad network of stakeholders involved with the goal of developing the ecosystem towards innovation and entrepreneurship.

Figure 1.1 illustrates the case of the Alliance for Innovation. The bottom-up development of the entrepreneurial ecosystem had as the point of departure the regional weaknesses felt by the community, and the awareness of the need for a broad movement. The three universities took on a place-leadership position for the creation of the development coalition which, through self-organized hands-on projects, is now running the operations.

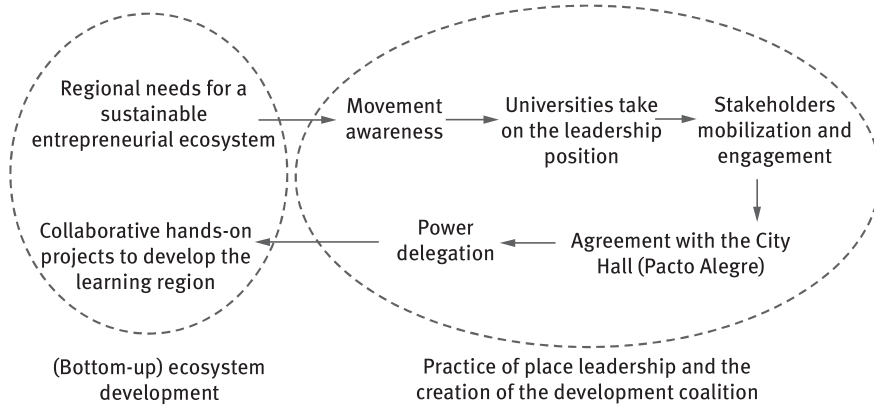


Figure 1.1: Framework of the bottom-up development of an entrepreneurial ecosystem by universities as place leaders.

1.7 Discussion and conclusions

By analysing the role of universities in entrepreneurial ecosystems using a case study from Southern Brazil, our research shows that the Alliance was responsible for a combination of approaches that could imply a bigger role in emerging economies for the institutions developing the ecosystems applying a bottom-up learning region approach. An emerging economy, such as Brazil, where good governance, solid institutions and a long tradition of collaboration are not clearly present, does not offer the best conditions for planning and building an RIS in a top-down way. On the other hand, there is neither the presence of dynamic and knowledge-based entrepreneurs and venture capitalists as found in the USA, nor the well-founded, private research university as Stanford and MIT are typical examples of. Therefore, ecosystems being more bottom-up and a result of an organic formation fit better with the possibilities found in a Brazilian context. Thus, in this chapter we argued that a modified ecosystem concept is what works best to describe what took place in Porto Alegre around the alliance initiated by the three largest universities in the region.

The modifications of the ecosystem concept concern the three most important actors of the systems, the entrepreneurs, venture capitalists, and universities. In addition to what is already highlighted above concerning entrepreneurs and venture capitalists, it is necessary to enlarge the idea of who can be an entrepreneur from the innovative entrepreneur in the business sector, as is the common view of the ecosystem concept, to also include institutional entrepreneurs and place leadership, which is termed the “trinity of change agency” (Grillitsch & Sotarauta, 2020). The broader conceptualization of what should be understood as entrepreneurial activities has also implications for the role of these universities, which goes far beyond

the functions of an entrepreneurial university to take on the comprehensive roles of an engaged or civic university (Goddard, 2016; Trippel et al., 2015).

As we see in the case of the Alliance, the universities' vice-chancellors demonstrated institutional entrepreneurship by engaging in this task, which goes beyond the normal focus of universities on teaching and research, and also beyond the normal types of third mission activities. It is noticeable that this has been carried out by three universities which normally are competitors, as is also the fact that they together have acted as place leaders in addressing regional economic and social needs (Thomas et al., 2021). In a climate of lack of trust and collaboration in both the private and public sectors, the place leadership role could be taken on by the universities as they were the only organizations that had sufficient trust and legitimation from the general public, due to respect earned by their teaching and research activities. Important here is also the fact that two of the three universities are catholic institutions, which shows the established position of the catholic church in Brazilian higher-education by adding a stronger social dimension to universities' regional engagement and impact (Thomas & Pugh, 2020). Finally, the use of learning regions as a strategy to build an innovative ecosystem is also a novel aspect in emerging economies, with potentially important policy implications for bottom-up development initiatives. Therefore, the main finding from our study is the need for strong place leadership and the creation of learning regions in a bottom-up effort to promote the development of an entrepreneurial ecosystem in emerging economies.

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