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Roles of institutional actors in the social technological business ecosystem: evidence from Campina Grande - PB

Papéis dos Atores Institucionais no Ecossistema de Negócios Tecnológicos de Impacto Social: evidências de Campina Grande - PB

Tayze Cristine Araujo Aguiar[ai]
Orcid: https://orcid.org/0000-0003-2700-1698

Vinicius Farias Moreira[bii]
Orcid: https://orcid.org/0000-0002-4473-8766

Abstract

Social Businesses (SB) are companies that aim to solve social problems generating a positive impact on society, with a vision of the market and financial sustainability. Considering the increasing relevance of the socio-environmental agenda in technological businesses, this study aimed to map institutional actors' roles in the social technological business ecosystem in Campina Grande - PB. The theoretical basis discusses the innovation ecosystem and the SB. This is a qualitative descriptive case study whose data collection occurred through document analysis, unstructured interviews and participant observation. The results showed a mapping of the institutional actors and their roles in the analyzed innovation ecosystem. This is considered one of the most significant contributions of the research, solving part of the problem of the lack of information, valuable to current and future SB, and institutional and public actors involved. Furthermore, this study's results may complement a collaborative platform of business players with an impact on development in the city, the I-Balaio.
Key words: innovation ecosystem; social business; institutional actors.

Resumo

Os Negócios de Impacto Social (NIS) têm surgido objetivando solucionar algum problema social gerando impacto positivo na sociedade, com visão de mercado e sustentabilidade financeira. Considerando a crescente relevância da pauta socioambiental nos negócios tecnológicos, esse estudo teve como objetivo mapear os papeis dos atores institucionais no ecossistema de negócios tecnológicos de impacto social em Campina Grande – PB. A base teórica discute acerca do ecossistema de inovação e do ecossistema dos NIS. Trata-se de um estudo de caso qualitativo descritivo, cuja coleta de dados ocorreu por meio de análise documental, entrevistas não estruturadas e observação participante. Os resultados apontaram um mapeamento dos atores institucionais e seus papeis no ecossistema de inovação analisado. O estudo traz uma contribuição descritiva valiosa aos NIS atuais e futuros, assim como aos atores institucionais e públicos envolvidos.
Palavras-chave: ecossistema de inovação; negócios de impacto social; atores institucionais.

[a] Universidade Federal de Campina Grande, PB, Brasil. E-mail: tayzearaujo.adm@gmail.com
[b] Unidade Acadêmica de Administração e Contabilidade / UAAC e Programa de Pós-graduação em Administração PPGA/UFCG, Brasil. E-mail: viniciusfmoreira@yahoo.com.br

1 INTRODUCTION

Innovation ecosystems are a set of interdependent local actors with dynamic processes (Russel et al., 2011; Ikenami, Garnica & Ringer, 2016) so that they provide conditions for the development of innovations (Audy & Piqué, 2017), contributing to regional development on a small and large scale.

Regarding the studies on innovation ecosystems, the Quadruple Helix proposed by Caraynnis & Campbell (2009) and Carayannis & Rakhmatullin (2014) emerges. It recognizes society as an essential part of the innovation ecosystem. It is at the centre, seen as a driver of innovation processes, co-developers, and co-creators of innovation. Also corroborating the sense of Social Business that aims to interfere in socioeconomic spheres, integrating the different actors, be they impacted or impacting, always searching for innovation, financial performance and social transformation (ICE; FTFS, 2015). These changes around economic and social development are increasingly demanding a reorganization of the actors involved to maintain the competitiveness of the regions and create value - economic and social.

The Social Business (SB) is seen as an innovation that appears to minimize and/or solve social and environmental problems existing in a given location, having a market view and financial sustainability (Dees, 1998; Comini, 2016; Petrini, Scherer, & Back, 2016), operating in competitive markets (UNDP, 2015). It has been observed that there are advances in research on SIB. However, it is perceived that there are still few studies on the ecosystem in which these businesses are inserted. An example would be the one developed by Silva & Iizuka (2018), in which they make a mapping of this type of business at the Brazil level, including similar businesses. Research is carried out by institutions that work directly with this type of business, such as Pipe.Social, Instituto de Cidadania Empresarial (ICE), Task Force on Social Finance, but their studies have different focuses and are more comprehensive.

Through a survey carried out by the Incluir Initiative (Brazil, 2015) with entrepreneurs and public managers, it was observed that the main challenges for the development of social businesses in Brazil revolve around the lack of information about the market, the support mechanisms existing regulations, inefficient regulations, failed infrastructure and access to financial instruments (UNDP, 2015).

Understanding that the social technological business ecosystem is under construction and based on the premise that institutional actors have an essential role in developing this ecosystem. Consequently, in the context of regional development and the gap observed in this ecosystem related to the lack of information, we can see the importance of identifying who these actors are and how they can generate the necessary development in the region where they are located.

Campina Grande has gained prominence in the scope of regional development. It is recognised as a centre of technological, scientific and educational development, having large industries, laboratories, research centres, and technological parks, emphasising the Technological Incubator of Creative and Innovative Enterprises of Campina Grande ITCG. One of the recently recognised benchmarks, at a national level, in supporting Social Business by the Instituto de Cidadania Empresarial (ICE), one of the leading national players in promoting social businesses.

Once identified, the gaps present in the research on social business, the scarcity of studies on its ecosystem and the practical relevance for the region, this work aimed to map the roles of institutional actors in the social technological business ecosystem in Campina Grande - PB. A qualitative

descriptive case study was carried out, whose sources of collection were participant observations, unstructured interviews and documentary analysis. The data were compiled and treated through content analysis. The study continues with the theoretical discussion.

2 INNOVATION AND SOCIAL BUSINESS ECOSYSTEM

The concept of "ecosystems" has received a lot of demand in recent years, being seen as a new way to outline the competitive environments (Jacobides, Cennamo & Gawer, 2018). The company must monitor those to develop its dynamic capabilities and build a sustainable competitive advantage (Teece, 2007).

According to Ikenami, Garnica and Ringer (2016, p.4), "ecosystem is a construct, highlighting the interdependence of actors who seek a common goal, to create or capture value from a perceived opportunity". These provide conditions for innovation to flourish, generating more and more changes in society and their lifestyles; ecosystems tend to be in continuous growth, adaptation and evolution, just as they are with living organisms (Audy & Piqué, 2017). The existing relationships within the ecosystem contribute to members' engagement, additional gains for the parties involved, and the attractiveness of new actors (Russel et al., 2011; Jacobides, Cennamo & Gawer, 2018).

Advancing in studies on innovation ecosystems, the Quadruple Helix proposed by Caraynnis & Campbell (2009) emerges, recognizing society as an essential part of the innovation ecosystem, being at the centre. It is also seen as a driver of innovation processes, in which new services, products and processes start to be developed based on their demands and their involvement, not only as a user of innovation but also as a co-developer and co-creator of it. Thus, the three other propellers - companies, universities and the government (Etzkowitz & Leydesdorff, 2000) - must contribute with encouragement, investment, information and support to develop innovations.

The Quadruple Helix aims to contribute to the strengthening and connection of those who create value (Carayannis & Rakhmatullin, 2014), thus relating to the purpose of the Social Business, which integrates the various actors of the ecosystem, whether impacted or impacting, seeking innovation, economic performance and social transformation looking back to society (ICE; FTFS, 2015; Arnkil et al., 2010; Nordberg, 2015). For the Propeller Model to be even more effective, authors like Johnson (2008) and Steiber & Alange (2013) present that Innovation intermediaries are a way to assist in the development of interactions and connections between propellers, as well as between the ecosystem and its external environment, forming bridges between them.

In general, it is expected that an ecosystem generates entrepreneurship and innovations, which are essential to deal with the competitiveness of the environment and the economy, since the knowledge accumulated through the cooperative relationship between the actors contributes to the development of collaborative platforms, establishment of alliances strategic, new technologies, products, services and business attraction, with impacts on regional development and increased economic potential (Spinosa, Schlemm & Reis, 2015).

In this sense, Social Businesses - also called social businesses, social companies, hybrids and/or inclusive businesses - can be identified as an innovation that appears to minimize and/or solve existing social and environmental problems in a given location through market view and financial sustainability (Dees, 1994; 1998; Marquez et al., 2009; Thompson & MacMillan, 2010; Teodósio & Comini, 2012; Nascimento et al., 2012; Rahman & Hussain, 2012; Wilson & Post, 2013; Kyama, Comini & D'Amario, 2014;

Barki, 2015; Comini, 2016; Petrini, Scherer & Back, 2016), working in competitive markets (UNDP, 2015). Edwards-Schachter and Wallace (2017) understand that social innovations involve civil society's participation in the production of social change aimed at solving unmet social needs and complex problems. Thus, it is understood that this type of business - more than traditional companies - must work inclusively with its stakeholders for the market to function in the same way.

The SIB ecosystem involves a network of interdependent and interconnected actors so that these relationships favour business success and generate more significant impacts (UNDP, 2015). Various actors present in the social business ecosystem (Teixeira et al., 2016) (UNDP, 2015) that work in their favour.

The institutional actor receives a greater focus in this study before others, being understood as the rules of the game in a society, or even as human origin restrictions that shape interactions within society directly related to individuals' behaviour. Institutions can influence differently, positively or negatively the country's social and economic activities (North, 1990). Thus, institutional actors are classified into four categories, as shown in Table 1, which described more clearly what they are and their characteristics.

Table 1 - Institutional Actors of the SIB Ecosystem

Actor	Features/Contributions
Government Institutions	Defining and implementing agent for public policies and market incentives, suppliers of mechanisms and programs, regulations and incentives.
Teaching Institutions	Research institutions, universities, responsible for training people promoting the entrepreneurial spirit and trained human capital.
Financial Institution	Banks, suppliers of financing mechanisms, public calls.
Intermediary Institutions	Incubators, accelerators, technology parks, collaborators in the dissemination of the culture of entrepreneurship and innovation.

Source: Adapted from Teixeira et al. (2016) and UNDP (2015).

Recognizing the classification of the actors described in Table 1, through the Social Business Ecosystem Diamond (UNDP, 2015), the four roles that the actors have within this are presented: the role of information, incentive, investment and Implementation. Actors can still act in more than one role. Table 2 characterizes the roles of actors in the social business ecosystem.

Table 2 - Roles of the social business ecosystem actors

Roles	Characteristics
Information	It provides SIB with the awareness, knowledge, technology and know-how necessary to operate in their markets.
Incentives	It provides the impetus for companies to engage with communities at the bottom of the pyramid, rewarding positive externalities and reducing the cost of doing business.
Investment	It provides the financial support that allows companies to venture into challenging low-income markets.
Implementation	It provides logistics, operation, marketing and communication and support services that enable inclusive companies to operate in dynamic environments.

Source: Adapted from UNDP (2015).

According to the survey conducted with entrepreneurs and public managers by the Incluir Initiative (Brazil, 2015), it was seen that the main challenges for developing this type of business in Brazil are related to the lack of information about the market, mechanisms of support, inefficient regulations, failed infrastructure

and scarce access to financial instruments (UNDP, 2015). The next topic is dedicated to presenting the research methodology.

3 METHODOLOGY

This is a qualitative descriptive case study. According to Merriam (1998) and Patton (2002), detailed descriptions of the analyzed phenomenon are generated by observing data patterns and creating categories capable of illustrating the aspects theorists confirm or opposing. The case under analysis is the social technological business ecosystem in Campina Grande. Its starting point is the Technological Incubator for Creative and Innovative Enterprises of Campina Grande (ITCG) recognition of a key actor in the city's NIS ecosystem. In 2017, ITCG was recognized as a national reference incubator in supporting social businesses, an award ensured by the Instituto de Cidadania Empresarial (ICE) in conjunction with Sebrae Nacional and Anprotec.

Multiple sources of data were used, including documentary analysis, interviews and participant observations. The participant observations stem from the professional involvement of the authors of this work. They held positions of direction and advice in the technical area of ITCG and Fundação PaqTcPB in the years 2017 and 2018, which facilitated access to data and the actors involved. Although the data collection for this research took place in 2019, field notes resulting from the authors' professional performance were consulted, which supported the understanding of the phenomenon. Regarding the interviews, they were of the unstructured type, seeking to complement the authors' knowledge of the phenomenon and involved the incubator manager, a director and a technical advisor. These interviews had a short duration, less than 20 minutes. According to Eisenhardt and Graebner (2007) and Yin (2016), multiple data sources contribute to good qualitative research. Table 3 illustrates the study's methodological design, involving type, scope, unit of analysis, data collection procedures, and data analysis.

Table 3 - Methodological Design of the Study

Survey type	Descriptive qualitative case study			
Scope	Roles of Institutional Actors			
Analysis Unit	Campina Grande's Social Technological Business Ecosystem			
Methods for data collection	Document analysis (public and private documents), participant observation and unstructured interviews			
	Why?	What?	How?	Then?
Document review (2018-2019)	There is a lot of public information that has been supplemented by internal reports.	Sites, technical reports, brochures, various newsletters, social networks and other institutional documents.	Selection of helpful material for the research to assign the actors to the analyzed categories.	The obtained information was categorized, opening the way for a descriptive analysis.
Participant observation and unstructured interviews	To complement the documentary analysis, information related to participant observation and unstructured	The authors held positions in the ITCG technical team, facilitating access to documents and institutional representatives.	The participant observation took place between 2017 and 2018. The unstructured interviews took place in 2019 to	The information was coded for analysis.

	interviews were considered.	Field diary information was extracted from their notes. Three unstructured interviews were conducted with directors and managers from some of the mapped institutions.	confirm and complement the information obtained and lasted an average of 25 minutes.
Data analysis	The data were examined, classified and combined to identify evidence. This research opted for content analysis (Bardin, 1995).		
Research rigor/quality	The data comes from different sources, and triangulation was possible.		

Source: Adapted from Larrinaga Villarreal (2017), Yin (2016) and Zhang e Shaw (2012)

As indicated in Table 3, the documents' analysis favoured public information complemented by internal documents from ITCG or other partners. To facilitate the monitoring of the role of the actors involved in this research, Table 4 indicates the primary documentary sources used.

Table 4 - Documentary sources of field research

Institutional Actor	Institutional website
ANPROTEC	https://anprotec.org.br/
ARTEMISIA	https://artemisia.org.br/
Banco do Nordeste	https://www.bnb.gov.br/
BNDES	https://www.bndes.gov.br/
EMBRAPA	https://www.embrapa.br/algodao
EVL	https://www.lourdinascg.com.br/
FAPESQ-PB	http://fapesq.rpp.br/
FINEP	http://www.finep.gov.br/
Fundação PaqTcPB	https://www.paqtc.org.br/
Governo do Estado da Paraíba	https://paraiba.pb.gov.br/
IACOC	http://www.iacoc.org.br/
IFPB	https://www.ifpb.edu.br/
INSA	https://portal.insa.gov.br/
ITCG	http://itcg.org.br/
PMCG	https://campinagrande.pb.gov.br/
SEBRAE	https://www.sebrae.com.br/sites/PortalSebrae/ufs/pb?codUf=16
SENAI	https://www.fiepb.com.br/senai/
UEPB	http://www.uepb.edu.br/
UFCG	https://portal.ufcg.edu.br/

Source: survey data (2020)

Data analysis was done through content analysis (Bardin, 1995), being explored, categorized and then combined to identify the evidence. The classification of

the mapped actors' roles was made based on the roles of the actors in the social business ecosystem proposed by UNDP (2015), which comprises the roles of Information, Incentive, Investment and Implementation.

Theoretical and methodological triangulation required constant reflection on the researchers' part, with saturation occurring as the buildings became more robust and stable. As expected for qualitative research, the codification process was marked by comings and goings. It was an iterative process that helps to adjust the analysis categories and establishes a more elaborate research design (Yin, 2016; Gioia, Corley & Hamilton, 2013; Zhang & Wildemuth, 2016). Scientific rigour and analytical depth were present in the data analysis, probably the most challenging phase in developing a qualitative case study (Yin, 2016; Patton, 2002). Finally, a member check was built that identified the actors and their roles as a synthesis of the findings and sent for evaluation by five regional experts on the subject. Adjustments were made to consolidate the analyzes, and the information was, once again, validated. The study continues with the presentation of the results.

4 RESULTS AND DISCUSSIONS

Based on the classification of roles played by institutional actors within the social innovation ecosystem pointed out by UNDP (2015), the institutions present in the SIB ecosystem of Campina Grande were categorized in the roles of information, incentive, implementation and investment.

As a result, the mapping carried out in the city resulted in twenty-one institutional actors present and active within the social ecosystem. These actors were then classified according to the roles identified. Table 5 presents the mapped actors related to the role they play in the SIB ecosystem.

Table 5 - Roles of institutional actors in the SIB ecosystem in Campina Grande.

Role	Support Type	Institutional Actor
Information	They provide knowledge, training, technology (laboratories) and manpower.	UFCG, UEPB and other IES
	They provide technical training, knowledge and manpower.	IFPB, SENAI, EVL
	Provide mentoring, advice and digital content, access to national and international partners and information for business creation and development.	ITCG, IACOC and Sebrae
	Provides research support, articulation with partnerships, training, dissemination and popularization of knowledge.	INSA
Incentives	They provide incentives such as exemptions, actions and promotion of events.	PMCG,Government of the State of Paraíba
	It promotes individual events and in partnership with other actors.	Sebrae, Fundação PaqTcPB, Fapesq-PB
	Incentive and promotion events, individually and in partnership with other actors.	ITCG, IACOC
Investment	Provides investment in technological projects through grant calls (Tecnova and Centelha).	FAPESQ/FINEP
	Provides financial support through Sebrae Inovação and SebraeTec.	SEBRAE
	Provides financial support for the development of the region	Banco do Nordeste e BNDES
Implementation	It contributes to the physical structure, support services and interaction with other actors.	Fundação PaqTcPB, ITCG, CITTA

	Development of research and development and carrying out promotional actions involving local and national actors.	EMBRAPA
	It provides support for the operation of companies such as mentoring, advisory services, infrastructure, marketing, access to public notices, among others.	ITCG, IACOC, ARTEMÍSIA,
	It provides know-how for adapting incubators to provide their services to businesses.	ANPROTEC

Source: Field research (2020)

The study follows with the description of each group of actors that are active in the social business ecosystem of the city of Campina Grande.

4.1 Information Role

The actors who have an information role provide the SIB with the knowledge, awareness, technology and know-how necessary for businesses to operate in their markets (UNDP, 2015). Campina Grande is recognized as a university's city for many public and private higher education institutions and a technological and digital pole of reference in Brazil. Below we present the actors belonging to this category, their characteristics and their performance.

Campina Grande has a campus of the Federal University of Campina Grande (UFCG) and State University of Paraíba (UEPB), a campus of the Federal Institute of Paraíba (IFPB), some private universities, technical and vocational schools. In addition to undergraduate and graduate education, laboratories, research and extension activities are naturally channelled to the city's innovation ecosystem, part of which is more strongly related to the theme of social impact.

The atmosphere of the city's innovation ecosystem already has good repercussions in high school, such as the Lourdinas Challenge of Entrepreneurship and Innovation (DLEI). The project seeks to develop high school students' entrepreneurial attitudes, which are divided into teams and motivated to associate innovation with the exercise of social responsibility. It was the national winner of the Sebrae Entrepreneurial Education Award 2019, in the High School category (EVL). The projects were associated with the 17 Sustainable Development Goals.

The Technological Incubator for Creative Enterprises of Innovators from Campina Grande (ITCG) and the Agribusiness Incubator of Cooperatives, Community Organizations, Associations and Rural Settlements in the Paraíba Semiarid Region (IACOC), in the role of providing information to the SIB in the incubation process, internal and external advisory services for developing strategies, financial, legal, technological guidelines, digital content, as well as access to national and international partners. The National Semi-Arid Institute (INSA) comprises the actors who have an information role, providing support for research, articulation with partners, training, dissemination, and popularization of knowledge.

The Technological Incubator for Creative Enterprises of Innovators of Campina Grande (ITCG) and the Incubator of An interesting perspective to be considered is that the connections do not end in the locality. The network of relationships and impetus present in the innovation ecosystem also impacts when analyzing the social sphere. An example of this is the connections between the Instituto de Cidadania Empresarial (ICE) and ITCG, an incubator with a nationally renowned award supporting NIS. The gains from this partnership enable actions of significant local impact. As a powerful national player in supporting SIB, ICE has promoted activities in the city that bring information

flows, mentoring, and other ways of boosting social institutions and businesses. An example of this is the action with local partners to promote the Social Impact Finance and Business Forum, an event that runs throughout Brazil.

> This event is very rich in specific information for social businesses. It brings together the most diverse local and national actors working directly in promoting, and developing this type of business, contributing both to those who want to undertake in the area and those who already undertake and support them. There are still business roundtables, conversations with investors and specific mentoring. Another fascinating point in this event is the high level of connection between actors in the SIB ecosystem and the easy access for all interested parties (note of participant observation).

Finally, Sebrae contributes to business development by offering support, connections, and numerous monthly courses and workshops not specifically for SIB but involving topics relevant to any business.

UNDP (2015) states that one of the main gaps in the social business ecosystem is the lack of information. Thus, the first analysis made here is that in the SIB ecosystem of Campina Grande, countless actors provide different types of information for businesses. However, it was noticed that there are few actors with the know-how and expertise to contribute to the development of SIB specifically. Yet, few entrepreneurs know who these actors are and how they can support them.

> We have observed that people, entrepreneurs, do not know what they have in the city to help them develop their businesses. It would be very interesting if there were a map, a study, something that could guide these entrepreneurs where to go, which is the right institution that offers what they need at the moment. (ITCG Manager).

This finding is consistent with the UNDP (2015) in portraying the need to highlight support networks for social businesses.

4.2 Incentive Role

The actors that have the incentive role within the SIB ecosystem provide the impetus for companies to get more involved with their market, promoting moments to raise the interest to undertake or support this type of business (UNDP, 2015).

Reports from participating observations highlight the importance of Sebrae in its role as an incentive. It was verified through the organization of events in conjunction with other institutional actors in the ecosystem, such as the innovation from Cabo a Rabo, which had its first edition in 2019, to promote interaction between actors in the city's innovation ecosystem. The event sought to encourage innovative entrepreneurship with panels, lectures and other attractions to discuss creative themes in several areas, including many of interest to the NIS. The I-Balaio platform was also launched at the event, aiming to connect investors, companies, mentors, universities, startups and the most varied actors where information about them can be found.

These results confirm Spinosa, Schlemm & Reis (2015) 's statement that an ecosystem is expected to generate entrepreneurship and innovation. The collaborative relationship between the actors contributes to developing collaborative platforms and new technologies impacting regional development and increasing the economic potential.

The city's Department of Science, Technology and Innovation (SCTI) is also part of this group and promotes the Workshop for Startups, which is already in its seventh edition. As it is possible to analyze in institutional dissemination material and reports of participant observation, it is an event that aims to encourage entrepreneurship, networking

between investors and startups, and the discussion of topics related to the innovation ecosystem.

The ITCG, in the role of Incentive, along with other partners of the ecosystem, carries out actions such as the Startup Weekend Campina Grande Social Impact event, which, unitedly with the Meetups that precede the event, aim to encourage innovative social entrepreneurship in the city. According to internal institutional documents, the ITCG, which has always been vital in supporting technological businesses, sought the path of support to the SIB, influenced by the increasing launch of new funding notices at the national level. As a result, it started to specialize and seek improvement in actions and training to provide better support for this type of business and encourage the city's ecosystem around the social agenda.

4.3 Investment Role

The actors who play the investment role within the SIB ecosystem provide financial support so that businesses can develop their products and services (UNDP, 2015).

The Paraíba Research Support Foundation (FAPESQ-PB) works directly with research and development projects linked to the university, in addition to promotion notices such as Centelha and the Tecnova program, which aim to support the development of processes and/or innovative design products contributing to the economic subsidy.

The Financier of Studies and Projects (FINEP) contributes through economic grant notices and fosters scientific and technological development for companies, universities, and institutes to develop their technical and innovation projects. This access occurs through the intermediation of other institutions, such as the Fundação PaqTcPB and FAPESQ-PB.

Sebrae, in its investment role, takes part in it through calls from Sebrae Inovação. It aims to foster and develop creative and innovative businesses, and SebraeTec, which offers micro and small entrepreneurs services focused on innovation in the most diverse areas, subsidizing a part of the value of the projects, having a bank of specialized consultants to provide technical assistance, process improvement, among others. The PaqTcPB Foundation intermediates these accesses. This category also includes Banco do Nordeste and BNDES (National Bank for Economic and Social Development), which provide lines of credit, microcredit and financing with specific benefits for the development of micro and small businesses.

The results of this section reinforce Steiber & Alange (2013) statements about the importance of innovation intermediaries in the innovation ecosystem as an aid to the development of connections between the actors. This case allows SIB access to programs and notices promoted by these other actors, often with national actions. These findings corroborate with the UNDP (2015) regarding the essentiality of an articulation between the actors to enhance the ecosystem's development.

It was also seen that, although four actors have been identified as having an investment role within the ecosystem, none of them has specific support programs for SIB, but that by their nature, SIB may be able to fit in the public calls and have a chance to get some investment.

4.4 Implementation Role

The actors that play the role of implementation within the SIB ecosystem provide all the support for businesses to operate in their dynamic environments, such as support services, infrastructure, and others.

With the implementation role, ITCG and IACOC have the Incubation Program. It provides technical and managerial support to the incubated and other interested parties through legal and financial advice, business strategy, aid in elaborating projects for notices, and holding

events with partners such as Coffee Techs, Campina Grande Technology Fair (FETECh) and Hackathons. Both incubators are part of the Fundação Parque Tecnológico da Paraíba (PaqTcPB Foundation), which promotes scientific and technological advancement and has a partnership with all the institutional actors identified in this study. It is also essential to highlight the role of the Telmo Araújo Technological Innovation Center (CITTA). As a centre, it focuses on technological deliveries and the Brazilian Agricultural Research Corporation (EMBRAPA), which contributes to the ecosystem through technical and innovative projects aimed at the agricultural sector, promoting courses, events, workshops, challenges and programs.

In addition to local actors, the network extends to national actors that play an essential role in the SIB ecosystem. Artemisia is not for profit and is a pioneer in promoting and disseminating social businesses in the country. It provides on its institutional website several contents about this type of business, the success cases, studies that support their development, and the acceleration program for SIB in several areas. Artemisia also offers mentoring and advice throughout Brazil, frequently participating in events promoted by ITCG / PaqTcPB. The National Association of Entities Promoting Innovative Enterprises (ANPROTEC) appears on the scene, contributing directly to the other actors in this group, mainly in actions and events, strengthening ties between actors in the national ecosystem, the SIB. In partnership with the PaqTcPB Foundation, ITCG, Sebrae and ICE, promote the Impact Incubation and Acceleration Program that contributes significantly to the promotion and development of Social Businesses in the region.

Presenting the central actors' roles of the social business ecosystem of Campina Grande, based on the UNDP classification (2015), it is possible to see the importance of having them in an articulated network. One that drives these new business models (Petrini, Scherer & Back, 2016) is when they can promote impactful social changes (Edwards-Schachter & Wallace, 2017).

5 FINAL CONSIDERATIONS

The mapping of actors has represented a need and a constant challenge to innovation ecosystems, as many participants do not know their role. In this study, we chose to map the institutional actors, believing that the description of these roles may increase the capacity to absorb others who can interact with them.

Due to the lack of a mapping methodology, the authors of this study created their path, starting from the most vital link in the city's social business ecosystem, in this case, through the relationships promoted by the Incubator of Creative and Innovative Businesses in the city of Campina Grande (ITCG). With this option, it is believed that the information presented in this study better portrayed the reality of the technological ecosystem of the social business of Campina Grande, Paraíba.

Associated with the arguments of Spinosa, Schlemm & Reis (2015) and UNDP (2015), it was observed that the ecosystem of Campina Grande has a variety of institutional actors with essential and distinct roles for the development of the region and with a strong partnership network among themselves, working together in various actions. As perceived by Steiber & Alange (2013), the results made evident the importance of innovation intermediaries for the development of connections between the actors present in the ecosystem.

The option for the roles outlined by the UNDP (2015) enabled a grouping of the actors. There was no analysis about the relevance. It is believed that this issue may be secondary and have different starting points.

A criticism that this study brings may be associated with prematurity in the analysed ecosystem's life cycle. Many of the technological, social businesses operating in the city of Campina Grande channelled to the social option due to the existence of specific calls, not due to the primary will to act in the sector. Perhaps the time and structure of the ecosystem can contribute to this change.

Finally, one of the most significant contributions of the research is to solve part of the lack of information, presenting the institutional actors present in the ecosystem. Each one of them can contribute, through their roles, to the development of Social Businesses. Furthermore, this study's results may complement a collaborative platform of business actors with an impact on growth, the I-Balaio.

As a suggestion for future studies, and considering the importance of developing more impoverished regions, it is recommended to create new research involving technological businesses with a social impact and their ecosystem in other Brazilian areas and/or countries with similar characteristics. Recent studies may help construct standards and broaden the understanding of the dynamics in the flow of knowledge in the ecosystem. These studies may also be based on the methodological and theoretical construction used in this work, expanding or refuting in part the logical structure presented, which would represent advances for science. This work has a descriptive bias and contains valuable information for the social businesses present in the city or for social entrepreneurs who want to join. They will recognize which institutional actors to seek to serve them better in their specific needs. Finally, it also brings gains for other institutional and organizational stakeholders, public and private, so that, when they recognize themselves, they can continue to act in a complementary way in search of strengthening the ecosystem.

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[i] Mestre em Administração pelo Programa de Pós-graduação em Administração PPGA/UFCG

[ii] Professor efetivo do curso de Administração e do Programa de Pós-graduação em Administração PPGA/UFCG