


CASE STUDY

An international perspective of the business incubators' perception about business model canvas for startups

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Abstract

This work aims to approach the reasons for Business Incubators (BINCs) to replace Business Plan by Business Model Canvas (BMC) for creating and accelerating the startup process. The main value of this study lies in its empirical appliance to test the adoption of business modeling for startups in two different entrepreneurial ecosystems. A qualitative approach has been used in analyzing two case-studies, one from Brazil (Supera) and the other from Portugal (Fabrica). The method used was inquiring into the managers' impressions when helping to create startups and accelerating their development. The analysis was based on the data obtained from interviews and secondary data through a content analysis technique supported by ATLAS ti 7.0 software. The findings highlight how the use of BMC is bringing real opportunities for the development of nascent businesses. Furthermore, the perceptions of the BINCs studied suggest the adequacy of this model to startups due to their flexibility, user-friendliness, and capability to manage innovation, communicate, and share business logic.

KEYWORDS

business incubator, business model, canvas, case study, startups

1 | INTRODUCTION

Research on startup strategies frequently differentiates types of strategy by content characteristics, analyzing types of strategy and, by process characteristics, related to how the strategy is formulated and implemented (Rauch & Frese, 2000). This study is focused on the process of action strategy considering that, on the one hand and from the theoretical point of view at least, Business Model (BM), and more specifically Business Model Canvas (BMC), is developed before the creation of the startup, in order to clarify the value for creation processes (Osterwalder, 2004), especially for new technology-based firms (Andries & Debackere, 2007). On the other hand, in practice, BMC is considered an important tool for strategy operationalization (Cortimiglia, Ghezzi, & Frank, 2016) and it may be used to minimize the problems that entrepreneurs have for translating original business ideas and new venture goals into actions to achieve such goals, improving performance.

Nowadays, Business Incubators (BINCs) may support startups to suit the creation of their business. BINCs support nascent businesses in building BMC and provide knowledge and training to early entrepreneurs. Currently, BINCs are replacing the (traditional) Business Plan (BP) with BMC (Blank & Dorf, 2012) because the BM encourages the entrepreneur to conceptualize the venture as an interrelated set of strategic choices (Morris, Schindehutte, & Allen, 2005).

However, it is not clear why and how they do this, as, as far as we know, it is not possible to find any study about this relation between BINCs and early entrepreneurs in the creation of BMC. Besides, it is also poorly understood how BINCs evaluate BMC use for startup creation and acceleration. This gap in the literature about BMC and the expansion of its use justified this research.

Therefore, this article has a twofold purpose. First, it aims to provide a better understanding about the use of the BMC for creating and accelerating the startup process in the BINCs in two entrepreneurial ecosystems (in Brazil and in Portugal). Second, this work tries

to identify the reasons why startups substitute BP with BMC. The aims of this study and the methodology applied go beyond the traditional descriptive case-study method, making this work distinct and innovative from others on the topic. This is done by analyzing the actions of two large and important BINCs, one established in Brazil and the other in Portugal. We consider that there is also a gap in the literature, due to the absence of in-depth comparative studies of organizations in this emerging sector supported by primary data coming from interviews and complemented by secondary data proceeding from media. Thus, this article contributes to the literature, and is also helpful for practitioners, offering a good explanation of the incubators' actions.

According to the European Commission Enterprise Directorate General (2002), the expression BINCs can be used to describe a wide range of organizations that help entrepreneurs to develop their ideas, from inception through the commercialization and launching of a new firm. The incubation process includes, in general, three phases: pre-incubation, incubation and post-incubation. Each phase requires different services to be offered according to a firm's objectives and stage of life (European Court of Auditors, 2014; European Union, 2010; Schwartz & Teach, 2000). The support in developing BMC seems to occur mainly in the pre-incubation phase, the purpose of which is to convert innovative ideas or projects into a potential commercial business. This phase is regarded as a process of attracting potential clients for the next phase. It also implies evaluation of the innovation, preparation of a BM and training. These are additional insights which confirm that BMC is a better fit for the creation of startups.

2 | THEORETICAL FRAMEWORK

2.1 | Origin: The emergence of business models

The emergence of the concept of BM and its posterior extensive use, began in the mid-1990s, associated with the advent of the internet (Amit & Zott, 2001), rapid growth in emerging markets and interest in "bottom-of-the-pyramid" issues (Prahalad & Hart, 2002; Seelos & Mair, 2007; Thompson & MacMillan, 2010), and the expanding industries and organizations dependent on post-industrial technologies (Perkmann & Spicer, 2010).

The definition of BM is not consensual, and has been presented as a description (Applegate, 2000; Weill & Vitale, 2001), a statement (Stewart & Zhao, 2000), a representation (Morris et al., 2005; Shafer, Smith, & Linder, 2005), an architecture (Dubosson-Torbay, Osterwalder, & Pigneur, 2002; Timmers, 1998), a conceptual tool or model (Osterwalder, Pigneur, & Tucci, 2005), a structural template (Amit & Zott, 2001), a method (Afuah & Tucci, 2001), and a pattern (Brousseau & Penard, 2007). Nevertheless, Zott et al. (2011:1023) stated that the BM "is often studied without an explicit definition of the concept." The same authors revealed that the BM "has been employed mainly in trying to address or explain three phenomena: (a) e-business and the use of information technology in organizations; (b) strategic issues, such as value creation, competitive advantage, and

firm performance; and (c) innovation and technology management." However, special issues of prestigious journals devoted to the topic of BM have increased in recent years (Baden-Fuller & Morgan, 2010; Ritter & Lettl, 2018).

Attending to the different purposes, a BM can be considered as a unit of analysis and as a holistic approach. Considering how a company carries out its internal and external business, a BM can be considered as a mechanism for value capture and value creation (Zott et al., 2011) and a tool to prepare internationalization (Meyer, 2017). In summary, a BM could have two purposes: it is a tool that could be used to analyze the value creation of a firm, and it also could mediate the transfer of a technology or an idea to the market, attending to the value created for the potential customers.

2.2 | Motivations to move from BM to BMC

A BM is composed by a group of dimensions. Weill et al. (2005, p. 5) identified two elements in a BM: "what the business does" and "how the business makes money doing these things." These elements can be divided into assets and relations with buyers. Moreover, Baden-Fuller and Morgan (2010) described a BM as a combination of characteristics and activities of a business, which are captured in essential recurring elements. Based on the literature, Zott et al. (2011, p. 10) suggested three important parameters of a BM: "notion of value (e.g., value stream, customer value, and value proposition), financial aspects (e.g., revenue streams and cost structures), and aspects related to the architecture of the network between the firm and its exchange partners (e.g., delivery channels, network relationships, logistical streams, and infrastructures)."

However, at present time, we can assert that startups require a major shift in strategic thinking, management approaches, and business operations that impact the way services and products concepts are generated, developed, and launched to the market. Osterwalder et al. (2005) promoted the required analyzability and communicability by proposing a new BM framework in the mold of a Canvas. Nowadays, BMC is a popular tool for designing startups and has contributed to the generalized use of BM in an enriching and modern way (França, Broman, Robèrt, Basile, & Trygg, 2017; Haaker, Bouwman, Janssen, & Reuver, 2017). This tool presents four dimensions: value, architecture of the relation between firm and exchange partner, what the firm is doing and financial aspects. Canvas provides business practitioners the opportunity to analyze, manage, understand, share, prospect, and patent a business better than never (Osterwalder et al., 2005). It has been also recognized that the BMC can be applied to overcome broader problems where creativity plays an essential role to turn ideas into innovations (Naggar, 2015) acting as a useful tool for providing divergent thinking (Brown, 2009) for conceptualizing new product and services and communicating it with stakeholders (Osterwalder & Pigneur, 2010).

In general, BM can be applied for new ventures but also by established firms. How to prepare a BM can be taught (Campbell, Gutierrez, & Lancelott, 2017), to teams or individually (Onken &

Campeau, 2016), helping managers to prepare and to evaluate introducing a new product or line, entering a new market, or it can also be used to deconstruct the existing business into its components and help management to see more clearly and exploit synergies and economies between new or existing opportunities (Leschke, 2013).

Assuming that BP are in many cases considered as a waste of time and resources, the emergence of BMC has been quickly adopted by new ventures to create value for consumers by developing products and services customer want (Osterwalder, Pigneur, Bernarda, & Smith, 2014). To sum up, and according to academic literature, the motivations and expectations for startups choosing BMC is that it is an intuitive and easy-to-use tool (Wallin, Chirumalla, & Thompson, 2013), covering different elements that have been identified as critical for a successful BM (Toro-Jarrín, Ponce-Jaramillo, & Güemes-Castorena, 2016), providing an initial vision for startups that like to grow-up by viewing the business from a holistic standpoint (Onken & Campeau, 2016). In addition, authors such as Joyce and Paquin (2016) have highlighted the usefulness of BMC for designing more sustainable models able to compete in the global economy (Ratten, Jones, Braga, & Marques, 2019). Sort and Nielsen (2018) have also analyzed how using the BMC should improve investment process. We do not know at what point BMC development could lose its effectiveness, but according to the academic literature we can affirm that using BMC will affect the effectiveness of startups and will foster their success in the market.

Table 1 presents the four dimensions of BMC and the nine standardized building blocks.

These building blocks provide insight into what to include in a BM; however, the main building block is value proposition. The harmony between the different building blocks leads to a unique BM, that is, it is the combination between different building blocks that counts, not the sole, unique, and individual building block (Osterwalder & Pigneur, 2010). The total value creation of a BM is the total value for all business stakeholders such as customers, partners and suppliers (Brandenburger & Stuart, 1996). A more recent contribution about value creation considered that value creation and value capture mechanisms take place in a value network where the network partners complement the firm's resources (Zott, Amit, & Massa, 2010).

Zott et al. (2010, 2011) suggested that a BM is an important concept for innovation and that by creating new sorts of BM, value can

be created. They proposed a framework based on four sources of value creation that can strengthen and compensate each other: lock-in, complementarities, efficiency, and novelty (Sheehan & Vaidyanathan, 2009; Sinkovics, Sinkovics, & Yamin, 2014). Thus, value creation is a core element of the BM. In summary, the key elements of a BMC are explained as follows.

First, value proposition is the center of the Canvas (Osterwalder, 2004) because it is designed to serve customers. The value proposition bundles products and services that “create value for a specific customer segment” (Osterwalder & Pigneur, 2010, p. 22). Second, architecture of the relation between the firm and its exchange partners has different elements. The customer segment where “the value proposition must be communicated to get alignment with the specific customer need and must be delivered to the customer segment” (Osterwalder & Pigneur, 2010, p. 20). In addition, channels and customer relationship. The building block channel is defined as “how a company communicates with and reaches its customer segment to deliver a value proposition” (Osterwalder & Pigneur, 2010, p. 26) and “the types of relationships a company establishes with specific customer segments” (Osterwalder & Pigneur, 2010, p. 28). Finally, the key partners assuming that firms must require outside resources, thus key partners are essential. This building block is “the network of suppliers and partners that make the business model work” (Osterwalder & Pigneur, 2010, p. 38).

Third, architecture of what a firm is doing. It is related to key resources and key activities. Key resources “describes the most important assets required to make a business model work” (Osterwalder & Pigneur, 2010, p. 34). Key activities are “the most important things a company must do to make its business model work” (Osterwalder & Pigneur, 2010, p. 37). Fourth, financial aspects related to revenue stream and cost structure. The revenue streams “represent the cash a company generates from each customer segment” (Osterwalder & Pigneur, 2010, p. 30) and the cost structure “describes all costs incurred to operate a BM (Osterwalder & Pigneur, 2010, p. 40).

To conclude, and supported by authors such as Amanullah et al. (2015), BMC should have significant advantages for startups such as focus, speed, agility, and common language. Focus, it is because BMC helps to expand the thinking of the building blocks and allows startups to understand how each component relates to the others focusing the attention on the strategic elements that matter the startup. Speed and agility are because BMC focuses on quality instead of quantity. And finally, common language is because BMC is easy not only to interpret but also to use.

2.3 | Expectations for using BMC

In the last decade, other models such as Lean Canvas were developed. Some BINC used this model to support startups and argued that this adjusted model is more actionable and entrepreneur-focused (Carvalho & Galina, 2015). In addition, the evolution and dissemination of Information and Communication Technologies (ICT), supported by the expansion of the internet bringing lower costs, allows the

TABLE 1 Elements of Business Model Canvas (BMC)

| Elements | BMC |
|--|---|
| Dimensions | Building blocks of BMC |
| Value | Value proposition |
| Architecture of the relation between firm and exchange partner | Key partners, customer relationship, customer segment, and channels |
| What the firm is doing | Key activities and key resources |
| Financial aspects | Cost structure and revenue streams |

Note: Source: Osterwalder et al. (2005).

possibility of doing business electronically (e-business). This possibility brings new opportunities, markets, and customers to firms that visualize new ways to create value using ICT and also allows new models to be designed to develop business. This new context justifies several authors considering that the internet was the principal driver for the BM (Ghaziani & Ventresca, 2005; Magretta, 2002; Yip, 2004) and considered e-business as an area for research on BM (Zott et al., 2011). In this context, BMC has helped consolidate companies to differentiate in the market (Cherif & Grant, 2014) but it is also considered by startups to enter successfully in the market (Mansoori, 2017; Quinones, Nicholson, & Heeks, 2015; Vanhala & Saarikallio, 2015). In fact, recent research focused on the digitalization of BM as a new trend in this research (Bressanelli, Adrodegari, Perona, & Saccani, 2018; Kotarba, 2018). Contributions in the field of e-BM have tried for a better understanding about new internet-based ways for doing business and the new roles that these firms play in their respective ecosystems (Roundy, 2016).

2.4 | Startups, entrepreneurial ecosystem, and regional development

The growth and survive of startups are related with the linkages and relations in an entrepreneurial ecosystem (being BINC one of its manifestations) that reveal a regional dimension and varies between regions and countries. Entrepreneurial ecosystem comes as a popular concept in academia, industry, policy, and management as a vehicle to describe, explain, advertise, and convey thoughts, frameworks, and opinions on how economic agents interact with their environment (Acs, Stam, Audretsch, & O'Connor, 2017; Colombo, Dagnino, Lehmann, & Salmador, 2019). To define what is mean by an entrepreneurial ecosystem, it is important to consider two dimensions. The first component is "entrepreneurial" that is referred to entrepreneurship as a process in which opportunities for creating new goods and services are explored, evaluated, and exploited. This approach also emphasizes the startups as and relevant type of entrepreneurship is an important source of innovation, productivity growth, and employment. The other component is the "ecosystem." This term has biological interpretation and represents the interaction of living organisms with their physical environment is at the center, is obviously not to be taken too literally within the context of entrepreneurial ecosystems. So the notion of entrepreneurial ecosystem implies that entrepreneurship occurs in a community of interconnect intervenient. And the literature about this theme is focused on the influence of regional variables in these interconnections, such as social, and how startups enjoy this context to born and growth and how their BM could be adjusted, improved, or adapted in consequence of this regional scenario and geography (Groth, Esposito, & Tse, 2015), to create competitive advantages and value for individual firms an sectors, and hence shape regional innovation outcomes (Cunningham, Menter, & O'Kane, 2018), networks, infrastructures, and other facilities (Agyapong, Mmieh, & Mordi, 2018) and to find better ways to understand how to best assist emergent ventures

(Kuratko, Fisher, Bloodgood, & Hornsby, 2017). In the fact, the rise of "entrepreneurial ecosystems" as structured efforts to create environments that are favorable to increasing the success for newly established ventures (Audretsch, Cunningham, Kuratko, Lehmann, & Menter, 2019). Entrepreneurial ecosystems allows networks among a set of the actors due to the co-existence of new ventures, small and medium sized as well as large firms (Bhawe & Zahra, 2019) universities and research institutions (Audretsch & Link, 2019) agglomerations or networks (Audretsch & Belitski, 2017; Lamine, 2017; Liu, Ying, & Wu, 2016) but have to be governed and organized to encouragement efficient knowledge flows, technology transfer, and value creation processes within these ecosystems (Colombo et al., 2019; Cunningham et al., 2018; Okey, 2019).

Additionally, it is important to highlight that it is possible identify significant differences between entrepreneurial ecosystems and concepts such as industrial districts, clusters, and innovation systems, mainly concerning the reinterpretation of the agent-centered, considered as the heart of the entrepreneurial ecosystem approach.

In the following section, we will check the theoretical aspects exposed here in two specific ecosystems to contribute to generate knowledge and to have a more realistic picture of what is happening in practice on the topic under research.

3 | METHODOLOGICAL ASPECTS

3.1 | Description of steps and procedures

This research has a qualitative approach, using primary and secondary data suitable to a qualitative research (Dana & Durnez, 2015). A comparative study has been performed based on two important cases of BINC. The cases selected are *Supera* located in São Paulo state, Brazil, and *Fabrica*, located in Lisbon, Portugal. Both are Technological BINC.

We selected these two BINC based on selection criteria that considered the importance of the BINC in each country, the comparability of the results and certain attributes considered relevant to the study, such as geographical location (Portugal—Lisbon metropolitan area—and Brazil—São Paulo State); BINC with similar target markets (technological), and replacement of BP with BMC. Comparative case studies are particularly suitable when researchers are seeking to strengthen a theory, through examining similarities related to the research question across representative cases around the world, possibly leading to an easier and more useful generalization of results (Miles, Huberman, & Saldaña, 2014).

Primary data comes from in-depth interviewing of the main managers of each BINC, carried out through a semi-structured guide. First, we characterized the BINC (general profile of entrepreneur, space, the number of offices, and management team). Questions shown in Table 2 were developed linking our purposes with the literature review.

Thus, two in depth interviews were conducted, with a duration of approximately 1 hr 30 min each. The data obtained were then

TABLE 2 Semi-structured guide for interview

| Questions | Authors |
|---|--------------------------------|
| Does BMC support creation and accelerate the startup process? | Osterwalder (2004) |
| Do you use BP or BM in your BINC? Why? Could you register the differences between these tools? Do you always use BM? If not, why did you change? | Morris et al. (2005) |
| How does use of BMC lead entrepreneurs toward brainstorming and execution? | Toro-Jarrín et al. (2016) |
| Does the use of BMC lead to a better business pitch? Does it vary based on industry? | Osterwalder and Pigneur (2010) |
| Does the use of BMC lead to more innovative or creative (novel and useful) ideas? | Naggar (2015) |
| Does using BMC in a divergent deconstructive approach result in different, qualitatively better results than traditional, critical linear thinking? | Brown (2009) |
| Does a BM advantage lead to a strategic advantage? | Toro-Jarrín et al. (2016) |
| Can the same BMC result in different implementations? | Osterwalder and Pigneur (2010) |
| How do you teach about the use of BM (workshop, videos, and so on)? How does use differ between teams and individuals? | Campbell et al. (2017) |
| Is there BMC that generate perceived value as opposed to actual value? | Osterwalder et al. (2014) |
| At what point does BMC development lose its effectiveness? Does using BMC affect effectiveness and/or success? | Osterwalder and Pigneur (2010) |

Abbreviations: BINC, business incubator; BM, business model; BMC, business model canvas; BP, business plan.

transcribed and sent by email to each manager. Afterward, we contacted the managers to preserve research ethics and to check if the transcript was a realistic representation of the interview, and to empower the interviewees by allowing them control of what was written (Mero-Jaffe, 2011). The information collected from the BINC under study was completed with secondary data coming from local business newspapers and websites of the BINC studied containing relevant information about the organizations. A total of 12 articles published between 2016 and 2017 selected from *My News Database* (covering the printed and online version of over 700 titles of national and international press, either free or not) were finally considered. In addition, the current websites from Supera and Fabrica were frequently visited as a direct way of nurturing our study with new information, different opinions from their blogs, and new events and insights. These secondary data were not codified but were useful for complementing (or comparing) information about both general aspects of incubators (size, prizes, and so on) and their adoption of BMC (training courses offered, incubation announcements, and so on).

Data collection and condensation were followed by the display of data, analysis, and conclusions according to the general steps in the

TABLE 3 Codification for qualitative analysis

| Category | Sub-category | Code |
|-------------|-------------------------|--|
| Environment | | Technological change |
| | | Competitive forces |
| | | Customer demand |
| | | Social environment |
| | | Legal environment |
| Factors | Understanding & sharing | Capture |
| | | Visualize |
| | | Understand |
| | | Communicate & share the business logic |
| | | Measure |
| | Analyzing | Observe |
| | | Compare |
| | | Design |
| | | Plan, change, & implement |
| | | React |
| Prospects | Managing | Align |
| | | Improve decision |
| | | Making |
| | | Innovate |
| | | Business model portfolio |
| | Patenting | Simulate & test |
| | | Patenting the business model |

Note: Source: Adapted from Osterwalder (2004).

qualitative research procedure (Miles & Huberman, 1994). The content analysis about the environment and functions of BMs was carried out supported by ATLAS ti 7.1 software. It involves the analysis of the written text from the definition of various groups of categories on the basis of the research developed by Osterwalder (2004). According to Krippendorff (2004), this approach to coding assumes that frequency is an indication of the importance of the subject. Following the original work of Osterwalder (2004), Table 3 shows the selected criteria used to collect the information systematically.

Osterwalder (2004) uses the first category, called environment, to represent where the pressure on a company to use BMC comes from. According to the author, five codes were considered, which are technological change, competitive forces, customer demand, social environment, and legal environment. Second, the category called *factors* considers some of the roles that the canvas BM can play in business management. Osterwalder (2004) identified five sub-categories of functions, which are understanding and sharing, analyzing, managing, prospects, and patenting of BMs. These sub-categories were divided into 17 codes to trying and capture in detail the role of the canvas model in the cases under study. For instance, and according to the literature review, *capture* refers to communicating the BM in a clear way (Zott et al., 2011) and *visualize* means handling complexity

successfully (Lindemann, Maurer, & Braun, 2008). The following section provides a general characterization of the cases selected.

4 | GENERAL CHARACTERISTICS OF THE CASES: SUPERA AND FABRICA CASE-STUDY

4.1 | Case 1—Supera (São Paulo, Brazil)

Supera is a technology BINC which provides support for creation of new businesses, provides basic infrastructure for the project, advice, training, and networking. It aims to provide tools and solutions for the creation, development, and improvement of nascent enterprises with regard to technology, management, marketing, and human resources. It also provides incumbents' networks by supporting contact with investment players, established companies, governmental agencies, and so on. The BINC, founded in 2003, has three modes to support the different stages of business development:

- Pre-incubation (open space): Designed for supporting entrepreneurs who need one or more of the following: BM restructuring, fundraising, operations viability, enterprise formalization, testing and product prototype completion, and service development.
- Incubation (residents): For entrepreneurs and businesses that already know technology, are able to master the production process, have a minimum guaranteed financial capital, and a well-defined BM.
- Association: For already established companies working in technology-based businesses which do not need physical space in the incubator, but are interested in the support and services provided by *Supera* for the development of their business. They must also have potential for partnerships with resident companies.

Currently, *Supera* has 28 companies as pre-residents, 12 residents and 15 associates. About 25 companies have graduated from *Supera*. The incubator is connected to the University of São Paulo (USP), which stands out in terms of generation of scientific and technological knowledge and is considered the most important university in Latin America according to various international rankings (World University Ranking 2016–2017, by The World Reputation Ranking; QS World University). Although with an increasing number of IT enterprises, most of the companies in *Supera* are related to pharmaceuticals and life sciences; this is due the proximity of the campus of USP in Ribeirão Preto, with a predominance of colleges related to the health field.

4.2 | Case 2—Fabrica (startup factory) (Lisbon—Portugal)

Fabrica is a technology BINC. Their mission is to help people to become entrepreneurs. With this purpose, they develop a methodology to help entrepreneurs identifying business ideas, creating teams,

designing their BM, finding customers, and in the launching of the company.

Fabrica offers both incubation and acceleration programs. *Fabrica's* acceleration programs have the goal of helping entrepreneurs in the many phases of the process of creation and development of new business and include: Ideation Week (5 days of a boot camp program) and Fast Start (this program is for teams of three to four entrepreneurs who want to validate their business idea, through the definition of the BM and its validation from the potential customers using BINC's methodology). The incubation includes different types of spaces and incubation models (co-working, virtual, flex, starter, and resident) with different services and prices. This BINC offers mentoring, networking and connections with some of Lisbon's investors, startup founders & innovators, and exclusivity in receiving partnership opportunities from the FabStart community. They also have specific programs directly designed for some strategic sectors, such as tourism, energy, or health.

Currently, *Fabrica* has 25 resident companies but a total of 56 companies including the companies in co-working. All of the companies have a technological component and are mainly founded by males (about 95%) of 25–40 years old, most of them in the initial phase of the incubation process. The acceleration and ideation programs have received about 1,500 participants, the equivalent to 300 startups. They are related to several universities in Lisbon, including the fact that the founder and executive manager of this private BINC is professor in a Lisbon Business University.

To summarize, the research was developed according to the following phases:

1. Selection of one BINC in Portugal and one in Brazil based on selection criteria as previously explained.
2. Preparation of the interview guide and variable codes to develop qualitative analysis as shown in Tables 2 and 3.
3. Application of the interviews with the BINC's (September 2016).
4. Content analyses of the results using ATLAS ti 7.0 software and according to the dimensions identified that is shown in the next section.

5 | PRESENTATION AND DISCUSSION OF RESULTS

This section develops the three steps defined by Miles et al. (2014) to present and discuss the main results obtained in the study: data condensation, data display, and analysis and drawing of conclusions.

5.1 | Data condensation

The main source of information was the transcription of interviews and codification was the way selected for data condensation. The traditional description of codes by Miles and Huberman (1994) has been cited by Neuman (2006, p. 460) as "tags for assigning units of meaning

to the descriptive or inferential information compiled during a study.” In this work, the 23 single codes, previously presented in Table 2 from Osterwalder (2004), were attached to portions of the text of the interviews of varying size—words, phrases, sentences, or whole paragraphs.

5.2 | Data display, analysis, and conclusion drawing

The results obtained are shown in Figures 1 and 2 in the form of conceptual maps, called networks. Each code appears associated with other codes in a logical manner. The two numbers that appear close to each code express the frequency of occurrence and the saturation (or number of links with other codes). In order to evaluate the inter-rater reliability, the coefficient kappa from Brennan and Prediger (1981) was calculated. The coefficient kappa is the proportion of agreement after chance agreement is removed for consideration (Cohen, 1968). For the environment characterization codification, the free-marginal k was 0.92; respectively, for the codification of factors' characterization, the k value was 0.87 indicating adequate inter-rater reliability in both the cases.

The networks help us to understand that, even acknowledging that the two cases considered, *Supera* and *Fabrica*, are organizations contemplating the different dimensions described by Osterwalder (2004) when considering BMC, equilibrium does not exist between the different sub-dimensions and related codes in the data from the interviews analyzed.

The network's view representing the environment (Figure 1) shows competitive forces as the most important force pressuring the incubator, directly or indirectly, to use BMC for startup creation and acceleration. Managers have expressed that “BMC is being promoted by consultants,” “BMC is demanded everywhere” and “is a trend in our entrepreneurial ecosystem.” For startups, the competitive environment is especially complex and the BM helps the new companies dynamically adapt to changes.

Equally important for the managers interviewed, a second major pressure to use the BMC for the incubator process comes from its social environment. Nowadays the social mood is favorable to adopting Canvas because of the relatively easy training and implementation when compared with the traditional BP. Quotations like “the large use of BMC has influenced the incubator manager to use the model” or “the routine to evaluate the new models by using BMC

exists” are examples of how the social environment is conditioning incubator managers to adopt BMC for startups.

Moving to the results shown in the second network view (Figure 2), we can see that the five main BM functions described by Osterwalder (2004) were considered by the interviewed managers for accelerating the startup process. For a better understanding of this network, codes have been colored by density and groundedness. As we can see in orange, there are some specific roles that BMC serves. Primarily, BMC is especially useful for planning and implementing the new business. One manager said that “it is so good to use the model for creating the new business and to know that you will not need to come back to the business plan tool anymore.” In fact, it seems to be much easier to create startups when entrepreneurs are helped to understand how to be profitable in a dynamic environment by using BMC. In addition, managers have repeatedly highlighted the dynamism of BMC when compared with the static nature of the classical business plan.

Equally indicated by the incubator managers, BMC serves for comparing the BM with the BMs of other startups in the same or different sectors. Comparisons should also serve for gaining new insights, foster acceleration, and understand how aggressive and innovative startups work. Sentences such as the following show the relevance of the model for comparison purposes: comparing classical tools with the new tool “before BMC, the selection process was so simple,” or recognizing that customers will better understand the new business value proposition when comparing it with other possibilities in the market “with this model the clients are able to better understand the value proposition.”

The third reason to adopt BMC, and closely related with the first, is to improve decision-making. According to De Reuver, Bouwman, and Haaker (2013), the BM can provide a specific framework for explaining how to create and to capture value. BMC reflects the architecture of the startup to make decisions and to accomplish the specific purpose of value creation. For instance, the quotation “the model allows us to make decisions and to think about the best alternatives” concentrates the essence of using BMC for improving decision-making. The fourth reason which emerged in analyzing the results of the study is to communicate and to share the business logic. This will help also to define measures to improve decisions. “The process includes some stages involving all participants” or “It is easy to communicate the method” are examples of the opinions about the utility of the model to communicate and share the business logic with different kinds of stakeholders.

Finally, and, showing the same level of saturation as the previous code of communicating and sharing, the results of the analysis

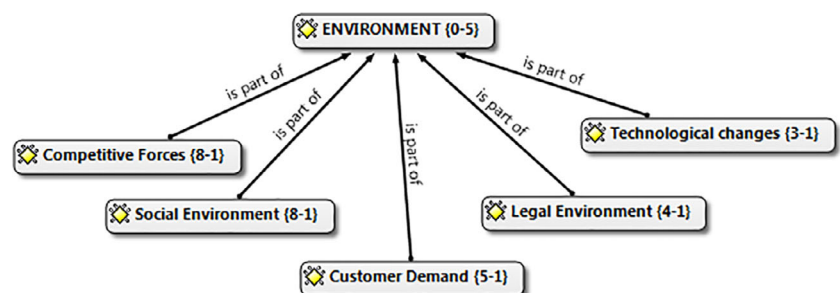


FIGURE 1 Network view for environment characterization [Color figure can be viewed at wileyonlinelibrary.com]

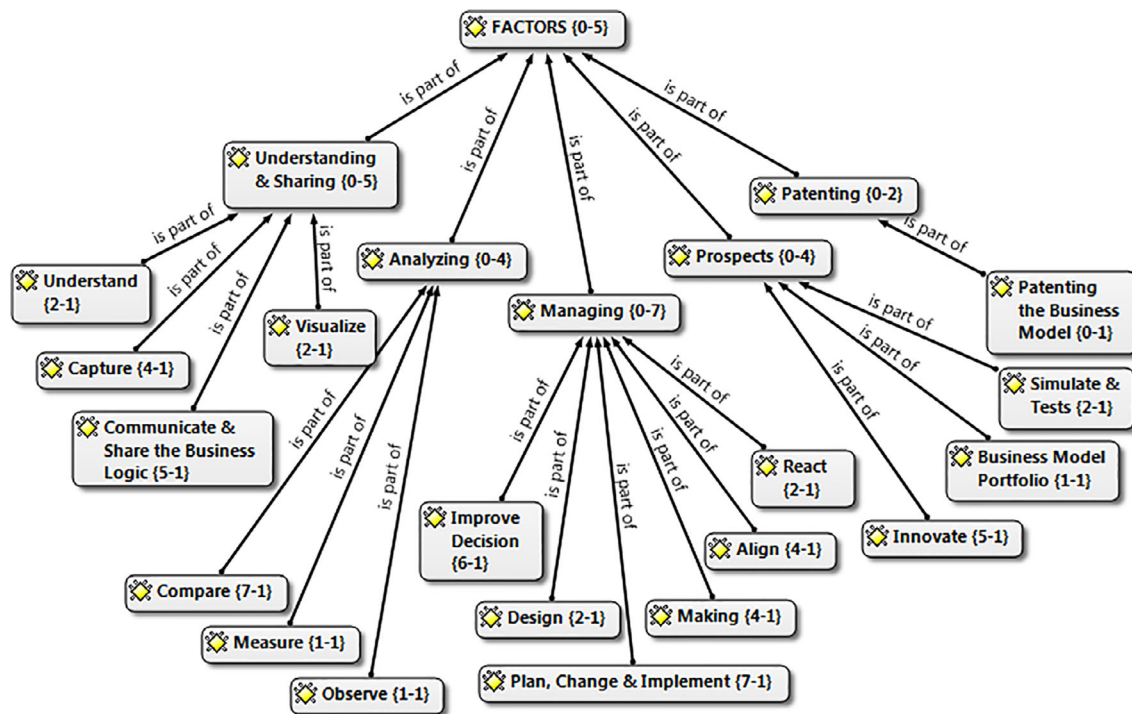


FIGURE 2 Network view for characterization of factors [Color figure can be viewed at wileyonlinelibrary.com]

TABLE 4 Comparative analysis: Supera versus Fabrica

| Topic | Supera | Fabrica | Total |
|-------------------------|--------|---------|-------|
| Environment | 32 | 3 | 35 |
| Understanding & sharing | 12 | 5 | 17 |
| Analyzing | 6 | 3 | 9 |
| Managing | 16 | 9 | 25 |
| Prospects | 5 | 3 | 8 |
| Total | 71 | 23 | 87 |

highlight that innovation is also an important reason for adopting BMC. The managers expressed that the model “enhances creativity and innovation” and “helps to feel that entrepreneurship and innovation is experiential learning.”

In order to compare both the cases, *Supera* and *Fabrica*, Table 4 shows how *Supera* offers more evidence in all relevant selected topics than *Fabrica*. This comparative analysis suggests that Brazilian entrepreneurs reveal a higher level of performance in the use of BMC mainly in environment and managing topics. Although both the cases are good examples to demonstrate how BMC affects development of startups.

6 | CONCLUSIONS

Nowadays, various startups look to BINC to support their business creation and to avoid early death due to the incubation process and the development of its main processes. BINC has continuously become more specialized, supplying more sophisticated and tailored services, networks, and space in order to care for young ideas and to

promote sustainable and competitive startups. In this context, BINC not only meet the need of their entrepreneurs and provide important services in the pre-incubation and incubation phases, but also offer support models to test and assess the ideas. BMC appears as a popular tool to support startups in their earlier stages (França et al., 2017; Haaker et al., 2017; Osterwalder et al., 2005; Schwartz & Teach, 2000). The findings of this study allow us to a better understanding of the perception of BINC in the use of BMC. From a theoretical point of view, after the overall analysis, there are some important implications. The results obtained show a wider range of environmental elements conditioning the use of BMC and different reasons to implement the model in startups (Audretsch et al., 2019). On the one hand, we should underline that, according to the perception of BINC, global environment and competitive forces imply that startups should use a flexible and easy model to test new ideas, capable of managing innovation and communicating and sharing their business logic (Campbell et al., 2017).

On the other hand, in line with authors such as Cherif and Grant (2014) or Amanullah et al. (2015), the range of reasons which emerged in the analysis have brought into evidence the instrumental nature of BMC, rather than its expected strategic motivation. The plasticity, flexibility, and intelligibility of BMC, even for entrepreneurs without academic knowledge in management, justify its popularity compared with BP, which was very common some years ago. BMC allows improving decision-making due to its capacity to reflect the architecture of the startup to make decisions and to accomplish the specific purpose of value creation (Cunningham et al., 2018; Osterwalder et al., 2014; Sheehan & Vaidyanathan, 2009; Sinkovics et al., 2014).

The results of this study have also implications for practitioners. In these analyzed case studies, BMC is used due to the easiness in

understanding and being used by entrepreneurs—even when they do not have managerial training—more than real economic pressure, which is in fact far from performance-oriented arguments. However, the perceptions of the BINCs studied suggest the adequacy of this model for startups. BMC is considered a very helpful tool and emergent success factor for local startup managers because BMC brings real opportunities for the development of nascent incubated business. As conclusion, the findings show that the use of BMC brings real opportunities for the development of nascent businesses suggesting the adequacy of this model to startups due to their flexibility, user-friendliness, and capability to manage innovation and to communicate and share business logic.

Although the selected case-studies could be considered representative of BINCs, the study has limitations and results are not completely generalizable. The most important limitation to be acknowledged is the fact that the study was conducted only in two countries, and it was based on the views of managers. Further research aims to enlarge the number of the cases, with informants including employees and their nationality in order to identify tendencies and best practices in the use of the tool for assessing and modeling ideas in competitive products and services. Deep understanding of barriers for using of BMC for better business design will also be important, as it needs combination with other tools, especially for market and financial support, as mentioned by the BINCs' managers. The second limitation is methodological, as we conducted only a qualitative study. Considering that methods in Social Sciences provide an expanded understanding of research problems when both qualitative and quantitative research techniques are mixed, empirical studies based on surveys will be conducted in the near future.

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