Technovation 130 (2024) 102904

Contents lists available at ScienceDirect

Technovation

journal homepage: www.elsevier.com/locate/technovation

To formalize, or not to formalize, business incubators' networks: That is not the question

Jean Bibeau [a,*], Roxane Meilleur [b], Étienne St-Jean [c]

[a] École de Gestion, Entrepreneurship, and Director of the Accompagnateur Entrepreneurial Desjardins (AED), Université de Sherbrooke, Québec, Canada
[b] Accompagnateur Entrepreneurial Desjardins (AED) and Lecturer, Université de Sherbrooke, Québec, Canada
[c] Institut de Recherche sur les PME, Canada Research Chair in Entrepreneurial Careers, Université du Québec à Trois-Rivières (UQTR), Québec, Canada

ARTICLE INFO

Keywords:
Business incubator
Network management
Entrepreneurship
Social Capital
Soft Systems Methodology (SSM)

ABSTRACT

With more than seven decades of supporting entrepreneurs, today's business incubators are distinguished by their external networks. These networks of collaborators provide key resources, knowledge, and skills. Studies call on incubator managers to formalize the management of their networks, a practice that can generate a competitive advantage. However, research to date has been relatively silent on how to manage these external resources. To address this, the management practices of a top-performing business incubator in Canada were observed. Close to 50 individual interviews were conducted over a four-year period and theoretical concepts from the business incubation, network and social capital literature inspired the observed practices. The results show that network management is a shared responsibility between entrepreneurs, external stakeholders, and managers and formalizing external ties cannot be an all-purpose practice. As such, a theoretical framework is proposed to shed light on the dynamic nature of managing social capital. A management that is both relational and structuring brings out the trust and autonomy of people in situations of dynamic and, sometimes, constraining interactions. Highlighting these practices contributes to a more refined conceptualization of incubator management and, on a practical level, raises the importance of the human and relational dimensions in managing these changing environments.

1. Introduction

Efforts to support the formation and maintenance of nascent businesses have propelled business incubators as an important mechanism for supporting entrepreneurship (Alaassar et al., 2021; Ratinho et al., 2020). The incubator is a micro-organization that brings together diverse stakeholders to stimulate business startups within industries, universities, regions, and countries (Arlotto et al., 2012; Carayannis and Von Zedtwitz, 2005; Hackett and Dilts, 2004; Klofsten et al., 2020; McAdam et al., 2016; Mian et al., 2016). Over the past 70 years, this type of entrepreneurial support has evolved from rental spaces in revitalized buildings, to programs designed to accelerate the development of the entrepreneurial project (Arlotto et al., 2012; Bruneel et al., 2012). From an initial concern for converting manufacturing areas in decline, the purpose of incubation subsequently became rooted in support of business startup projects and the entrepreneurs behind them (Aernoudt, 2004; Bruneel et al., 2012; Hackett and Dilts, 2004).

This shift also marks the rise of interest of academic institutions in the phenomenon of incubation as a potential tool for technology transfer and commercialization of scientific research (Albert, 2003; Arlotto et al., 2015; Klofsten et al., 2019; Lamine et al., 2015; Nicholls-Nixon et al., 2021; Rothschild and Darr, 2005). In turn, governments, and their economic development organizations as well as service providers have been invited to support incubated entrepreneurs (Alsos et al., 2011; Chabaud et al., 2004; François et al., 2016; Ratinho et al., 2020). Thus, multiple stakeholders form an ecosystem around these micro-organizations whose managers are called upon to act as intermediary agents and mediators of relationships (Dubini and Aldrich, 1991; Dutt et al., 2016; Shih and Aaboen, 2019; Spigel, 2017; Theodoraki et al., 2020). In this sense, the support services offered by the most recent generation of incubators are characterized by the strength of its external networks and the ability to manage these relationships (Apa et al., 2017; Arlotto et al., 2015; Bergek and Norman., 2008; Dutt et al., 2016; Eveleens et al., 2017; Grilli and Marzano, 2023).

To date, a large body of research on incubation features best practice perspectives generally oriented toward the outcome of the incubation,

* Corresponding author.
E-mail addresses: Jean.Bibeau@USherbrooke.ca (J. Bibeau), Roxane.Meilleur@USherbrooke.ca (R. Meilleur), etienne.st-jean@uqtr.ca (É. St-Jean).

https://doi.org/10.1016/j.technovation.2023.102904
Received 23 April 2023; Received in revised form 12 September 2023; Accepted 22 October 2023
Available online 2 December 2023

namely the success and performance of incubated entrepreneurs (Eveleens et al., 2017; Mian et al., 2016; Theodorakopoulos et al., 2014). Because performance indicators take many forms, causal links between incubator practices and impact on incubated entrepreneurs are difficult to generalize (Eveleens et al., 2017; Nicholls-Nixon and Valliere, 2021). As such, an incubation process is contingent of many factors and actors that interplay differently within their specific ecosystem (Grilli and Marzano, 2023; Klofsten et al., 2019). Moreover, much of the work to date takes a static perspective and gives little consideration to the relational and evolving nature of the environment of this type of organization (Autio and Klofsten, 1998; Bergman and McMullen, 2022). Yet, the entrepreneurial environment is punctuated by uncertainty, ambiguity, and changes in what is to be accomplished through multiple interactions (Engel et al., 2017; Grilli and Marzano, 2023; Nicholls-Nixon et al., 2022).

These varying interactions prompted research interests on incubators' network management (Apa et al., 2017; Hansen et al., 2000). As such, some researchers recommend maintaining informal and relational networks that ensure the free flow of information and knowledge between stakeholders, even noting the limited impact of formalizing such cooperation (Schwartz and Hornych, 2010). In that sense, others point out that not all network structures help the development of incubated entrepreneurs (Shih and Aaboen, 2019). Yet, other researchers suggest that an incubator should rather formalize its networks as well as its service offerings and management practices (Bergek and Norman, 2008; Hansen, 1995; Hansen et al., 2000; Lai and Lin, 2015). Some even link the performance of the incubator to its ability to structure its processes (Aaboen, 2009; Aerts et al., 2007; Hansen et al., 2000). That said, research is rather scarce on how, in practice, incubators manage such relationships and is even leaner when considering how these practices evolve over time (Apa et al., 2017; Galkina and Atkova, 2020; Peters et al., 2004; Soetanto and Jack, 2013; Theodorakopoulos et al., 2014).

Consequently, business incubators' network management deserves a closer look, specifically at the internal processes level of their incubation activities (Ahmad and Ingle, 2011; Apa et al., 2017; Kakabadse et al., 2020; Klofsten et al., 2020). Furthermore, research on incubation remains atheoretical and little of it explores the "how" of the processes involved (Hackett and Dilts, 2004, 2008; Galkina and Atkova, 2020). In light of this, the proposed research question is: "How and under what evolving conditions are external networks of incubators managed to support incubated entrepreneurs?" This question frames an exploration of incubator's external network management processes and their evolving nature in time. Anchored in the scientific literature of incubation, network and social capital, this inquiry of internal management processes identifies different constraints and tensions that influence relationships and management practices between incubator's managers, incubatees and external stakeholders. This inquiry is the result of four years spent observing and interviewing these three parties and their evolving management practices.

In the end, this exploration highlights a dynamic management of social capital where the formal and the informal meet within relationships that evolve according to individual's profiles, varying situations of support, constraints, and goals of incubation. The research contributes to an under-researched area of business incubation management literature that lacks empirical support for understanding how, over time, incubation external networks are managed (Sandberg and Alvesson, 2011). It also answers the call for processual and longitudinal studies of incubation focused on relational and intangible factors from a situated perspective (Kakabadse et al., 2020; Theodorakopoulos et al., 2014).

2. Literature review

2.1. Networks

Several research disciplines are interested in networks (Huxham, 2003; Parkhe et al., 2006). Although sociology has dominated the field since the 1970s, network theory is also rooted in psychology, anthropology, and mathematics (Duschek, 2004; Kogut, 2000; Lavie, 2006; Nahapiet and Ghoshal, 1998; Parkhe et al., 2006; Salancik, 1995). In this sense, the shift to an era of greater informational capacity and knowledge sharing, forces organizations to transcend their traditional functions in response to the complexity of their environment (Agranoff and McGuire, 2001; Beesley, 2004; Dagnino, 2004; Julien et al., 2003). The emergence of the networked organization has led to a rise in research contributions to network theory (Agranoff and McGuire, 2001; Lavie, 2006; Parkhe et al., 2006). As a result, interest in networks has become well established in the sphere of strategic management (Aldrich and Zimmer, 1986; Duschek, 2004; Prévot et al., 2010). This is also the case for entrepreneurship research, where networks are identified as necessary to the entrepreneurial process (Aldrich and Zimmer, 1986; Dubini and Aldrich, 1991).

From then on, the concept of "network" takes on multiple definitions describing the alliance of external resources to the organization that influence its behaviours while providing strategic opportunities (Lavie, 2006). From these resources, series of links are created, and the nature of these relationships is exposed (Brass et al., 2004). These links are between individuals, organizational units or organizations (Brass et al., 2004), and around the notion of "network" emerge the concepts of "dyads", "triads", "groups", "sub-groups", "relationships", "interdependencies", "relational links" and "network structures" (Parkhe et al., 2006). The network thus involves suppliers, customers, competitors, and other organizations or parts thereof interacting in the organizational environment (Brass et al., 2004; Dyer and Singh, 1998).

2.2. Business incubation external networks

Business incubation has been around for over seven decades and is now one of the most recognized business development mechanisms available to an entrepreneur seeking support (Ratinho et al., 2020). Incubation programs support entrepreneurs and their developing businesses with the goal of accelerating start-up phases and fostering chances of thriving toward self-sufficiency and financial sustainability (Grilli and Marzano, 2023). Originally based on real estate interests, a business incubator now offers comprehensive support to the entrepreneur by extending its expertise through a network of external resources (Aaboen, 2009; Antunes et al., 2021; Bruneel et al., 2012; Tavoletti, 2013). Supportive and diverse social networks of entrepreneurs are facilitating conditions to their growth and survival (Lamine et al., 2019; Messeghem and Sammut, 2010).

Although each incubator differs, networks to support its service offering are central to the most recent incubation configurations (Dubini and Aldrich, 1991; Bøllingtoft, 2012; Grilli and Marzano, 2023; Shih and Aaboen, 2019; Soetanto and Jack, 2016). Thus, the incubator is called upon to transact outside of its organizational boundaries in hopes of introducing other individuals, organizations and product and service providers to interact with it (Hansen et al., 2000; Lendner and Dowling, 2007). External networks refer to the relationships that are created between incubator managers and external collaborators who are called upon to participate in the development of incubated entrepreneurs and the incubator itself (Aaboen, 2009; Ascigil and Magner, 2009; Bruneel et al., 2012; Schwartz and Hornych, 2010; Tavoletti, 2013).

These collaborators contribute to this development by sharing key resources, knowledge, and skills (Colbert et al., 2010; Ratinho et al., 2020; Soetanto and Jack, 2013). They are suppliers, professionals, experts, potential clients, political influencers, financiers, and any organization that can help the incubated entrepreneurs (Ascigil and Magner, 2009; Dubini and Aldrich, 1991; McAdam and McAdam, 2008; Schwartz and Hornych, 2010). This expertise includes financial, legal, information technology, accounting, marketing, and other disciplines that can add value to the support services offer (Dubini and Aldrich, 1991; Hackett and Dilts, 2004; Hughes et al., 2007; Walker and Kalis, 2004).

The business incubator is therefore strong from its alliances with external resources (Dubini and Aldrich, 1991; Bøllingtoft and Ulhoi, 2005; Bruneel et al., 2012; Hansen et al., 2000; Lendner and Dowling, 2007; McAdam and McAdam, 2008). Thus, the formation and maintenance of external networks that interact with incubated entrepreneurs through incubator managers becomes an important feature of an incubation provision (Dubini and Aldrich, 1991; Bruneel et al., 2012; European Commission, 2002; Hansen et al., 2000; Tötterman and Sten, 2005). Access to external networks serves to build the social capital of incubated entrepreneurs and becomes a predominant function of the incubator (Galkina and Atkova, 2020; Grilli and Marzano, 2023; Soetanto and Jack, 2016). This may even be the defining element of incubated entrepreneurs' satisfaction (Adlešič and Slavec, 2012).

2.3. Social capital

Among the many definitions of social capital, that of Nahapiet and Ghoshal (1998) is often used as a reference in the scientific literature. They define social capital as:

> "[…]the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network." (p. 243)

Social capital thus requires organized efforts for its formation and development (Inkpen and Tsang, 2005; Nahapiet and Ghoshal, 1998). If social capital corresponds to both the network and the assets that can be mobilized, then the ties that make up this network and the individuals or groups that mobilize these ties become components of social capital. Thus, these ties and the actors who weave them interact within a given structure, with certain shared referents and relational characteristics that allow for the formation of relationship networks (Inkpen and Tsang, 2005; Martinez and Aldrich, 2011; Nahapiet and Ghoshal, 1998).

Social capital is defined according to three dimensions: structural, relational, and cognitive (Nahapiet and Ghoshal, 1998). The structural dimension concerns the network configurations, the social system, and the more global networks around the actor in which relationships are impersonal and depend more on the surrounding structure (Inkpen and Tsang, 2005; Nahapiet and Ghoshal, 1998). The relational dimension refers rather to the personalized aspect of the relationships between the actors in the network and the reasons behind them such as trust, norms, and obligations (Nahapiet and Ghoshal, 1998). Finally, the cognitive dimension refers to the shared system of meanings, representations, and interpretations, which allows individuals within a network to communicate and make sense of the information they receive (Martinez and Aldrich, 2011; Nahapiet and Ghoshal, 1998).

In the context of business incubation, the importance of social capital and the mobilization of networks as resources for the development of incubated entrepreneurs has been noted (Bøllingtoft and Ulhoi, 2005; Lee et al., 2001; Schwartz and Hornych, 2010). The act of generating social capital around and from which the exchange of resources and knowledge unfolds is a defining component of the incubation offer (Hughes et al., 2007; Grilli and Marzano., 2023; Ratinho et al., 2020). Access to the network's resources and knowledge community reduce transaction costs and facilitates exchanges (Alaassar et al., 2021; Dyer and Singh, 1998; Han et al., 2022; Peters et al., 2004). Social capital thus generates a willingness to collaborate among mobilized individuals and a sense of solidarity that can facilitate incubated entrepreneurs to take action (Eveleens et al., 2017).

2.4. Relational dimension of social capital

The mobilization of external resources and the exchanges that emerge depends on the social structure, the social norms, the influence of individuals and their position within the network (Apa et al., 2017; Bøllingtoft and Ulhoi, 2005; Dubini and Aldrich, 1991; Phan et al., 2005). This favourable positioning can be the work of an individual or a group. In an incubation context, managers are at the forefront of facilitating the positioning of incubated entrepreneurs with external networks (Ratinho et al., 2020). In this context, the importance of managers' human and relational capital is highlighted (Hormiga et al., 2011; Vanderstraeten et al., 2020). It is thus the responsibility of the incubator manager to ensure the creation, development, and maintenance of relationship between external collaborators and incubated entrepreneurs (Antunes et al., 2021).

To this end, the incubator provides a bridge between the incubated entrepreneur and the external environment (Bergek and Norman, 2008). With knowledge of the incubated entrepreneur's needs, the incubator manager is better equipped to identify the connections to be made (Fang et al., 2010). For some, the manager is the "gatekeeper" and effective coordinator of external collaborators (Colombo and Delmastro, 2002). Other researchers refer to the manager as a "relationship broker" at the boundaries of the incubator, who must not only introduce the connections, but also choose the right connections and networks to form (Hughes et al., 2007; Peters et al., 2004). Others name the manager as a "relationship mediator" (Bergek and Norman, 2008; Rothschild et al., 2005). As a facilitator, broker, or mediator, the incubator manager serves as a lever to initiate and maintain the sharing of resources and knowledge between external networks and incubated entrepreneurs (Ratinho et al., 2020).

That said, the incubated entrepreneur is also a stakeholder in the generation of its social capital (Bøllingtoft, 2012; Redondo and Camarero, 2019). In this sense, researchers have made social capital the basis on which the relational strategy of incubated entrepreneurs is assessed (Hughes et al., 2007). For them, the networking opportunity offered by the incubator is not enough for value creation. Rather, it is how the entrepreneur behaves in the face of these opportunities that is critical to their ability to generate relational capital. Thus, this ability is measured by the entrepreneur's use of network resources and the use of the knowledge that these resources provide (Hughes et al., 2007).

These resources include financial, material, and human resources in the form of goods and services, technologies, patents, trademarks, technical skills and competencies of all kinds (Hughes et al., 2007). In terms of knowledge, access to network knowledge is more latent and it is up to the entrepreneur to recognize it, interpret it and make it their own. This knowledge can include ways of doing things and innovating, people to know or identifying new opportunities. It should be pragmatic and support the dynamic learning of the incubated entrepreneur (Fang et al., 2010).

In the end, network interaction stems, on the one hand, from the ability to pool resources and, on the other, from the ability to explore and exploit knowledge that remains to be defined, interpreted, and adapted to the needs of the entrepreneur (Hughes et al., 2007; Jack et al., 2010). For some, the generation of social capital, in its relational dimension, can become a source of competitive advantage (Dyer and Singh, 1998; Fang et al., 2010; Hughes et al., 2007; Muñiz et al., 2013).

2.5. Structural dimension of social capital

The determining role of the relational dimension of social capital raises the importance, for some, of transforming this capital into knowledge embedded in the structure of the firm (Hormiga et al., 2011). In its structural dimension, network configuration depends less on individuals and more on the surrounding structure (Inkpen and Tsang, 2005; Nahapiet and Ghoshal, 1998). This dimension identifies the organizational configurations that enable the structuring of sharing and exchange actions between people. For this reason, the formalization of processes can be a way of operationalizing this transition from the human and relational dimensions to a structural dimension. Therefore, the mechanisms that facilitate the management of relationships as well as the modes of governance of these relationships are of research interest (Carson et al., 2006).

More globally, research raises the complementarity of contractual and relational management modes (Cao and Lumineau, 2015; Carson et al., 2006). On the one hand, structuring relationships through the mechanism of formal contracts consolidates the roles and obligations of stakeholders to avoid conflicts and reduce the risks of transactions. On the other hand, relational and less formal mechanisms also have their structuring effects (Cao and Lumineau, 2015; Carson et al., 2006; Dyer and Singh, 1998). In this sense, informal safeguards based on trust, good faith and flexibility between stakeholders facilitate exchanges and reduce the costs of dealing with each other (Dyer and Singh, 1998; Poppo and Zenger 2002; Zaheer et al., 1998). Thus, the complementarity of contractual and relational management modes is noted as a mechanism for effective and adapted network management (Poppo and Zenger, 2002).

In entrepreneurial and incubation contexts, research also raises the relational as well as structural nature of the formation and maintenance of entrepreneurial networks (Soetanto and Jack, 2013). In this sense, network observation must include both the structure of the network and the changing and evolving interactions among its stakeholders (Slotte-Kock and Coviello, 2010). The evolutionary character is denoted by research where the human and relational dimensions are preponderant in the early phases of the firm's start-up, during which the structural dimension is more difficult to discern (Calza et al., 2014; Hormiga et al., 2011). Consequently, researchers observe the evolution of networks linked to the social identity of the individual towards more calculated and structured links based on "cost-benefit" concerns (Hite and Hesterly, 2001).

For others, it is rather a tension that persists between the trust that binds entrepreneurs and external networks and the control formalized by contracts (Strätling et al., 2012). In this sense, contract and trust must complement each other in the context of incubation as the latter serves as a mechanism that regulates irregular exchanges and creates value in the relationship between people (Han et al., 2022). Tensions are also a topic of research when the expected outcome of rapidly launching start-ups is difficult to align with the varying temporalities, uncertainties, and nonlinear processes of innovative new firms (Nair and Blomquist, 2020). This is especially relevant in the role of managing incubators among conflicting and competing demands, calling for further research on the constraints facing incubator managers (Kakabadse et al., 2020).

In line with this, there is a body of research on incubation that challenges managers to formalize management practices. As such, formalizing the processes of selecting entrepreneurs (Aerts et al., 2007; Bergek and Norman, 2008), structuring service providers' offerings (Aaboen, 2009; Bergek and Norman, 2008), and planning for an exit from the incubator (Bruneel et al., 2012), have been linked to better incubator performance. As such, specific formalization of external network management processes has been linked to better incubator performance (Aaboen, 2009; Bergek and Norman, 2008; Eveleens et al., 2017; Hansen et al., 2000). To this end, structuring the processes for managing external collaborators ensures better incubator performance (Galkina and Atkova, 2020; Hansen et al., 2000).

2.6. Processual nature of networks

At the same time, research has prompted other researchers to note that, for nascent firms, it is not only the structure of relationships that matters, but also the processes and dynamics that shape them (Galkina and Atkova, 2020). These researchers ask for a more holistic approach to understanding networks, which they refer to as "effectual" in the sense that networks are formed in often unpredictable and exploratory dynamics (Galkina and Atkova, 2020). Those dynamics also reminds us that the business incubator and its networks are not static (Bøllingtoft and Ulhoi, 2005; Hoang and Antoncic, 2003). Research on the nature of linkages (Granovetter, 1973), structural holes (Burt, 2000) and the evolution of networks in the process of organization formation (Larson and Starr, 1993), has emphasized this processual nature of relationships. Also, more recently, the unpredictable, changing, and sometimes ambiguous nature of the environments in which entrepreneurs transact has been documented (Busch and Barkema, 2022; Engel et al., 2017).

In doing so, the underlying processes of incubation, resulting from dyads and triads that form, are of research interest (Ahmad and Ingle, 2011; Hannon and Chaplin, 2003; Hite and Hesterly, 2001). As evolving structures, incubators can reconfigure themselves following a period of growth and transformation of their service offerings over time, sometimes requiring temporal considerations to understand their dynamics (Bergman and McMullen, 2022; Nicholls-Nixon et al., 2021). In this movement, the very processes of managing external networks need to be better documented (Jack, 2010). Moreover, the exploration of the entrepreneur's networks must be observant of all parties to the relationship to grasp the dimensions that go beyond a purely utilitarian transaction (Bergman and McMullen, 2022). In that sense, some literature notes possible social liability of negative relationships preventing individuals and organizations to achieve expected outcomes (Labianca and Brass, 2006). Trying to avoid relation conflicts from a mismatch, which is the 'dark side' of social capital, management requires to adapt the composition of its social networks and be attentive to all parties' needs (Gargiulo and Benassi, 1999).

Exploring the formation, development, and maintenance of the incubator's social capital is thus a topic of interest, and yet the ways in which the incubator does this is the subject of limited research (Adlešič and Slavec, 2012; Grilli and Marzano, 2023; Scillitoe and Chakrabarti, 2010; Tötterman and Sten, 2005). Therefore, this research specifically seeks to explore the processes that are put in place to manage an incubator's external resources and the way these processes evolve and are experienced by different stakeholders. To this end, the research question is: "How and under what evolving conditions are external networks of incubators managed to support incubated entrepreneurs?" The purpose of the research is not to know if these practices lead to a competitive advantage of the incubator under study, but rather to describe evolving situations of management of external networks within an incubator deemed to be high performing.

3. Methodology

3.1. Methodological approach

A case study method was chosen to allow for an in-depth study of the incubator in its context (Yin, 2009). This qualitative research was conducted using an abductive process (Fann, 2012; Hlady Rispal, 2002; Yin, 2009) anchored in a pragmatic epistemological paradigm. The qualitative nature of the research allows for a deeper understanding of the processes of human activities (Miles and Huberman, 1994). The abductive logic leads to a pragmatic knowledge construction, building from iterations between the field and sensitizing concepts (Anadon and Guillemette, 2007; Burks, 1946). It is an iterative process that combines inductive and hypothetical-deductive logics through a constant back-and-forth between data analysis, literature consultation, explanatory hypothesis formulation, and field testing (Fann, 2012; Miles and Huberman, 2003).

The research process was framed by Soft Systems Methodology (SSM) principles. Introduced as an inquisitive learning system for studying human activities (Checkland, 2000, 2010), SSM aims to adopt flexible systemic thinking and offers an interpretive view of human experiences constructed from the field (Checkland and Poulter, 2010). It follows the same logic as action research (Prévost and Roy, 2015), and aims to develop improvement scenarios. In this sense, SSM is consistent a pragmatic epistemological posture, particularly interested in the complexity of reality where research must take place in real-life conditions (Poupart et al., 1997). Five actions ensure the implementation of SSM: 1) inquiry of the problematic situation, 2) modelling of human activities, 3) definition of improvement scenarios, 4) discussions with

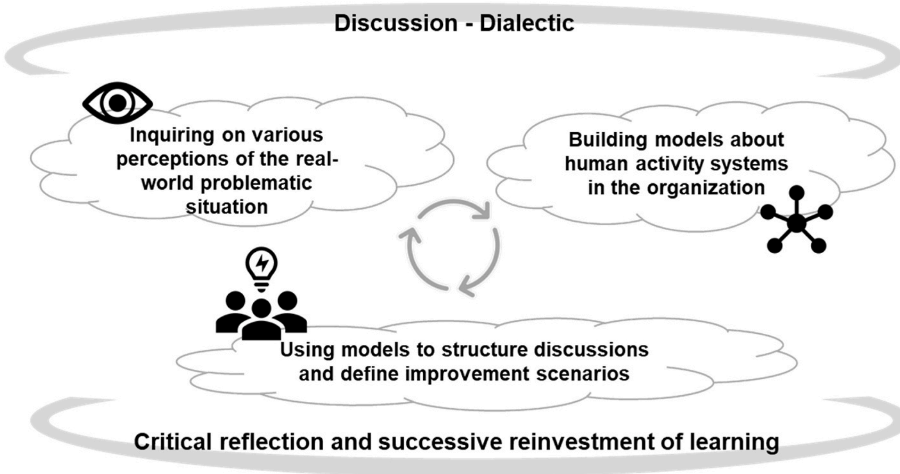

Fig. 1. Five actions of the Soft Systems Methodology (SSM).

stakeholders and 5) critical reflection on what emerges (Bibeau, 2019; Checkland and Poulter, 2010; Prévost and Roy, 2015). These five SSM actions are summarized in Fig. 1.

The two overarching actions of discussion and critical reflection frame the other three actions of inquiry, modelling, and definition of scenarios. During the five years of research, these ongoing actions served to mobilize stakeholders throughout the process and foster successive reinvestment of learning. More specifically, the action of inquiry framed data collection from targeted stakeholders, gathering their perceptions on the problematic situation. From that action, a rich picture of the various perspectives was drawn, and a consensus was reached on the value of exploring the incubator's management practices.

Then, the modelling action consists of articulating models from the collected data of observed human activity systems unfolding in the incubator under study. In SSM, models are not intended to provide "recipes" to be followed, but rather to account for the complexity of real-life situations explored from inquiry and to nourish discussions. These models are also enriched by research from the scientific and professional literature, perceived as additional sources of data in the form of sensitizing concepts (Bowen, 2006). With field data, such sources support the overarching actions of discussion and critical reflection with various stakeholders. Finally, the action of defining improvement scenarios aims to respond to the issues raised by the agreed upon problematic situation. In this research, improvement scenarios new questions during formal and informal conversations with participants, providing a more refined definition of the explored problem in its context.

3.2. Data analysis

In SSM, data collection and analysis are conducted continuously through all five actions in an iterative manner. SSM welcomes researchers to choose a data analysis method within the context of study. Filion (2012) explains:

> […] we are looking for models that allow us to design human activity systems. We need a methodology that allows us to develop models of human activities from empirical field data. But such a methodology does not exist as such. Each qualitative researcher tends to "cobble one together" (p. 42)[1]

For this research, the analysis process was based on the coding steps proposed by Strauss et al. (2004), ensuring consistent comparison of the data. In that sense, a more general initial coding was conducted while revisiting the initial interviews of stakeholders that helped define the problematic situation. This type of coding was appropriate at the start of research as the problem definition needed some form of consensus before proposing models for discussion. Once the problem was defined and agreed upon, selective coding was used for analysis of all new data. In this second phase of data collection and analysis, observation, and recounts of management practices from the field and sensitizing concepts from the literature pointed towards more significant elements of management practices. These elements helped frame more specific management situations to attain to. Throughout this process, learning from a continuous analysis were reinvested throughout the actions of discussions and critical reflection with participants (Checkland, 2000). Such reinvestments were instrumental in adjusting and improving exploration actions during the five years of research.

3.3. Case description and participants

The selected case is one of the top university business incubators in Canada at the time of the research, based on indicators of: the number of startups, investment dollars in those startups and new job creation. Of the five years of research, four years were spent on the field collecting data from observing management practices, participating in meetings, reading internal documents, and interviewing managers, incubated entrepreneurs, and external stakeholders. This data collection took place between year two and six of the incubator's life span, hence, from its early to growth stages. During this time, the incubator lived challenges such as higher volume of entrepreneurs to support and the entry of new stakeholders to account to. More that a year after leaving the field, public reports indicated that the incubator under study had helped launch more than 60 startups, create 250 new jobs, and generate more than $50 million investment in those nascent firms. Such success made this particular incubator interesting to explore on the grounds its management practices, with the hope to provide valuable insights to incubation literature, other incubators, and related entrepreneurial support mechanisms.

For interviewing purpose, the selection of participants was based on a mixed sampling strategy (Patton, 2002), where various criteria were used to build a rich understanding of the incubator and stakeholder views. For example, the diversity of the participants' profiles was favoured, and opportunistic sample was used to refine the sample as opportunities arose for the researcher during the research process. In total, 48 semi-structured interviews were conducted, and participants were

[1] […] *nous sommes à la recherche de modèles qui permettent de concevoir des systèmes d'activités humaines. Il nous faut une méthodologie qui permette d'élaborer des modèles d'activités humaines à partir de données empiriques de terrain. Mais une telle méthodologie n'existe pas en tant que telle. Chaque chercheur qualitatif tend à s'en « bricoler » une* (our translation).

grouped into three categories: incubator managers, incubated entrepreneurs, and external stakeholders. Interviews lasted an average of 75 min and were transcribed, coded, and analyzed, as described above.

3.3.1. Managers

Prior to its official launch, two founding managers worked at thinking about the business model of incubation within the university context and assembling initial investors. One of the two managers came to the incubator with engineering and business diplomas from the incubator's university, leaving his job as director of the university and industry liaison office. The second founding manager was a business school accounting graduate from the incubator's university and an accomplished businessperson who, just before launching the incubator, had served for eight years in a high administrative position at his university. He acted as the first director of the incubator and his close links with successful business and political university alumni friends provided initial funding and helped consolidate the incubator start-up.

During the first three years of our research on the field, the two founding managers were co-managing almost all operations, with the director taking more leadership with financing and investor relations. In the third year of data collection, an external business coach was getting more involved with the managers and the following year, was named as the new director of the incubator. This person came with an academic background in finance and field experience in accompanying nascent firms in a close region of the incubator's location. From that time, the initial director left operations and moved to a position on the board of directors and the other founding manager stayed in support of the new director. It was a first time managing an incubator for all three managers. All three managers were observed and interviewed at various times during the four years, and, in all, six semi-structured interviews were conducted (n = 6), as well as multiple informal interviews in the form of open discussions on strategy and outlooks.

3.3.2. Incubated entrepreneurs

During the years on the field, nascent firm creation by the incubator went from 13 to 37. The selected entrepreneurs came from various backgrounds. An email for interviews was sent to all incubatees (26 at the time of the call), of which 14 accepted the call for interviewers, accounting for 11 firms in total. Of the 14 incubatees interviewed, 10 were met for in-person interviews at a time and place suitable for them and four were interviewed by phone. All 14 interviews (n = 14) took place in the same year, corresponding to year three of data collection.

The following Table 1 presents: 1) the 11 interviewed firms totalling 14 incubated entrepreneurs interviewed, 2) the team size at the time of interview, 3) the year in which they were interviewed during the four years on the field, 4) the phase of development at the time of interview, 5) if the firm is still active today, and 6) a short description of the type of project.

3.3.3. External stakeholders

External stakeholders consist of people who are called upon to support the incubator in the means of money, institutional backing, network and business and professional expertise. In this research, business experts are self-employed coaches that provide counselling in management, marketing, business development and other areas deemed relevant to the incubated entrepreneur's project. Professional experts offer their services from legal and accounting firms. In all, 28 semi-structured interviews were conducted with external stakeholders (n = 28). They include private and public financial investors (n = 10), academic collaborators (n = 6), business experts (n = 7) and professional experts (n = 5).

The following Table 2 specifies: 1) the diverse nature of interviewed stakeholders, 2) the year in which they were interviewed during the four years on the field and, 3) their year of entry in the incubator's network of stakeholders. The nature and times reflect the longitudinal aspect of the research and diversity of management situations observed during the time of research.

At the end, the number of participants for each category was sufficient to attain saturation with the objective of answering the research question. More data could have opened up new angles of research, but the collected data from interviews in addition to the other sources of data were sufficient to edify valuable theoretical and managerial contributions. Documentation, meeting participation and memos were among the data that helped attain such objectives.

3.4. Documentation, meeting participation and memos

From the outset, managers were welcoming and transparent, giving access the organization's documents. Thus, the founding documents, initial business plans, funding applications and agreements, partnership contracts agreements, minutes of board meetings, lists and descriptions of entrepreneurs and projects and results reports were among the documents explored throughout the time of research. This documentation enabled reconstructing the founding events and better understanding of the interests and influences at play within and around the incubator. It was also useful in determining the relevance of the research problem on hand, identifying key people to interview and formulating interview questions. It also helped to avoid raising issues that were clearly related

Table 1
Incubated entrepreneur participants.

Nascent Firms (number of people interviewed)	Team size at time of interview	Year of interview during time on the field	Phase of development at time of interview	Still active today	Type of project
1 (1)	3	3	Development stage	Yes	Compelling platform company for the bioindustry by providing instant access to critical information and analytics so biotech companies can maximize their performances.
2 (1)	4	3	Development stage	Yes	Clinical-stage biotech company focused on the discovery and engineering of antibodies targeting difficult proteins for therapeutic & diagnostic applications.
3 (1)	3	3	Development stage	Yes	Expert services for the analysis and visualization of medical images of all kinds.
4 (2)	3	3	Development stage	Yes	Powered sustainable desalination solution.
5 (1)	2	3	Early stage	Yes	Automated products for the analysis of harmful biological organisms in air conditioning and industrial water processes.
6 (1)	1	3	Early stage	No	Development of non-radioactive isotopes.
7 (2)	3	3	Early stage	No	Development of lithium-ion batteries.
8 (2)	3	3	Early stage	Yes	Development of video games.
9 (1)	2	3	Early stage	Yes	Online workforce management for shift manager.
10 (1)	2	3	Early stage	No	Development agency for process management software within an ecosystem framework.
11 (1)	1	3	Early stage	No	Odor treatment units.

Table 2
External stakeholder participants.

	Nature of Stakeholder	Year of interview during our time on the field	Year of entry in the incubator lifespan
1	Private financer (board member)	1	2
2	Private financer (board member)	1	2
3	Private financer (board member)	1	3
4	Private financer (board member)	1	3
5	Private financer (board member)	1	3
6	Public financer (board member)	1	2
7	Private financer	3	3
8	Public financer	3	4
9	Public financer	4	4
10	Public financer	4	5
11	Academic (board member)	2	1
12	Academic (board member)	2	1
13	Academic (board member)	2	2
14	Academic	3	2
15	Academic	3	3
16	Academic	3	4
17	Business expert	1	2
18	Business expert	1	2
19	Business expert	2	3
20	Business expert (board member)	2	3
21	Business expert	3	3
22	Business expert	4	4
23	Business expert	4	4
24	Professional expert (law)	3	2
25	Professional expert (law)	3	2
26	Professional expert (law)	4	3
27	Professional expert (accounting)	4	2
28	Professional expert (tech transfer)	4	3

to the documents in order to optimize the interviews towards the contribution of new data. Incubator business plans, funding agreements and reports and minutes of board meetings were most helpful in understanding incubator's objectives and intended performance indicators.

Furthermore, during the first year on the field, access was given for observant participation to two board meetings followed by two selection committee sessions. In the third year on the field, an active participation was offered and achieved in the co-development and animation of a full day's reflection on the incubator's objectives and success indicators. Eleven people participated in that day including board members, the two founding managers and the business coach soon-to-be director. No entrepreneurs were invited. This participation was instrumental in understanding the subtleties of power in play and complexity of managing diverse interests and perspectives. The available documentation was useful in preparing for the meeting participation and optimizing data collection through observation and written notes.

In sum, documentation review and meeting participation added to the collected data of interviews and informal conversations. As such, notes were gathered in the form of researcher's memos, serving as an evolving basis for reflections and initial analysis of collected data. In all, more than 60 memos in the form of text and figures were produced during the research. This helped clarify the research problem and question and, together, with ongoing literature reviews and participation in business incubation conferences and regional events, permitted continuous analysis of data in a broader context of the research. Documentation, participation, and memos were invaluable in the triangulation process of confronting ideas and methods from multiple sources.

In the end, this research process is marked by a series of iterations. First, the five SSM actions were mobilized on more than one occasion, in a non-linear participation fashion. As such, data collection and analysis via semi-structured interviews, documentation review, meeting and memos and took place simultaneously over a five-year period. This allowed for a more detailed reading of the incubator and its network management practices. SSM provided a structure to define a problem that is anchored in both the field under study and ongoing conversations in the scientific and professional incubation literature.

As such, following the principles of SSM, the long-time spent on the field allowed for: 1) an appropriation of the political and cultural forces and influences surrounding the incubator (Checkland and Poulter, 2010); 2) the establishment of a research partnership conducive transparency to co-construction of the research (Gillet and Tremblay, 2017); and 3) the progressive reinvestment of learning in the implementation of research guided by the principles of pragmatism, an abductive process, and the implementation of SSM actions.

4. Results

Observations of network management practices have led to the identification of both informal and formal practices. On the one hand, relationships of trust between some stakeholders and the desire to develop and respect the entrepreneurs' autonomy is conducive to a certain *laissez-faire* attitude and less formalism. On the other hand, profiles of certain stakeholders, contexts, and accountability guide more structural follow-up actions. As such, both relational and structural dimensions of social capital are observed and influence each other over time, contingent on individuals' profiles, subject matter, contexts, and time of observation on the field. An overview of selected observed management practices is presented in Fig. 2.

This figure highlights three key moments of the incubator under study management practices from which the presentation of the results is structured. These moments are: 1) entry and matchmaking with external stakeholders, 2) follow-up of provided support and, 3) exiting the incubator. These moments are commonly profiled in the incubation literature and an integral part of incubators' service offerings. For each moment, some observed practices and the interactions between incubated entrepreneurs, managers and external stakeholders are noted. Finally, a fourth section of the results relates contextual considerations of the incubator under study.

4.1. Entry and matchmaking with external stakeholders

The entry process is mostly described as informal, as related by entrepreneurs. One entrepreneur recounts informality when, following the selection committee meeting, he was told by a manager:

> "It's a beautiful project, it's perfect, it's good, we'll do something with you. […] We'll get you on board." And then it took […] probably a month or two. […] I said [to the manager], "You've been telling me for a long time that I'm getting on board with the incubator, and then I don't have a signed contract, I have nothing." […] Finally, one day, we signed the contract.

In the same sense, another entrepreneur explains how he experienced ambiguity with the confirmation of his entry in the incubator:

> Weeks go by […] [The manager] calls me back [saying], "Sorry for the delay, we were looking for the best mentor for you guys." There [I said something] like, "The best mentor? But I don't even know if we're accepted or not!" "What do you mean, accepted or not? It was

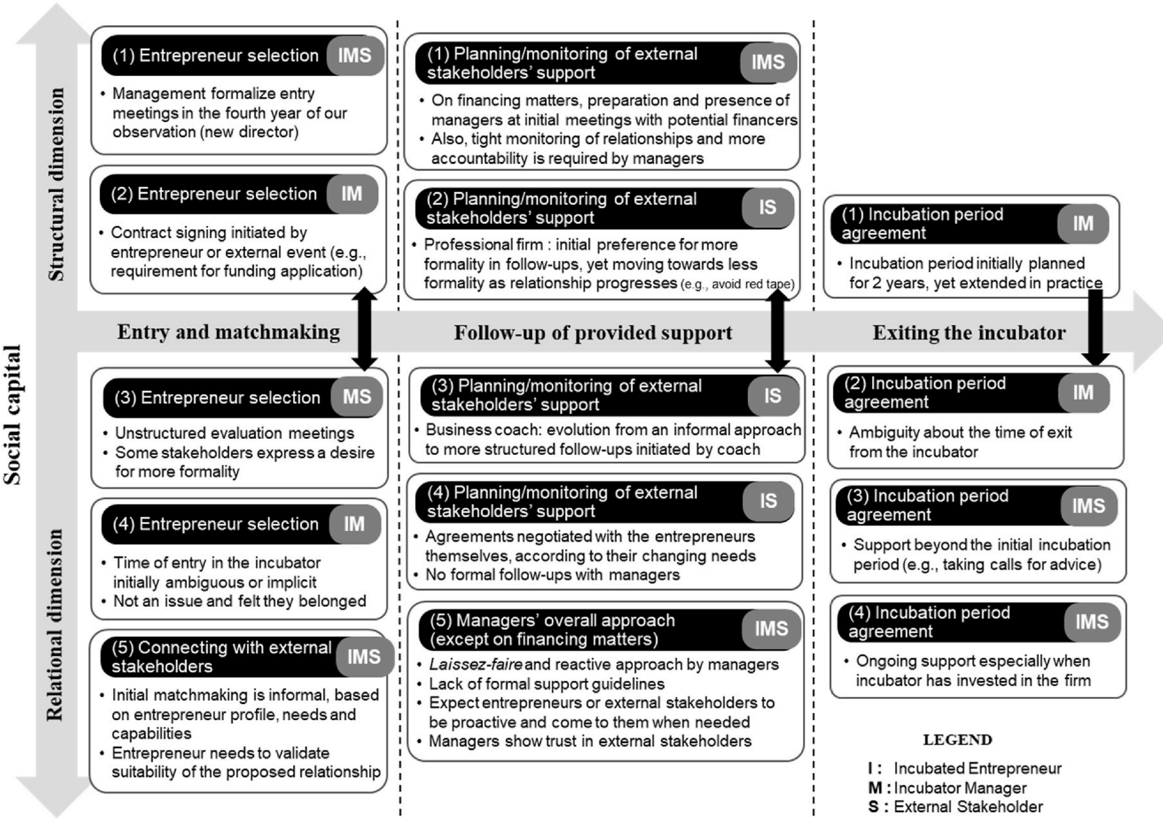

Fig. 2. Incubator management observed practices.

> clear that when I came out of that meeting, you were in. We spent two hours talking. Your project is very interesting, and we want to be your umbrella." […] That's how it started.

For these two entrepreneurs, officially knowing they were selected did not seem to matter, even if what seemed clear to the manager was not necessarily clear to them. Another entrepreneur mentions he had developed a sense of belonging even if making it official took a while. Such informality did not appear to bother this entrepreneur as follow-ups were taking place before signing an official contract:

> You never know if you are in [the incubator]. […] So at some point you feel like you're part of the gang and then it seems like they barely let you sign a contract at the beginning. […] Then, in fact, it took me months to get the contract signed and to make it official.

Having said that, occurrences of formalization of entries were observed while analyzing incubator's internal documents and as related by other entrepreneurs. Some entrepreneurs explain that requests for grants or meeting of potential financiers required official incubatee status. Such demands triggered a call for more formal actions on the part of managers who responded adequately, feeling somewhat constrained to do.

Furthermore, if managers were initially selecting entrepreneurs on their own, they invited new board members during the year two of our time on the field. These board members were investors in the incubator and their addition to the selection committee forced management to structure the entry process. From that time, meetings were planned and held to review applications and then meet with aspiring incubatees. Yet, from attending and observing such meetings, little structure was implemented as meetings took the form of open and spontaneous conversations where stakeholders displayed trust to one another's judgment. While the conviviality of this selection and evaluation process seemed to be appreciated by most stakeholders, some, interviewed privately, expressed the wish for more structure, as one states: "If we want there to be continuity […] we must be able to formalize the way we evaluate the files."

This sentiment was shared by others as the years went by and as different profiles of external stakeholders joined the selection committee. Thus, it was only in our fourth and last year of observation, with the appointment of a new director, that formalization of the selection and evaluation process really took place. The operational profile of the new director and the request for more structure by new stakeholders, some of which were not as closely linked to the founding manager, appeared to provoke more constrained accountability practices of the entry process.

Moreover, management's recruitment of external expertise and appointment to incubatees is rather informal and based on relationships. As contrary to the entry process, such informality was observed throughout the time on the field and was a shared practice by all managers. In this sense, an external business coach explains how he was approached by management:

> Well, the first company was [name the incubated enterprise]. Then the connection was made by [an incubator manager], who called in front of me [the entrepreneur] and he said, "look, I have someone here who could help you." Then, that's how it started.

After such informal introduction, links are forged, or not, between the entrepreneurs and external stakeholders. Managers leave it up to the entrepreneurs to validate whether the proposed external help is appropriate for their needs. One entrepreneur explains:

> [Incubator managers] have always said one thing: "We're putting you in touch. There's a contact we make. It doesn't force you to do anything. You can take it or not. Then even if you take it, you can leave as soon as it's done."

For that, managers are rarely present at the first meetings between entrepreneurs and external stakeholders. One of the managers mentions the fact that, although an external expert may be proposed to the incubated entrepreneur, it is also the entrepreneur's responsibility to explore the suitability of the proposed relationship. In this sense, the manager states:

> Then, I know very well that if there are questions, if there is a need to consult me, [the external stakeholder] will do it or the entrepreneur will do it. In any case, between you and me, it is often the entrepreneur who comes back to us.

Hence, throughout the time of study on the field, managers seemed to adapt to each entrepreneur's profile and capabilities and aimed towards developing responsibility and autonomy. Informally, the managers somehow gauge entrepreneurs' confidence and react accordingly. For example, one entrepreneur defends that he wants to be able to negotiate the relationship with the proposed stakeholders himself: "My partner and I are pretty resourceful people […] and then we like to negotiate our deals. […] [That] usually means we look to see if there's a fit on both sides."

Once the entrepreneur and the external stakeholder choose to collaborate, there is no management practice of consolidating a formal contractual agreement to frame their relationship. The observed agreements were mostly negotiated verbally, as one external stakeholder from a professional firm indicates:

> We have never given a written document; we have always worked together verbally […] There are so many cases by case […] I need to see their needs. […] I will meet with him [the entrepreneur].

It is therefore through discussions that these agreements can be co-constructed and adapted, within the framework of each coaching relationship and to meet the personalized needs of the entrepreneurs. In the end, managers generally trust entrepreneurs to build their relationships with external stakeholders and, based on their instinctive evaluation, are rather reactive while seeking a relationship that makes sense to all involved. As such, throughout our four-year study on the field, nothing forced management to structure these relationships.

4.2. Follow-up of provided support

Generally, during all our time on the field, observed follow-up management practices were informal and closer to a *laissez-faire* approach. This manager clarifies his reasoning by stating the importance of adapting follow-up mechanisms to the entrepreneurs: "Not all entrepreneurs have the same level of support […] In any case, an entrepreneur is a [free] electron, and you must let him go. If you put too many elements around, you'll kill him." The importance of considering the entrepreneurs' profile is also mentioned by an external stakeholder: "You know, entrepreneurs have their own personality, and if you want to fit an entrepreneur into a specific format, it's very difficult."

In this sense, external stakeholders share the fact that they have not received any formal guidelines from management regarding support and accompaniment processes. One of them believes that the relationship of trust between managers and external stakeholders may explain the lack of formalization:

> Look, no, I didn't have clear guidelines on how to do it. […] Not really any parameters on how to intervene. We had developed a trust, he [the manager] and I. And because I had been an entrepreneur before, for him it was a seal of authenticity and approval."

The entrepreneurial profile of this external stakeholder creates a level of trust that leaves the field rather open as to how the support and coaching of the entrepreneur should be deployed. On that, one manager states: "I think that if your coach has already done it [coaching], he will bring his procedures in-house."

That said, one of the coaches shares that, despite this *laissez-faire* attitude on the part of managers, he would like to see more formality in the monitoring of progress. He explains: "I think it really takes a very clear process with steps to be taken." This coach therefore proceeded, on his own, to the implementation of formal follow-ups with the entrepreneurs he supports. As this was an isolated case, management did not feel constrained to formally address this issue, nor implement a general practice to that effect.

To that effect, another external stakeholder shares: "I think that the coach is an entrepreneur […] he should be enlightened enough to tell [the incubator] that perhaps we should meet with the entrepreneur to discuss this situation." For another, the follow-ups with the managers were not perceived as an obligation: "I don't inform them [the incubator managers]. I work with the entrepreneur directly."

In both cases, the absence of a formal follow-up by the managers appeared to be based on a relationship of trust. Also, each external resources bring professional practices and ways of doing things. To that effect, formal reporting must not interfere with the time spent supporting entrepreneurs, as mentioned by an external stakeholder: "I must not spend more time doing administration than the time I spend on [helping] these businesses."

Therefore, external stakeholders understand that the responsibility for follow-up lies with them. This is also due to the limited resources of the incubator that restrict its capacity to manage relationships and expand its network of external resources. As one incubated entrepreneur confides:

> "The [incubator] is limited by its lack of resources. If they had more human resources, they could do more. Yes, it's in the hands of the entrepreneur, initially, it's very much in their hands. I think there's a click that could happen a lot faster if they [managers] had more human resources."

Having said that, observation of external network management practices showed more structuring management of social capital behaviours when it came to financing matters. Managers, entrepreneurs, and external stakeholders seem to share a consensus on the importance of formalization in this context. On financial matters, external stakeholders are managed to provide "support along the entire financing continuum," as one manager names it. Thus, very few meetings with financial stakeholders are left unattended and unmonitored by managers. One incubated entrepreneur describes the role of the managers in this context:

> It was [the manager] who introduced us to all the financiers. So, it was really important. […] He accompanied us in the financial set-up, then he accompanied us in all the meetings with the financiers. […] He prepared us well for the figures, they prepared us well for the presentation. […] You know, there were meetings, but after that, there was a lot of follow-ups.

These close follow-ups could be explained by the profile and ways of doing of financiers who expected more structured accountability and reporting. As the initial investors, closely linked to the managing founder, were more lenient on the financial reporting, the addition of new investors, public and private, tightened management practices of accompanying and reporting. This was also ignited from the fact that the founding manager and the newly appointed one, both have strong accounting and financial backgrounds. As such, a culture of structural management on financial matters was reinforced and sustained throughout the time of study and present at almost all meetings that were observed. One entrepreneur relates that management "[…] had a very strong hold on what we were doing because everything was tied to financing."

Moreover, in some cases, financiers of the incubator have a vested interest in making the nascent firms financially viable and profitable, even though the stated primary objective is to support the entrepreneurs. One entrepreneur affirms that "[…] the people from the [incubator] are investors too, they're always going to kind of stay close, because they're going to get dividends from our company."

4.3. Exiting the incubator

If the moment that marks the entry of entrepreneurs into the incubator sometimes seems ambiguous, the same can be said for exiting the incubator. Some literature and service offerings define incubation has a temporary support towards the autonomy and financial viability of entrepreneurs. To do so, it should encourage a certain turnover allowing the adhesion of new business projects and letting some go to flourish on their own. Despite this, one entrepreneur remains perplexed by the question:

> In my opinion, I came out of [the incubator], but there was no *rubber stamp* that you came out, you know. That communication wasn't done, […] but at some point, it must stop, you know. We must stand on our own two feet […] and then come back to the young [entrepreneurs] and share our experience.

Another entrepreneur shares his view on the subject: "Can we get out of [the incubator]? [Laughs]. That's a great question. No, I don't feel like I'm out, and I say that in a positive way." To back up his point, the entrepreneur recounts how, after a few years and a migration to another incubator and did not hesitate to call on the manager:

> I didn't even ask myself the question. […] You know, you come in, they say it's two years. Between you and me, it's nonsense. Especially if [the incubator] puts money into the company. After two years, they're not going to let you go. They're not going to let you down. They can't let you down.

Asked if the exit was discussed between the managers and the entrepreneur, the latter replies:

> No […] well it would be good to have that cleared up, you know, that 'it's in terms of years. That's my personal perception. Whether it's in terms of time. You know, they say two years in the contract, but you talk to people [who say], "ah I've been in [the incubator] for four years.' Either in terms of time or […] at a certain stage of the company's development.

One coach also raises the ambiguity associated with entrepreneurs exiting the incubator, noting the resource challenge that this can pose:

> Well, listen, for sure, for me, what I have trouble understanding at [the incubator] is the whole process. To me, there's a beginning and then there's an end to incubation. The beginning is easy to identify. The end is difficult. […] There needs to be milestones to say 'this is where you need to go' … because there are limited resources at [the incubator].

Having said that, one could argue that, as an entrepreneur stated previously, limited resources might be a condition restricting clarity and capability of management of incubatees' exit. Also, entrepreneurs did not put any pressure on management to clarify and confirm such exit. Both, management, and entrepreneurs, seem to find value with such informality and continue nurturing their relationship. In the four years on the field, no explicit requests to clarify exiting of the incubator were observed.

4.4. Context of the start-up and evolution of the incubator

These three key moments of observed management practices must be placed in the evolving context of the incubator under study. The data collected over a four-year period revealed changes in management appointments and practices that oscillated between the informal and the formal. For example, accounting and legal professionals from external firms who were used to more formality gradually adjusted their ways by recognizing that entrepreneurs are "free electrons", as it was stated. Other stakeholders, open to less formality from the outset, expressed a growing desire for structure to "ensure continuity" in processes.

These evolving positions on how to manage external networks must also be understood from the fact that the incubator under study also was a start-up. In this regard, the entrepreneurs interviewed at the beginning of the study acknowledged that:

> The [incubator] is a *startup,* right? [Laughs]. […] It was okay for him to be scrappy. The last thing he needed was to be a perfectionist. He had to break down doors, get as many people [as possible] around the table.

What's more, the uncertainty and ambiguity experienced made this entrepreneur say, after a few years of support, that this way of doing things would be in line with the reality of the entrepreneurial world:

> You know, sometimes I think, I wish that, basically, [managers] were more proactive' […] you know now, with a little step back […] it really allowed me to develop a good autonomy and then a good knowledge of how business start-ups work.

Breaking down doors and living with uncertainty appears to be the way the founding manager had to go about his business when he recounts how few people believed in the concept of incubation at the time of our entry on the field. This manager also had to carry the weight of regrouping and convincing his friends, as initial investors, to tag along with his vision. It is only in the third year of our study that the founding manager hired his successor-to-be. Pressures from new stakeholders requiring different reporting practices somewhat forced such a hire earlier than planned. This new manager brought an operational profile to the incubator and with it some intentions to structure some of its practices.

Yet, this new manager also emphasized that process guidance dans structure must consider the fact that entrepreneurs are responsible for the success of their own businesses:

> Well, I take things to heart a lot, but we don't own the companies. They are people who have taken the risk to start a business. In fact, we give them the best of our knowledge, our expertise. We try to guide them as much as possible. After that, well, you know, they own the big piece.

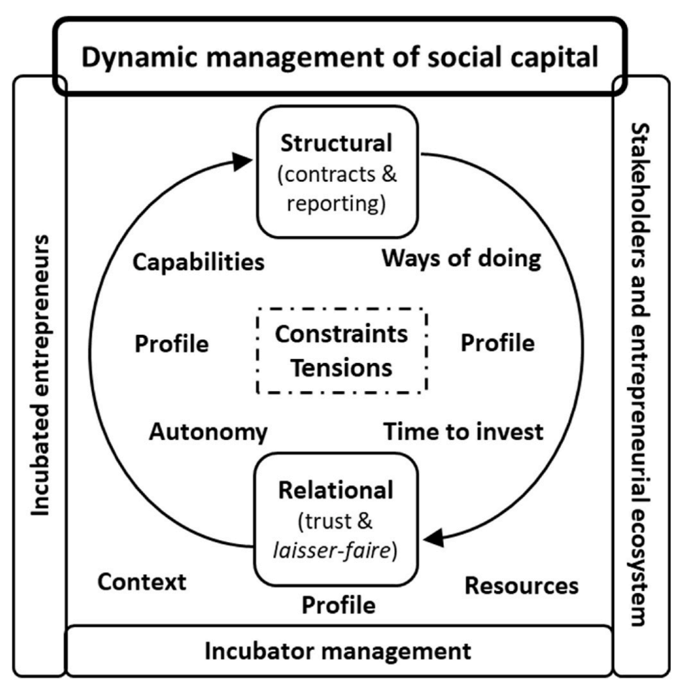

Fig. 3. Theoretical framework of the dynamic management of social capital.

5. Discussion

In sum, the analysis of these key moments of incubation shows a dynamic management of social capital, considering entrepreneurs, stakeholders and managers' profiles and contextual elements of their relationships. As shown in Fig. 3 below, the choice of whether or not to formalize certain practices is configured according to factors such as: the preferences and comfort level of the entrepreneurs and stakeholders involved (e.g., based on their previous professional experience, level of autonomy, ways of doing, capabilities, profile and personality), the nature and moment of the support (e.g., financial or not, later entry process), the available resources (e.g., time granted for support rather than reporting, context of the start-up of the incubator, initial links closer to a manager) and managers (e.g., profile, experience, time and context of decision-making in the incubator's development).

As such, it is the recognition of the dynamic nature of social capital, in ongoing interactions, that is key. Results show that recognition, in action, of such a dynamic environment is not the sole consequence of the manager's intentions and actions. A dynamic management of social capital is triggered by emerging constraints and tensions from interactions between entrepreneurs, external stakeholders, and managers. Thus, formalizing or not management practices is not a benchmark of good management. It is rather how managers, entrepreneurs, and external stakeholders, individually and collectively, can read the world around them and adapt when constrained by certain elements that can generate tensions. When receptive and welcoming of such constraints and tensions, management practices can be configured from localized and specific context and time of each incubator.

For managers, this counters any urge to standardize all management processes. During the four-year observation period, examples of constraints and tensions provoking dynamic management came from a request for an official incubatee status; new board members joining the entry process; expressed autonomy by entrepreneurs in choosing external experts; financiers drawing the lines of reporting; a coach instigating his own follow-up procedures; and an external professional expert favouring verbal agreement, to written contracts.

During the four-year study, managers, but also, entrepreneurs and external stakeholders, were observed instilling and maintaining some relational type of management practices, where trust and *laisser-faire* were displayed. At other times, they were also putting into place structural management practices from contracts and reporting. Yet, all three parties to the incubator's social capital had to navigate within these emerging and evolving parameters. The business incubator is a vital environment for such evolving interactions (Apa et al., 2017).

In the end, the dynamic management of social capital is not only about managers, but also a question of all parties involved understanding and accepting the nature of an incubation environment. This confirms literature on how incubator managers are part of collective processes with expected outcomes influenced by various parties with sometimes competing demands (Kakabadse et al., 2020). This is in line with literature showing that constrained between individual ambitions and organizational objectives, tensions can rise when favouring dynamic management of social capital (Lanham-New, 2020). It is also in line with research describing the entrepreneurial environment as one of change, ambiguity, and movement, woven according to multiple factors (Engel et al., 2017). In the incubation context, such factors include people's needs, capabilities, desires and also the nature, purpose, and time of interactions. And this is framed by set objectives of the incubation process within a wider system of entrepreneurship support.

This original theoretical and empirical framework of shedding light on the dynamic management of social capital of incubators, is a direct contribution to the rare emerging theories of incubation. This framework is built at the junction of specific ideas emanating from the incubation literature as well as from network theory and social capital theory. It contributes to the scarce scientific research realm of processual and longitudinal studies of incubation focused on relational and intangible factors from a situated perspective (Kakabadse et al., 2020; Theodorakopoulos et al., 2014).

In light of selected literature, some contributions of the dynamic management of social capital of the incubator under study is highlighted below in the frame of 1) complementarity of management practices, 2) shared responsibility, 3) proactivity of incubated entrepreneurs and 4) management and performance.

5.1. Complementarity of management practices

The results of this case study support studies asserting that informal and formal management practices can be complementary (Cao and Lumineau, 2015; Carson et al., 2006; Poppo and Zenger, 2002). Indeed, the management of external networks observed is deployed in both a relational and structuring manner. This management is orchestrated through moments when, on the one hand, the desired trust and autonomy invite a *laissez-faire* approach and, on the other hand, the profile of the stakeholders and the accountability external to the relationship guide more structuring follow-up actions.

In the case under study, network management is thus presented as an evolutionary process, conditioned by the contexts of interactions between stakeholders and the negotiation between their perspectives and expectations with respect to this management. Contrary to what some researchers on incubation processes propose (e.g., Aaboen, 2009; Bergek and Norman, 2008; Bruneel et al., 2012; Hansen et al., 2000), the results suggest that formalization of practices are not always desired or perceived as necessary to achieve the intended goals. Rather, multiple configurations of incubated entrepreneurs' social capital management would exist. For example, the more informal, relational dimension did not seem to be an issue when it allowed for the respect of the autonomy and a certain accountability of the entrepreneurs (e.g., in monitoring and follow-up). It was also not an issue when relationships between stakeholders were based on trust.

This is consistent with other recent work that suggests that trust creates value and increases the effectiveness of relationships in an incubation context (Han et al., 2022). The people that were interviewed also testified to the importance of adapting to the personalities and needs of entrepreneurs in each coaching relationship. The benefits of more flexible management conditions support recent research on nascent entrepreneurs that highlight how entrepreneurs are faced with ambiguity and incubator management must facilitate social embeddedness for stronger and more suitable ties (Busch and Barkema, 2022; Nicholls-Nixon et al., 2022; Nicholls-Nixon and Valliere, 2021). This is also in line with literature noting how informality leaves management with a certain leverage to adapt the composition of its social network, limiting the negative liability of a mismatch (Gargiulo and Benassi, 1999; Labianca and Brass, 2006).

Moreover, formal management was also observed when constraints and tensions related to accountability issues arose (e.g., funding applications), inviting more structure. This reinforces research highlighting how financiers often use more formal management mechanisms (Strätling et al., 2012). In doing so, the structural dimension of social capital comes to surface when dependent on a surrounding structure and organized efforts by managers (Inkpen and Tsang, 2005; Nahapiet and Ghoshal, 1998). Despite this more formal structure, trust in these processes is mentioned by the entrepreneurs under study, highlighting and confirming research that claims that trust building also has its place in this type of more structuring context (Strätling et al., 2012).

5.2. Shared responsibility

The results also show that management of support follow-ups is co-constructed through the relationships between the stakeholders. In this sense, the relationships between entrepreneurs and external stakeholders are forged - or not - according to their initial interactions. The relational capital, formed by external relationships with the incubator, is first initiated and mediated by the incubator managers who put them in contact with the entrepreneurs, in an informal manner. This observed mediating role confirms research on this topic (Bergek and Norman, 2008; Rothschild and Darr, 2005). These links can be created spontaneously, improvised and according to the needs that arise, making selection procedures a matter of intuition and managers' experience. Subsequently, incubated entrepreneurs play a role in validating the adequacy of this relationship (the *fit*), and its follow-up. The managers therefore trust the entrepreneurs' autonomy and adopt a more *laissez-faire* management style. This confirms research on the positive impact when incubation service offerings are aligned with entrepreneurs' needs (Nicholls-Nixon and Valliere, 2021). From this same literature, surplus fit is noted when an incubator provides services that are not adequate to incubatees needs and such mismatch can have a negative effect on nascent firms' performance (Nicholls-Nixon and Valliere, 2021). In the context of the case under study, wasting entrepreneurs and external stakeholders' time and showing a lack of trust could have led to different results.

The lack of formalization in the management of these relationships means that this relational capital, at the time of the study, is not transformed into structural capital nested within the incubator, as some authors claim (Hormiga et al., 2011). Rather, network management is influenced by informal relationships, ambiguity, and uncertainty (Carson et al., 2006; Engel et al., 2017). To this end, observed situations reveal a benevolent and rather reactive *laissez-faire* management approach unless constrained to act differently. Such practices leave room for the development of entrepreneurs' autonomy, which is essential in the context of business start-ups. The positive effect of this management method on entrepreneurs confirms recent studies in this regard (Bergman and McMullen, 2022). This is also in line with the valued capacity of nascent entrepreneurs to mobilize their social network and impact entrepreneurial performance (Lamine et al., 2019). It also reiterates the relevance of the literature on the possible negative effects of strong management intervention imposing its social capital that might provoke a mismatch (Nicholls-Nixon and Valliere, 2021).

Thus, the supply of services, the resources mobilized and what can structure interactions with stakeholders are a shared responsibility that is operationalized according to the context and the stakeholders' profiles. These findings add to research that views networks as complex adaptive systems (Galkina and Atkova, 2020; Hite and Hesterly, 2001), where relationships are created, maintained, developed, and broken (Slotte-Kock and Coviello, 2010), highlighting the dynamic and evolving nature of networks (Galkina and Atkova, 2020; Spigel, 2017).

5.3. Proactivity of incubated entrepreneurs

The results also support studies that emphasize the proactive role of entrepreneurs in generating their social capital (Hite, 2005; Hughes et al., 2007; Shih and Aaboen, 2019). In this sense, the entrepreneurs in this study report autonomy and responsibility for learning the knowledge they are exposed to during the external support processes, confirming the importance of an incubation environment that promotes dynamic learning (Fang et al., 2010). The autonomy and trust granted to entrepreneurs by incubator managers become conditions that allow and encourage their proactivity in managing external resources. The results show that this approach encourages entrepreneurs to gain confidence in the choice of resources proposed and to explore other avenues if necessary. They rely on their skills and experience to decide what is best for them. These results are in line with other studies that show how the personal network is often privileged during the creation of businesses (Grossetti and Barthe, 2008). To that effect, the entrepreneurs said that they felt supported by the incubator managers in their decision-making, while at the same time calling upon their own human capital to manage relationships with external resources.

To this end, the entrepreneurs' proactivity is also expected throughout the external support process. For example, for the managers, the entrepreneurs are responsible for the follow-ups with the stakeholders invited to support them. The incubator does not provide mechanisms for planning formal meetings with external stakeholders or for following up on the support, except with the financiers. This type of network management observed is reminiscent of the continuous self-directed bottom-up processes that some researchers refer to (Antunes et al., 2021; Ritter et al., 2004). In this sense, the findings raise the fact that relationships must be a two-way conduit between entrepreneurs and their external supporters (Bergman and McMullen, 2022). This is also reflected in research that notes the dynamic and emergent nature of start-ups and the proactivity expected of entrepreneurs in managing networks (Hite, 2005).

Managers thus adopt a rather reactive posture by waiting for entrepreneurs - or external stakeholders - to come to them in case of a specific need. This supports network business strategy literature on the benefits of management of control shifting towards management of reacting (Håkansson and Snehota, 1989). Although some external stakeholders have made requests for more formal follow-ups, they also point out the advantages of a low level of formality (e.g., avoiding red tape and respecting the desire for autonomy in the support relationship).

5.4. Management and performance

Formalized management practices and institutionalized networks have been associated with better incubator performance (Aaboen, 2009; Bergek and Norman, 2008; Bruneel et al., 2012; Hansen et al., 2000). In this study, it was noted that the incubator exhibits success based on indicators of the number of startups, investment dollars in those startups and new job creation. While it is not possible to directly link network management practices to the performance of the incubator, it can be interpreted that the lack of formality does not seem to have hindered this performance. That said, other contexts could also have provoked more structuring management practices in the same interaction situations observed. The results therefore suggest that, depending on the context, several configurations of management practices can lead to performance. To this end, the results corroborate studies that have demonstrated the positive impact on performance of contractual and relational mechanisms that complement and substitute each other (Cao and Lumineau, 2015; Chen et al., 2013). This helps explain the contradictions found in studies that link management practices to performance, at least partially (Bakkali et al., 2013; Barbero et al., 2012; Eveleens et al., 2017).

Finally, the findings support the importance of adopting more holistic approaches to illuminate the multiple adjustment trajectories between entrepreneurs and their collaborative environment (Douglas et al., 2020; Khiari et al., 2015), taken from a process rather than a relationship structure perspective (Galkina and Atkova, 2020). In the context of this research, network management is characterized by the creation of an enabling environment for stakeholder interactions where relationships are discussed and negotiated. It is a configuration combining relational and structural dimensions in managing the formation and maintenance of entrepreneurs' social capital. The management of relationships by stakeholders - whether managers, entrepreneurs, or external stakeholders - seems optimal for supporting the action of entrepreneurs while promoting their proactivity, the autonomy of external stakeholders and the acceptance of what may emerge throughout the process.

Thus, the question of whether to formalize external network management processes appears less relevant, as several configurations could be possible depending on the context and the stakeholders, and these configurations evolve over time. In the end, network management represents a deeply social process, characterized by emergence to meet, above all, human needs (Ahmad and Ingle, 2011; Jack et al., 2010).

6. Conclusion

6.1. Strengths and limitations

The collection of data over more than four years within a performing incubator has made it possible to produce results that are sensitive to the dynamic and evolving nature of the management of social capital. It has made explicit management practices in which the formal and the informal coexist within relationships that evolve according to the profiles of the people involved and the support situations. It has allowed observation of the effects of inter-influence between stakeholders and perspectives regarding the need to formalize or not management practices. Moreover, the key moments around which the results of this study are structured - the entry of entrepreneurs in the incubator, the follow-up to the support provided, and the exit - are common to all types of incubators, which also contributes to the transferability of the results to other incubation contexts (Miles and Huberman, 1994).

At the conceptual level, the research contributes to the business incubation management literature by empirically helping in understanding how, over time, incubation external networks are managed. The use of incubation literature, network theory and social capital has proven to be relevant for studying the diversity of network management situations and interactions between stakeholders in an incubation context evolving over time. Social capital, in its relational dimension, was forged through the development of a relationship of trust in people, considering the processes that evolve, and the meaning given to the support relationships. In its structural dimension, social capital was formed in more specific contexts of constraints and tensions triggering practices of contracting and reporting yet, without tainting all management practices with formalism. Hence, a theoretical framework of a dynamic management of social capital is proposed.

At the managerial level, the results also suggest a cautionary note about the formal agreements that incubators negotiate with external stakeholders, even before interactions with entrepreneurs have taken place. In many cases, incubator managers negotiate service agreements at a discount or with firms they deem credible. In addition, the close ties between managers and their personal networks necessarily guide the matching of individuals. From an empowerment perspective, many of the interviewed individuals believed that, in the end, the choice of external stakeholders should be left to the incubated entrepreneurs, thus limiting negative liability of social capital. This requires a managerial profile and a managing posture and structure in line with what is expected from the incubation process. Not all managers fit to what is needed and as seen over time, some initial relations and means to engage with social capital must evolve. Thus, like the case under study and any start-up, a time might come when a change in personnel or adjustments in the way of doing things is required. As new stakeholders enter the incubation environment, managing social capital in a dynamic matter might not be welcomed by all managers and this should be considered while hiring managers and evaluating existing ones.

In this sense, the incubation environment, like that of start-ups, is complex and changing. It requires open, dynamic management actions adapted to the situations and stakeholders involved. For those called upon to manage incubators, an openness and understanding of these environments are required. The incubator needs to reconfigure itself and, to do so, must consider the people and situations of intervention. For those who fund or set up these entrepreneurial support organizations and select the people to manage them, a process management focused on the objectives of incubation must guide the actions. To do so, the human and relational dimensions of these environments must remain central to the identification and achievement of these objectives. To illustrate this, when interviewed and asked what the main lesson learned was for building one of the most successful business incubators in the United States, a founding manager said: “Put the entrepreneurs together and let the magic happen.”

In addition, some limitations to the study should be noted. First, it concerns a unique case of a technological incubator in a university context. Also, the results are based on data collection that took place when the incubator was itself in its start-up phase, an important contextual element to consider when interpreting the results. Thus, the incubated entrepreneurs and external stakeholders encountered were part of the first relationships implemented by the incubator’s managers. From this perspective, it could be relevant to study the network management practices during the subsequent phases of the incubator’s development. In the same sense, it would be interesting to explore how entrepreneurs use the networks once they leave the incubator. Also, while this research is focused on the process of managing the social capital of incubation, other human and structural dynamics are in play when isolating such a specific feature (Kakabadse et al., 2020). As such, cognitive, relational, and environmental mechanisms affecting management processes of incubation, while not the direct object of this research, must be considered when attempting to generalize findings to other localized contexts (Ahmad, 2014; Bank et al., 2017). Finally, subsequent studies could include other levels of analysis of stakeholder perspectives, such as those of the entrepreneurial teams and the ecosystem around the incubator.

6.2. Towards a human and holistic approach to incubation networks

Finally, the study of the incubation context of nascent firms allows us to look at the emerging and evolving dimensions of networks, as well as their profoundly social and human character. As this research did, inviting various disciplines into the field of entrepreneurship research could allow for the deepening and development of new knowledge on the “human” dimension of incubation network management, and of entrepreneurship in general. It can introduce more refined mechanisms of observation, data collection, and analysis, and offer, as some researchers have called for, a more refined understanding of entrepreneurial behaviour (Douglas et al., 2020; Eveleens et al., 2017).

Debates remain open about how network theory and social capital concepts operationalize as an analytical tool (Jack, 2010). Yet, sociologists and interactionists propose concepts and methodologies to explore the “situational aspects of human conduct” (Denzin, 1969, p. 926), where exchange between humans, weaves, unravels, and finds relevance to structuring when the situation lends itself to it (Becker, 2005; Blumer, 1954; Paillé, 2010). These sensitizing theoretical concepts could offer relevant avenues for a new perspective on incubation networks.

In this sense, anthropology proposes to “understand human beings as projects of mutual value creation” considering the changing environment in which these projects take place (Graeber, 2013, p. 238). Adopting a systemic approach could also be relevant, along with the Soft Systems Methodology (SSM) used in this study, by helping to contextualize the relationships between stakeholders and their evolution in the context of an incubator setting. In the end, it allows to broaden the scope and look at multiple components of a system that shape, influence, and energize interactions (Mingers and White, 2010).

Data availability

Data will be made available on request.

Acknowledgement

Grant acknowledgement:Fonds de recherche du Québec -Société et culture (FRQSC).

References

Aaboen, L., 2009. Explaining incubators using firm analogy. Technovation 29 (10), 657–670. https://doi.org/10.1016/j.technovation.2009.04.007.

Adlešič, R.V., Slavec, A., 2012. Social capital and business incubators performance: testing the structural model. Econ. Bus. Rev. 14 (3), 201–222. https://doi.org/10.15458/2335-4216.1227.

Aernoudt, R., 2004. Incubators: tool for entrepreneurship? Small Bus. Econ. 23 (2), 127–135. https://doi.org/10.1023/B:SBEJ.0000027665.54173.23.

Aerts, K., Matthyssens, P., Vandenbempt, K., 2007. Critical role and screening practices of European business incubators. Technovation 27 (5), 254–267. https://doi.org/10.1016/j.technovation.2006.12.002.

Agranoff, R., McGuire, M., 2001. Big questions in public network management research. J. Publ. Adm. Res. Theor. 11 (3), 295–326.

Ahmad, 2014. A mechanisms-driven theory of business incubation. Int. J. Entrepreneurial Behav. Res. 20 (4), 375–405. https://doi.org/10.1108/IJEBR-11-2012-0133.

Ahmad, A.J., Ingle, S., 2011. Relationships matter: case study of a university campus incubator. Int. J. Entrepreneurial Behav. Res. 17 (6), 626–644. https://doi.org/10.1108/13552551111174701.

Alaassar, A., Mention, A.L., Aas, T.H., 2021. Exploring a new incubation model for FinTechs: regulatory sandboxes. Technovation 103, 1–14. https://doi.org/10.1016/j.technovation.2021.102237.

Albert, P., 2003. Les incubateurs sont-ils au service des entrepreneurs? Réalités Ind. 27–29 [Proquest]. https://www.proquest.com/scholarly-journals/les-incubateurs-sont-ils-au-service-des/docview/221217163/se-2.

Aldrich, H.E., Zimmer, C., 1986. Entrepreneurship through social networks. In: The Art and Science of Entrepreneurship, pp. 3–23. Ballinger.

Alsos, G.A., Hytti, U., Ljunggren, E., 2011. Stakeholder theory approach to technology incubators. Int. J. Entrepreneurial Behav. Res. 17 (6), 607–625. https://doi.org/10.1108/13552551111174693.

Anadon, M., Guillemette, F., 2007. La recherche qualitative est-elle nécessairement inductive? Recherches qualitatives, Hors Série (5), 26–36. http://www.recherche-qualitative.qc.ca/documents/files/revue/hors_serie/hors_serie_v5/anadon.pdf.

Antunes, L.G.R., de Castro, C.C., Mineiro, A.A.D.C., 2021. Network orchestration: new role of business incubators? Innov. Manag. Rev. 18 (1), 51–68. https://doi.org/10.1108/INMR-12-2019-0151.

Apa, R., Grandinetti, R., Sedita, S.R., 2017. The social and business dimensions of a networked business incubator: the case of H-Farm. J. Small Bus. Enterprise Dev. 24 (2), 198–221. https://doi.org/10.1108/JSBED-07-2016-0103.

Arlotto, J., Sahut, J.M., Teulon, F., 2012. Comment les entrepreneurs perçoivent l'efficacité des structures d'accompagnement? Gestion 29 (6), 31–43. https://doi.org/10.3917/g2000.296.0031, 2000.

Arlotto, J., Pacitto, J.C., Saingre, J., 2015. Les incubateurs de l'enseignement supérieur parient sur l'effet-réseau. Entreprendre & Innover 3 (26), 27–35. https://doi.org/10.3917/entin.026.0027.

Ascigil, S.F., Magner, N.R., 2009. Business incubators: leveraging skill utilization through social capital. J. Small Bus. Strat. 20 (1), 19–34.

Autio, E., Klofsten, M., 1998. A comparative study of two European business incubators. J. Small Bus. Manag. 36 (1), 30.

Bakkali, C., Messeghem, K., Sammut, S., 2013. Pour un outil de mesure et de pilotage de la performance des incubateurs. Manag. Int. /Int. Manag. /Gestión Internacional 17 (3), 140–153. https://doi.org/10.7202/1018273ar.

Bank, N., Fichter, K., Klofsten, M., 2017. Sustainability-profiled incubators and securing the inflow of tenants–The case of Green Garage Berlin. J. Clean. Prod. 157, 76–83. https://doi.org/10.1016/j.jclepro.2017.04.123.

Barbero, J.L., Casillas, J.C., Ramos, A., Guitar, S., 2012. Revisiting incubation performance: how incubator typology affects results. Technol. Forecast. Soc. Change 79 (5), 888–902. https://doi.org/10.1016/j.techfore.2011.12.003.

Becker, H.S., 2005. Inventer chemin faisant: comment j'ai écrit *Les mondes de l'art*. In: Mercure, D. (Ed.), L'analyse du social: les modes d'explication. Presses Université Laval, pp. 57–74.

Beesley, L., 2004. Multi-complexity in the management of knowledge networks. J. Knowl. Manag. 8 (3), 71–100. https://doi.org/10.1108/13673270410541051.

Bergek, A., Norman, C., 2008. Incubator best practice: a framework. Technovation 28 (1), 20–28.

Bergman, B.J., McMullen, J.S., 2022. Helping entrepreneurs help themselves: a review and relational research agenda on entrepreneurial support organizations. Entrep. Theory Pract. 46 (3), 688–728. https://doi.org/10.1177/10422587211028736.

Bibeau, J., 2019. La pratique d'institutionnalisation des interactions auprès des réseaux externes et son impact pour l'incubateur d'entreprises (dissertation). Université de Sherbrooke.

Blumer, H., 1954. What is wrong with social theory? Am. Socio. Rev. 19 (1), 3–10.

Bøllingtoft, A., 2012. The bottom-up business incubator: leverage to networking and cooperation practises in a self-generated, entrepreneurial-enabled environment. Technovation 32 (5), 304–315. https://doi.org/10.1016/j.technovation.2011.11.005.

Bøllingtoft, A., Ulhoi, J.P., 2005. The networked business incubator: leveraging entrepreneurial agency? J. Bus. Ventur. 20 (2), 265–290. https://doi.org/10.1016/j.jbusvent.2003.12.005.

Bowen, G.-A., 2006. Grounded theory and sensitizing concepts. Int. J. Qual. Methods 5 (3), 2–9.

Brass, D.J., Galaskiewicz, J., Greve, H.R., Tsai, W., 2004. Taking stock of networks and organizations: a multilevel perspective. Acad. Manag. J. 47 (6), 795–817. https://doi.org/10.2307/20159624.

Bruneel, J., Ratinho, T., Clarysse, B., Groen, A., 2012. The evolution of business incubators: comparing demand and supply of business incubation services across different incubator generations. Technovation 32 (2), 110–121. https://doi.org/10.1016/j.technovation.2011.11.003.

Burks, A.W., 1946. Peirce's theory of abduction. Philos. Sci. 13 (4), 301–306.

Burt, R.S., 2000. The network structure of social capital. Res. Org.l Behav. 22, 345–423. https://doi.org/10.1016/S0191-3085(00)22009-1.

Busch, C., Barkema, H., 2022. Planned luck: how incubators can facilitate serendipity for nascent entrepreneurs through fostering network embeddedness. Entrep. Theory Pract. 46 (4), 884–919. https://doi.org/10.1177/1042258720915798.

Calza, F., Dezi, L., Schiavone, F., Simoni, M., 2014. The intellectual capital of business incubators. J. Intellect. Cap. 15 (4), 597–610. https://doi.org/10.1108/JIC-07-2014-0086.

Cao, Z., Lumineau, F., 2015. Revisiting the interplay between contractual and relational governance: a qualitative and meta-analytic investigation. J. Oper. Manag. 33–34, 15–42. https://doi.org/10.1016/j.jom.2014.09.009.

Carayannis, E.G., Von Zedtwitz, M., 2005. Architecting gloCal (global-local), real-virtual incubator networks (G-RVINs) as catalysts and accelerators of entrepreneurship in transitioning and developing economies: lessons learned and best practices from current development and business incubation practices. Technovation 25 (2), 95–110. https://doi.org/10.1016/S0166-4972(03)00072-5.

Carson, S.J., Madhok, A., Wu, T., 2006. Uncertainty, opportunism, and governance: the effects of volatility and ambiguity on formal and relational contracting. Acad. Manag. J. 49 (5), 1058–1077. https://www.jstor.org/stable/20159816.

Chabaud, D., Ehlinger, S., Perret, V., 2004. Septembre). L'incubation d'entreprises: la nouvelle frontière européenne. Journées Nationales des IAE, Lyon, France. Communication presented at the *17*^{e}.

Checkland, P., 2000. Soft systems methodology: a thirty year retrospective. Syst. Res. Behav. Sci. 17, S11–S58. https://doi.org/10.1002/1099-1743(200011)17:1+<::AID-SRES374>3.0.CO;2-O.

Checkland, P., 2010. Researching real-life: reflections on 30 years of action research. Syst. Res. Behav. Sci. 27 (2), 129–133. https://doi.org/10.1002/sres.1019.

Checkland, P., Poulter, J., 2010. Soft systems methodology. In: Systems Approaches to Managing Change: A Practical Guide. Springer, pp. 191–242.

Chen, C., Zhu, X., Ao, J., Cai, L., 2013. Governance mechanisms and new venture performance in China. Syst. Res. Behav. Sci. 30 (3), 383–397. https://doi.org/10.1002/sres.2178.

Colbert, C., Adkins, D., Wolfe, C., LaPan, K., 2010. Best practices in action: guidelines for implementing first-class business incubation programs. In: National Business Incubation Association Publications, second ed. https://inbia.org/wp-content/uploads/2018/06/Bestpractices-in-Action-2011.pdf?x84587

Colombo, M.G., Delmastro, M., 2002. How effective are technology incubators: evidence from Italy. Res. Pol. 31 (7), 1103–1122. https://doi.org/10.1016/S0048-7333(01)00178-0.

Dagnino, B.G., 2004. Complex systems as key drivers for the emergence of a resource and capability-based interorganizational network. Emergence 6 (1–2), 61–69.

Denzin, N.K., 1969. Symbolic interactionism and ethnomethodology: a proposed synthesis. Am. Socio. Rev. 34 (6), 922–934. https://doi.org/10.2307/2095982.

Douglas, E.J., Shepherd, D.A., Prentice, C., 2020. Using fuzzy-set qualitative comparative analysis for a finer-grained understanding of entrepreneurship. J. Bus. Ventur. 35 (1), 105970 https://doi.org/10.1016/j.jbusvent.2019.105970.

Dubini, P., Aldrich, H., 1991. Personal and extended networks are central to the entrepreneurial process. J. Bus. Ventur. 6 (5), 305–313. https://doi.org/10.1016/0883-9026(91)90021-5.

Duschek, S., 2004. Inter-firm resources and sustained competitive advantage. Manag. Rev. 15 (1), 53–73. https://www.jstor.org/stable/41783450.

Dutt, N., Hawn, O., Vidal, E., Chatterji, A., McGahan, A., Mitchell, W., 2016. How open system intermediaries address institutional failures: the case of business incubators in emerging-market countries. Acad. Manag. J. 59 (3), 818–840. https://doi.org/10.5465/amj.2012.0463.

Dyer, J.H., Singh, H., 1998. The relational view: cooperative strategy and sources of interorganizational competitive advantage. Acad. Manag. Rev. 23 (4), 660–679. https://doi.org/10.2307/259056.

Engel, Y., Kaandorp, M., Elfring, T., 2017. Toward a dynamic process model of entrepreneurial networking under uncertainty. J. Bus. Ventur. 32 (1), 35–51. https://doi.org/10.1016/j.jbusvent.2016.10.001.

European Commission, 2002. Benchmarking of Business Incubators [Report]. Enterprise Directorate General, European Commission, Centre for Strategy and Evaluation Services, Brussels.

Eveleens, C.P., van Rijnsoever, F.J., Niesten, E.M., 2017. How network-based incubation helps start-up performance: a systematic review against the background of management theories. J. Technol. Tran. 42 (3), 676–713. https://doi.org/10.1007/s10961-016-9510-7.

Fang, S., Tsai, S., Lin, J., 2010. Leveraging tenant-incubator social capital for organizational learning and performance in incubation program. Int. Small Bus. J. 28 (1), 90–113. https://doi.org/10.1177/0266242609350853.

Fann, K.T., 2012. Peirce's Theory of Abduction. Springer Science and Business Media.

Filion, L.J., 2012. Méthodologie de modélisation systémique. In: Filion, L.J., Bourion, C. (Eds.), La cognition entrepreneuriale : Méthodes de recherche, pp. 31–70. Éditions Eska.

François, V., Lafaye, C., Cremers, H., Zaoual, A.R., 2016. Les difficultés rencontrées par les jeunes entreprises innovantes: incubées versus non incubées. In: Philippart, P. (Ed.), Ecosystème entrepreneurial et logiques d'accompagnement. EMS Editions, pp. 135–166.

Galkina, T., Atkova, I., 2020. Effectual networks as complex adaptive systems: exploring dynamic and structural factors of emergence. Entrep. Theory Pract. 44 (5), 964–995. https://doi.org/10.1177/1042258719879670.

Gargiulo, M., Benassi, M., 1999. The dark side of social capital. In: Corporate Social Capital and Liability. Springer US, Boston, MA, pp. 298–322.

Gillet, A., Tremblay, D.-G., 2017. Les recherches partenariales et collaboratives. Presses de l'Université du Québec.

Graeber, D., 2013. It is value that brings universes into being. HAU. J. Ethnogr. Theor. 3 (2), 219–243. https://doi.org/10.14318/hau3.2.012.
Granovetter, M.S., 1973. The strength of weak ties. Am. J. Sociol. 78 (6), 1360–1380. https://www.jstor.org/stable/2776392.
Grilli, L., Marzano, R., 2023. Bridges over troubled water: incubators and start-ups' alliances. Technovation 121, 102689. https://doi.org/10.1016/j.technovation.2022.102689.
Grossetti, M., Barthe, J.F., 2008. Dynamique des réseaux interpersonnels et des organisations dans les créations d'entreprises. Rev. Fr. Sociol. 49 (3), 585–612. https://doi.org/10.3917/rfs.493.0585.
Hackett, S.M., Dilts, D.M., 2004. A systematic review of business incubation research. J. Technol. Tran. 29 (1), 55–82. https://doi.org/10.1023/B:JOTT.0000011181.11952.0f.
Hackett, S.M., Dilts, D.M., 2008. Inside the black box of business incubation: study B-scale assessment, model refinement and incubation outcomes. J. Technol. Tran. 33 (5), 439–471. https://doi.org/10.1007/s10961-007-9056-9.
Håkansson, H., Snehota, I., 1989. No business is an island: the network concept of business strategy. Scand. J. Manag. 5 (3), 187–200. https://doi.org/10.1016/0956-5221(89)90026-2.
Han, S., Su, J., Lyu, Y., Liu, Q., 2022. How do business incubators govern incubation relationships with different new ventures? Technovation 116, 102486. https://doi.org/10.1016/j.technovation.2022.102486.
Hannon, P.D., Chaplin, P., 2003. Are incubators good for business? Understanding incubation practice-the challenges for policy. Environ. Plan. C Politics Space 21 (6), 861–881. https://doi.org/10.1068/c0215.
Hansen, E.L., 1995. Entrepreneurial networks and new organization growth. Entrep. Theory Pract. 19 (4), 7–19. https://doi.org/10.1177/104225879501900402.
Hansen, M.T., Chesbrough, H.W., Nohria, N., Sull, D.N., 2000. September-October). Networked incubators: hothouses of the new economy. Harv. Bus. Rev. 78 (5), 74–84. https://hbr.org/2000/09/networked-incubators-hothouses-of-the-new-economy.
Hite, J.M., 2005. Evolutionary processes and paths of relationally embedded network ties in emerging entrepreneurial firms. Entrep. Theory Pract. 29 (1), 113–144. https://doi.org/10.1111/j.1540-6520.2005.00072.x.
Hite, J.M., Hesterly, W.S., 2001. The evolution of firm networks: from emergence to early growth of the firm. Strat. Manag. J. 22 (3), 275–286. https://doi.org/10.1002/smj.156.
Hlady Rispal, M., 2002. La méthode des cas. De Boeck Université.
Hoang, H., Antoncic, B., 2003. Network-based research in entrepreneurship: a critical review. J. Bus. Ventur. 18 (2), 165–187. https://doi.org/10.1016/S0883-9026(02)00081-2.
Hormiga, E., Batista-Canino, R.M., Sánchez-Medina, A., 2011. The role of intellectual capital in the success of new ventures. Int. Enterpren. Manag. J. 7 (1), 71–92. https://doi.org/10.1007/s11365-010-0139-y.
Hughes, M., Ireland, R.D., Morgan, R.E., 2007. Stimulating dynamic value: social capital and business incubation as a pathway to competitive success. Long. Range Plan. 40 (2), 154. https://doi.org/10.1016/j.lrp.2007.03.008.
Huxham, C., 2003. Theorizing collaboration practice. Publ. Manag. Rev. 5 (3), 401–423. https://doi.org/10.1080/1471903032000146964.
Inkpen, A.C., Tsang, E.W.K., 2005. Social capital, networks, and knowledge transfer. Acad. Manag. Rev. 30, 146–165. https://www.jstor.org/stable/20159100.
Jack, S.L., 2010. Approaches to studying networks: implications and outcomes. J. Bus. Ventur. 25 (1), 120–137. https://doi.org/10.1016/j.jbusvent.2008.10.010.
Jack, S., Moult, S., Anderson, A.R., Dodd, S., 2010. An entrepreneurial network evolving: patterns of change. Int. Small Bus. J. 28 (4), 315–337. https://doi.org/10.1177/0266242610363525.
Julien, P.A., Raymond, L., Jacob, R., et Abdul-Nour, G., 2003. Préface (de José Boisjoli) et Introduction. In: Julien, P., Raymond, L., Jacob et, R., Abdul-Nour, G. (Eds.), L'entreprise-réseau: Concepts et applications. Dix ans d'expérience de la chaire Bombardier produits récréatifs 1993-2003. Presse de l'Université du Québec, pp. 3–35.
Kakabadse, N., Karatas-Ozkan, M., Theodorakopoulos, N., McGowan, C., Nicolopoulou, K., 2020. Business incubator managers' perceptions of their role and performance success: role demands, constraints, and choices. Eur. Manag. Rev. 17 (2), 485–498.
Khiari, S., Zouaoui, M., Smida, A., 2015. Une approche gestaltiste de la performance de la jeune entreprise technologique innovante. Revue internationale PME 28 (2), 113–158. https://doi.org/10.7202/1032835ar.
Klofsten, M., Fayolle, A., Guerrero, M., Mian, S., Urbano, D., Wright, M., 2019. The entrepreneurial university as driver for economic growth and social change-Key strategic challenges. Technol. Forecast. Soc. Change 141, 149–158. https://doi.org/10.1016/j.techfore.2018.12.004.
Klofsten, M., Lundmark, E., Wennberg, K., Bank, N., 2020. Incubator specialization and size: divergent paths towards operational scale. Technol. Forecast. Soc. Change 151, 119821. https://doi.org/10.1016/j.techfore.2019.119821.
Kogut, B., 2000. The network as knowledge: generative rules and the emergence of structure. Strat. Manag. J. 21 (3), 405–425. https://doi.org/10.1002/(SICI)1097-0266(200003)21:3<405::AID-SMJ103>3.0.CO;2-5.
Labianca, G., Brass, D.J., 2006. Exploring the social ledger: negative relationships and negative asymmetry in social networks in organizations. Acad. Manag. Rev. 31 (3), 596–614. https://doi.org/10.5465/amr.2006.21318920.
Lai, W.-H., Lin, C.-C., 2015. Constructing business incubation service capabilities for tenants at post-entrepreneurial phase. J. Bus. Res. 68 (11), 2285–2289. https://doi.org/10.1016/j.jbusres.2015.06.012.
Lamine, W., Fayolle, A., Delanoë-Gueguen, S., 2015. Focus sur une étape cruciale et déterminante du cycle de vie: l'incubation. Entreprendre & Innover 3 (26), 5–7. https://doi.org/10.3917/entin.026.0005.
Lamine, W., Fayolle, A., Jack, S., Byrne, J., 2019. The role of materially heterogeneous entities in the entrepreneurial network. Ind. Market. Manag. 80, 99–114. https://doi.org/10.1016/j.indmarman.2017.12.004.
Lanham-New, W., 2020. Incubated Entrepreneurs": a Study into the Everyday Experiences of Business Incubation through a Micro-sociological Lens. Doctoral dissertation, University of Surrey. https://doi.org/10.15126/thesis.00853728.
Larson, A., Starr, J.A., 1993. A network model of organization formation. Enterpren. Theor. Pract. 17 (2), 5–16. https://doi.org/10.1177/104225879301700201.
Lavie, D., 2006. The competitive advantage of interconnected firms: an extension of the resource-based view. Acad. Manag. Rev. 31 (3), 638–658. https://www.jstor.org/stable/20159233.
Lee, C., Lee, K., Pennings, J.M., 2001. Internal capabilities, external networks, and performance: a study on technology-based ventures. Strat. Manag. J. 22 (6–7), 615–640. https://www.jstor.org/stable/3094323.
Lendner, C., Dowling, M., 2007. The organizational structure of university business incubators and their impact on the success of start-ups: an international study. Int. J. Enterpren. Innovat. Manag. 7 (6), 541–555. https://doi.org/10.1504/IJEIM.2007.014596.
Martinez, M.A., Aldrich, H.E., 2011. Networking strategies for entrepreneurs: balancing cohesion and diversity. Int. J. Entrepreneurial Behav. Res. 17 (1), 7–38. https://doi.org/10.1108/13552551111107499.
McAdam, M., McAdam, R., 2008. High tech start-ups in University Science Park incubators: the relationship between the start-up's lifecycle progression and use of the incubator's resources. Technovation 28 (5), 277–290. https://doi.org/10.1016/j.technovation.2007.07.012.
McAdam, M., Miller, K., McAdam, R., 2016. Situated regional university incubation: a multi-level stakeholder perspective. Technovation 50, 69–78. https://doi.org/10.1016/j.technovation.2015.09.002.
Messeghem, K., Sammut, S., 2010. Accompagnement du créateur: de l'isolement à la recherche de légitimité. Revue de l'Entrepreneuriat 9 (1), 82–107. https://doi.org/10.3917/entre.091.0005.
Mian, S., Lamine, W., Fayolle, A., 2016. Technology business incubation: an overview of the state of knowledge. Technovation 50, 1–12. https://doi.org/10.1016/j.technovation.2016.02.005.
Miles, M.B., Huberman, A.M., 1994. Qualitative Data Analysis: an Expanded Sourcebook. Sage Publications.
Miles, M.B., Huberman, A.M., 2003. Analyse des données qualitatives. De Boeck Supérieur.
Mingers, J., White, L., 2010. A review of the recent contribution of systems thinking to operational research and management science. Eur. J. Oper. Res. 207 (3), 1147–1161. https://doi.org/10.1016/j.ejor.2009.12.019.
Muñiz, N.M., Morales-Gutiérrez, A.C., Ariza-Montes, J.A., 2013. Los centros de incubación de negocios y la gestión de redes: exploración empírica aplicando el análisis de redes sociales. Revista Internacional de Organizaciones (10), 199–221. https://doi.org/10.17345/rio10.199-221.
Nahapiet, J., Ghoshal, S., 1998. Social capital, intellectual capital, and the organizational advantage. Acad. Manag. Rev. 23 (2), 242–266. https://doi.org/10.2307/259373.
Nair, S., Blomquist, T., 2020. The temporal dimensions of business incubation: a value-creation perspective. Int. J. Enterpren. Innovat. 21 (1), 38–46. https://doi.org/10.1177/1465750318817970.
Nicholls-Nixon, C.L., Valliere, D., 2021. Entrepreneurial logic and fit: a cross-level model of incubator performance. Int. J. Entrepreneurial Behav. Res. 27 (7), 1696–1723. https://doi.org/10.1108/IJEBR-11-2020-0801.
Nicholls-Nixon, C.L., Valliere, D., Gedeon, S.A., Wise, S., 2021. Entrepreneurial ecosystems and the lifecycle of university business incubators: an integrative case study. Int. Enterpren. Manag. J. 17, 809–837. https://doi.org/10.1007/s11365-019-00622-4.
Nicholls-Nixon, C.L., Valliere, D., Singh, R.M., Hassannezhad Chavoushi, Z., 2022. How incubation creates value for early-stage entrepreneurs: the People-Place nexus. Enterpren. Reg. Dev. 34 (9–10), 868–889. https://doi.org/10.1080/08985626.2022.2121858.
Paillé, P., 2010. Une « enquête de théorisation ancrée » : les racines et les innovations de l'approche méthodologique de Glaser et Strauss, 2010. In: Glaser et, B.G., Strauss, A. L. (Eds.), La découverte de la théorie ancrée, pp. 23–77. Armand Colin.
Parkhe, A., Wasserman, S., Ralston, D.A., 2006. New frontiers in network theory development. Acad. Manag. Rev. 31 (3), 560–568. https://www.jstor.org/stable/20159228.
Patton, M.Q., 2002. Qualitative Research and Evaluation Methods, 3e ed. SAGE.
Peters, L., Rice, M., Sundararajan, M., 2004. The role of incubators in the entrepreneurial process. J. Technol. Tran. 29 (1), 83–91. https://doi.org/10.1023/B:JOTT.0000011182.82350.df.
Phan, P.H., Siegel, D.S., Wright, M., 2005. Science parks and incubators: observations, synthesis and future research. J. Bus. Ventur. 20 (2), 165–182. https://doi.org/10.1016/j.jbusvent.2003.12.001.
Poppo, L., Zenger, T., 2002. Do formal contracts and relational governance function as substitutes or complements? Strat. Manag. J. 23 (8), 707–725. https://www.jstor.org/stable/3094289.
Poupart, J., Deslauriers, J.P., Groulx, L.H., Laperrière, A., Mayer, P., Pires, A.P., 1997. La recherche qualitative : enjeux épistémologiques et méthodologiques. Gaétan Morin éditeur. Éds.
Prévost, P., Roy, M., 2015. Les approches qualitatives en gestion. Presses de l'Université de Montréal.

Prévot, F., Brulhart, F., Guieu, G., 2010. Perspectives fondées sur les ressources. Rev. Fr. Gest. 5 (204), 87–103.

Ratinho, T., Amezcua, A., Honig, B., Zeng, Z., 2020. Supporting entrepreneurs: a systematic review of literature and an agenda for research. Technol. Forecast. Soc. Change 154, 119956. https://doi.org/10.1016/j.techfore.2020.119956.

Redondo, M., Camarero, C., 2019. Social capital in University business incubators: dimensions, antecedents and outcomes. Int. Enterpren. Manag. J. 15 (2), 599–624. https://doi.org/10.1007/s11365-018-0494-7.

Ritter, T., Wilkinson, I.F., Johnston, W.J., 2004. Managing in complex business networks. Ind. Market. Manag. 33 (3), 175–183. https://doi.org/10.1016/j.indmarman.2003.10.016.

Rothschild, L., Darr, A., 2005. Technological incubators and the social construction of innovation networks: an Israeli case study. Technovation 25 (1), 59–67. https://doi.org/10.1016/S0166-4972(03)00064-6.

Salancik, G.R., 1995. Review: wanted: A good network theory of organization. Adm. Sci. Q. 40 (2), 345–349. https://doi.org/10.2307/2393642.

Sandberg, J., Alvesson, M., 2011. Ways of constructing research questions: gap-spotting or problematization? Organization 18 (1), 23–44. https://doi.org/10.1177/1350508410372151.

Schwartz, M., Hornych, C., 2010. Cooperation patterns of incubator firms and the impact of incubator specialization: empirical evidence from Germany. Technovation 30 (9), 485–495. https://doi.org/10.1016/j.technovation.2010.05.001.

Scillitoe, J., Chakrabarti, K., 2010. The role of incubator interactions in assisting new ventures. Technovation 30 (3), 155–167. https://doi.org/10.1016/j.technovation.2009.12.002.

Shih, T., Aaboen, L., 2019. The network mediation of an incubator: how does it enable or constrain the development of incubator firms' business networks? Ind. Market. Manag. 80, 126–138. https://doi.org/10.1016/j.indmarman.2017.12.002.

Slotte-Kock, S., Coviello, N., 2010. Entrepreneurship research on network processes: a review and ways forward. Entrep. Theory Pract. 34 (1), 31–57. https://doi.org/10.1111/j.1540-6520.2009.00311.x.

Soetanto, D.P., Jack, S.L., 2013. Business incubators and the networks of technology-based firms. J. Technol. Tran. 38 (4), 432–453. https://doi.org/10.1007/s10961-011-9237-4.

Soetanto, D., Jack, S., 2016. The impact of university-based incubation support on the innovation strategy of academic spin-offs. Technovation 50, 25–40. https://doi.org/10.1016/j.technovation.2015.11.001.

Spigel, B., 2017. The relational organization of entrepreneurial ecosystems. Entrep. Theory Pract. 41 (1), 49–72. https://doi.org/10.1111/etap.12167.

Strätling, R., Wijbenga, F.H., Dietz, G., 2012. The impact of contracts on trust in entrepreneur-venture capitalist relationships. Int. Small Bus. J. 30 (8), 811–831. https://doi.org/10.1177/0266242610388822.

Strauss, A.L., Soulet, M.H., Corbin, J.M., Emery, S., Soulet, M.H., 2004. Les fondements de la recherche qualitative: techniques et procédures de développement de la théorie enracinée. Academic Press/Saint-Paul.

Tavoletti, E., 2013. Business incubators: effective infrastructures or waste of public money? Looking for a theoretical framework, guidelines and criteria. J. Knowl. Econ. 4 (4), 423–443. https://doi.org/10.1007/s13132-012-0090-y.

Theodoraki, C., Messeghem, K., Audretsch, D.B., 2020. The effectiveness of incubators' co-opetition strategy in the entrepreneurial ecosystem: empirical evidence from France. IEEE Trans. Eng. Manag. 69 (4), 1781–1794. https://doi.org/10.1109/TEM.2020.3034476.

Theodorakopoulos, N., Kakabadse, N.K., McGowan, C., 2014. What matters in business incubation? A literature review and a suggestion for situated theorizing. J. Small Bus. Enterprise Dev. 21 (4), 602–622. https://doi.org/10.1108/JSBED-09-2014-0152.

Tötterman, H., Sten, J., 2005. Start-ups: business incubation and social capital. Int. Small Bus. J. 23 (5), 487–511. https://doi.org/10.1177/0266242605055909.

Vanderstraeten, J., van Witteloostuijn, A., Matthyssens, P., 2020. Organizational sponsorship and service co-development: a contingency view on service co-development directiveness of business incubators. Technovation 98, 102154. https://doi.org/10.1016/j.technovation.2020.102154.

Walker, B., Kalis, N., 2004. A menu of services. In: Erlewine, M., Gerl, E.A. (Eds.), A Comprehensive Guide to Business Incubation, second ed. National Business Incubation Association, pp. 207–217.

Yin, R.K., 2009. Case Study Research: Design and Methods, fourth ed. Sage Publications.

Zaheer, A., McEvily, B., Perrone, V., 1998. Does trust matter? Exploring the effects of interorganizational and interpersonal trust on performance. Organ. Sci. 9 (2), 141–159. https://doi.org/10.1287/orsc.9.2.141.