



Moving beyond intermediation: How intermediary organizations shape collaboration dynamics in entrepreneurial ecosystems

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ABSTRACT

Recently, increasing attention has been paid to entrepreneurial ecosystems and the process of their formation and function. Researchers have noted the important role that intermediary organizations such as incubators play in connecting various actors within ecosystems. Yet our understanding of this role is limited to a few empirical insights. Using resource dependence and embeddedness as theoretical lenses, the present research examines the role of incubators in entrepreneurial ecosystem formation and function, and analyzes how intermediation activities shape collaboration patterns embedded within entrepreneurial ecosystems. Our findings are based on an empirical investigation of two entrepreneurial ecosystems, one in Kenya and one in Uganda. Our analysis of 38 semi-structured interviews with entrepreneurial actors in these ecosystems reveals the underlying structural, operational, and relational conditions that influence the actors' interaction with each other. We propose three collaboration patterns that emerge among actors in entrepreneurial ecosystems under these conditions: *one-sided dependency-based*, *joint dependency-based*, and *mutual dependency-based collaborations*. We discuss these patterns in detail and identify the circumstances in which each is most likely to occur. This empirical setting clearly shows that beyond their primary roles of providing space, network, and advice to entrepreneurs, intermediary organizations in entrepreneurial ecosystems play a significant role in orchestrating collaborations. Finally, we reflect on the limitations of this study and offer implications for future research.

1. Introduction

Research finds that entrepreneurship is one of the most important factors in the economic growth of regions and countries (Mason and Brown, 2014; Content et al., 2020). Plethora of policies, plans, and interventions have been launched to support entrepreneurship, mainly at the level of the individual and their entrepreneurial activities. This micro-level focus has also dominated the scholarship on entrepreneurship (e.g., Shane, 2003; Content et al., 2020; Galvao et al., 2020). Only recently researchers have paid attention to broader contexts and considered a systemic approach, in which the concept of the entrepreneurial ecosystem (EE) has emerged (e.g., Cohen, 2006; Feld, 2012; Dionisio et al., 2021). Empirical research has investigated the influence of EEs on entrepreneurship success and economic growth (e.g., Tsvetkova, 2015; Goswami et al., 2018); of EEs and geographical areas, such

as cities and regions (e.g., Mack and Meyer, 2016; Spigel, 2017); and of EE formation, attributes, conceptualizations, and types (e.g., Acs et al., 2017; Roundy et al., 2017; Stam, 2015; Theodoraki et al., 2018). Significant questions remain around how EEs can be formed and what the precise dynamics are of the interactions of the key actors during this formation process (Cavallo et al., 2019; Wurth et al., 2021). These questions become more complex when researchers incorporate the roles of the social, cultural, and political environments in which entrepreneurial activities occur (Welter and Smallbone, 2011; Welter et al., 2019). Answering these questions is important because public authorities and development agencies, recognizing the systemic and context-dependent nature of entrepreneurial activity, design and implement large scale system-level interventions. For example, they do this by promoting meso-level interactions among EE support organizations, such as universities, technology institutes, service or resource

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providers, and intermediary organizations. However, they seem to struggle to find the necessary leverage point to support entrepreneurial ecosystem development (Jung et al., 2017). This struggle has resulted in an increasing number of EE-focused interventions such as creating and empowering open system intermediaries and also provide opportunities for researchers to investigate the inner life of EEs (Clayton et al., 2018; Stam and van de Ven, 2019) and to examine the characteristics of those ecosystems' intermediation processes (Goswami et al., 2018).

Intermediation is a concept introduced by innovation scholars to describe the brokering and bridging of knowledge exchange between research institutes and industrial actors in ecosystems or networks (Arnaldi and Neresini, 2019). Intermediary organizations play a crucial role in facilitating collaboration by mobilizing and orchestrating resources from resource-provider organizations to recipients in EEs (Cao and Zhi, 2020). This process highlights the question of how actors' dependencies on one another's resources (e.g., capital, knowledge, expertise, and technologies) influence the intermediation activities that are aimed at creating and developing EEs. Business incubators have attracted scholarly attention as a type of "open system intermediary" that supports the development of whole markets in addition to the development of individual actors within them, especially in emerging markets (Dutt et al., 2016). The incubator role inevitably evolves from providing business support and physical space to entrepreneurs (incubator tenants) to a more active institutionalized intermediation role, particularly in emerging economies (Armanios et al., 2017; Guerrero et al., 2020). While researchers have covered the antecedents and outcomes of incubation activities for entrepreneurs, incubators, and environments, they have mostly overlooked the important function of incubators as mediators of collaboration among actors in the resource-providing sub-system of the EE (Hausberg and Korreck, 2020). Hence, the present article focuses on incubators' intermediation activities aimed at evolving the ecosystem dynamics in the initial phase of EE development. More broadly, this article also responds to a call by Wurth et al. (2021) for research on understanding how relationships develop in EEs and what influence contextual factors have on them.

We focus on two EEs in East Africa, one in Nairobi, Kenya, and one in Kampala, Uganda. They were developed within a large-scale agribusiness innovation program aimed at establishing EEs by activating and empowering incubators. Adopting a case study approach, we investigate how the respective incubators operate as intermediary organizations within their EEs. We first identify what intermediation practices the incubators undertake during the creation and development of the EEs, taking into account the interdependencies between EE actors. We then explore the collaboration patterns as embedded cases that emerge as the ultimate outcome of intermediaries' interaction with EEs actors. We draw on two related theoretical underpinnings – resource dependence theory (Pfeffer and Salancik, 2003) and embeddedness theory (Granovetter, 1985) – to help understand resource dependence relationships and their underlying embeddedness conditions in an EE. Resource dependence theory offers a framework for understanding how ecosystem actors rely on access to each other's resources for value creation and survival, i.e., activities that motivate ecosystem creation and function. Embeddedness theory meets the need for embracing contextual underpinnings of EEs as economic interactions can only be interpreted in their institutional and socio-cultural contexts, especially when entrepreneurship research encourages it (e.g., Welter, 2011; Welter et al., 2019). Embeddedness theory complements this research by explaining how structural, relational, and operational factors influence collaborative environments.

We contribute to the literature on entrepreneurial ecosystem research in four ways. First, we conceptualize the inner life of entrepreneurial ecosystems, in which resources are required by actors and exchanged through the activities open system intermediaries. This is followed by the identification of collaboration patterns that emerge in EEs as a result of these interventions. Second, we analyze entrepreneurial ecosystems and contribute to a better understanding of how their

actors' interactions shape collaboration patterns within them (Feldman et al., 2019; Wurth et al., 2021). Third, we present a conceptual model explaining how different collaboration patterns emerge based on EEs actors' inter-dependencies while incorporating embeddedness factors. Fourth, we offer a contextualized perspective on entrepreneurial ecosystems and propose that the relationship among the actors is a suitable unit of analysis for effectively incorporating context into entrepreneurship research (Welter et al., 2019).

2. Theoretical background

2.1. The entrepreneurial ecosystem

The use of the word "ecosystem" originates in ecology but has been adopted by management and organization studies, where it is used in a systems approach to study complex social phenomena. The increased scholarly interest in system methodologies and concepts has not resulted in a clarified explanation of ecosystems but instead created a "flurry of derivative concepts," as argued by Granstrand and Holgersson (2020). In this paper, we use the word "system" to mean a goal-oriented set of components (part and sub-parts) within a permeable (open) boundary that marks the limit with its environment. Open systems allow resources and information to flow across their boundaries. Boundary spanners are entities mediating such flows. The system receives input from the environment, performs processes within itself, and produces outputs into the environment. The system's components are connected through relationships that create interdependencies including flows of communication and resources. Feedback mechanisms regulate the flows within the system. Holism, a central concept in system thinking, implies that the system is more than the sum of its parts and that synergy effects emerge from the system as a whole (Midgley, 2003). In management and organization theory, systems are not taken to be real entities but epistemological tools (Churchman, 1979; Checkland, 1994) useful for conceptualizing complex social phenomena, such as EEs.

The notion of systemic processes of generating and transferring localized knowledge among actors, including national and regional innovation systems, innovation clusters, business ecosystems, and networks (see, e.g., Asheim, 2011; Lundvall, 2007; Moore, 1993), has inspired the development of the concept of the entrepreneurial ecosystem. The EE has been explored in a variety of different literatures. Two competing schools of thought each offers a theoretical grounding for our understanding of EEs. One is a more traditional perspective on firm formation and growth in which firms match their resources to complementary providers in their "resource-rich" network (Garney, 1998), and the other characterizes new venture formations with social, behavioral, and cultural factors specifically in resource-poor environments (Baker and Nelson, 2005; Welter, 2011). Recently, scholars have been leaning toward the former perspective for conceptualizing EEs, emphasizing relational and spatial embedded processes that characterize EEs, something that Brown and Mason (2017) refer to as "spatial turn" in the entrepreneurship literature. This perspective emphasizes the mix of distinctive localized characteristics (social, institutional, and relational) within ecosystems. Understanding this complexity is conceptually appealing and yet the field of EE research suffers from a lack of rigorous theoretical and empirical investigations (Brown and Mason, 2017; Stam, 2015).

Various definitions have been suggested for EEs, but they all share non-linearity and complexity as core features, rooted in the ecosystem metaphor and its biological origins (Moore, 1993). A distinct example of this is Mason and Brown's (2014) definition: "A set of inter-connected entrepreneurial actors, entrepreneurial organizations, institutions and entrepreneurial processes which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment." Some scholars have critiqued this definition as "too geographical" because it limits our understanding of ecosystem to spatial distance, and offered a more non-geographical definition (;

Malecki, 2011; Zahra and Nambisan, 2011; Theodoraki et al., 2018). These authors view entrepreneurial ecosystems as orchestrators and facilitators of innovation and entrepreneurial activities, where actors co-produce, co-create, and collaborate for joint value creation. However, in our conceptualization of EEs, we adopt the socio-spatial view of ecosystems, following Mason and Brown's (2014) definition.

Based on the definition of EE by Mason and Brown (2014), what makes EEs a distinct form of ecosystems is the core focus on entrepreneurial actors. In the entrepreneurship literature, a substantial amount of research considers entrepreneurship as the heart of EEs with an emphasis on certain places with high concentration on entrepreneurial activities (Spigel, 2017; Stam, 2015). We base our conceptualization on spatial considerations of EEs and, based on Mason and Brown (2014), we include the following as core entrepreneurial actors: support and mentoring services for startups, business incubators, co-working spaces, networking programs, and accelerator programs. These core actors are at the heart of EEs, and a variety of other stakeholders are connected to them through formal and informal relationships. These other stakeholders are divided into two categories: resource providers and connectors (Mason and Brown, 2014). The different types of actors and their relationships within the EE are illustrated in Fig. 1.

Fig. 1 shows four categories of actors. The entrepreneurs are at the core of the system. Various resource providers and potential partners are at the boundary of the system, for example, financial agents such as banks, public and private investors, international development agencies and venture capital firms, universities, research organizations, corporations, and SMEs. These actors constitute sources of knowledge, technology, and expertise for the entrepreneurs in the EE. Other actors, such as match-making services, clubs, and communities, are sources of social and resource network opportunities for entrepreneurs. Finally, incubators, accelerators, and co-working spaces occupy a central role. They constitute a crucial sub-system that traditionally provides business development services, physical workspace, and networks, but they have recently been recognized as also being engaged in intermediation activities, facilitating resource exchange between startups and different resource providers (Clayton et al., 2018) as well as in activities aimed at configuring and developing the EE as a whole.

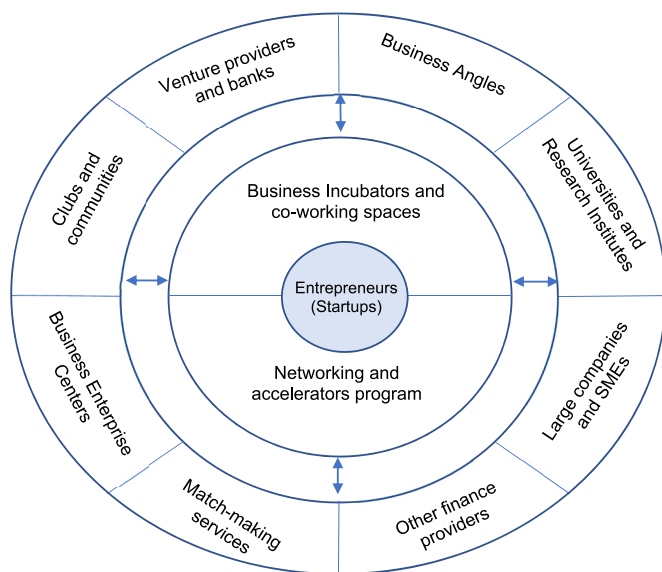


Fig. 1. Entrepreneurial Ecosystem inspired by Mason and Brown (2014) definition. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

2.2. Incubators as intermediaries in EEs

Scholars have recently recognized that incubators, accelerators, and similar entrepreneurial support programs or organizations are critical sub-systems of broader entrepreneurial ecosystems (Theodoraki and Meseghem, 2017). Cavallo et al. (2019) argue that exploring the main sub-systems, such as the incubators of an EE and their corresponding interactions with other sub-systems, helps us comprehend the dynamics of the main system.

Dutt et al. (2016) introduced the term “open system intermediaries” based on the double role of incubators in supporting both individual business development and general market growth in emerging markets, aiming to create “benefits for parties beyond a well-identified set of participating actors” (p. 819). This is in line with a recent observation that incubators’ primary role as startup support and resource providers has evolved into that of network system builders (Stam, 2015). By facilitating, orchestrating, and coordinating activities within a network of actors, incubators take on an intermediary role. Howells (2006), too, showed that intermediaries’ role is not limited to bridging and brokering, but covers a wide variety of functions from the front end of an innovation process (e.g. foresight and diagnosis) to the back end of the innovation process (e.g. commercializing and outcome evaluation). Similarly, in the sustainability transition literature, the provision of incubators is considered a key intervention approach for the economic development of an entrepreneurial ecosystem because they act as neutral coordinators, aligning various interests and logics of actors in ecosystems (Hayter, 2016). Lastly, van Rijnsouwer (2020) showed that incubators’ support mechanisms influence meeting (an initial encounter of two actors) and mating (forming a relationship) factors in the process of network formation in EEs.

Incubators with intermediation roles typically support technology-based startups by connecting them with resource-providing stakeholders (Bruneel et al., 2012). The intermediary role of incubators fosters internal and external relationships for their tenants by favoring social and business networks (Apa et al., 2017). Thus, the traditional role of incubators, providing resources and startup support, is today often combined with a more intermediary role, facilitating and coordinating in entrepreneurial ecosystems (Bergek and Norrman, 2008). Intermediation is often understood as circulating information among different parties (Parag and Janda, 2014) and is rarely conceptualized as the main activity that influences the domains the parties operate in, such as ecosystems (Hodson and Marvin, 2010). This dominant role of intermediary organizations has received some attention in the sustainable transition literature, in which intermediaries are seen as central acting agents during transition (e.g., Klerkx and Leeuwis, 2008; Kivimaa et al., 2019). In this domain of literature, the multiple roles of intermediaries have been recognized and cover a wide range of activities, from brokering information to orchestrating the whole system (Kanda et al., 2020).

The EE literature highlights the importance of the network services provided by incubators in building relationships within the ecosystem (Van Weele et al., 2018). Incubators are associated with intermediation roles at three levels. First, the incubator mediates relationships and resource exchange internally among a pool of tenants. Second, the incubator mediates connections and relationships externally between its tenants and external stakeholders in the EE (Hausberg and Korreck, 2020). A third and much less studied function of incubators is as mediators of collaboration among the actors in the resource-providing sub-system of the EE. Even though research has addressed the antecedents and outcomes of incubation activities at the multiple levels of tenants (micro), incubators (meso), and environments (macro), the extension of the incubators’ traditional role as the main sub-system to embrace multi-level intermediation is not well understood (Hausberg and Korreck, 2020). Hence, this article focuses on understanding the intermediation activities in which incubators engage in building and developing the ecosystem in the initial phase of EE development.

2.3. Resource dependency theory and embeddedness

Different actors in the EE control different resources and may engage in collaborations characterized by different levels of dependency and salience (Miller et al., 2014). This dependency, in turn, influences the nature of intermediation processes that incubators can stage, as those processes are enacted in environments characterized by different structural, relational, and operational embeddedness factors (Garcia-Pont et al., 2009; Moran, 2005; Polanyi, 1957). Resource dependency and embeddedness thus shape interactions, interdependencies, and processes of resource exchange. Therefore, we combine these theories as an initial analytical lens.

Resource dependency theory argues that the degree of resource dependency an actor has on another organization defines his or her strategies in interacting with that organization (Frooman, 1999). Actors that are not self-providing must engage in interdependent relationships with other actors to access resources needed to survive and become cost-efficient (Hillman et al., 2009; Pfeffer and Salancik, 2003). Johnson (2008) concluded that intermediary organizations establish both economic and strategic perspectives in an interdependent system. The economic perspective can be explained by transaction cost economics (Williamson, 1989), which posits that intermediaries should enable economic benefits, such as cost reductions, to outweigh the negative aspects of collaboration, for example, knowledge spillover. The strategic perspective is explained by the resource-based view (Barney, 1996), which proposes that actors depend on non-financial resources to succeed, and intermediaries should provide strategic opportunities for actors in collaborations to help them succeed. Resource dependence theory also explains how EEs manage their resource dependences and how this influences their functioning. According to Roundy and Bayer (2019), within nascent EEs in emerging markets without well-established entrepreneurial infrastructures, actors depend heavily on resource providers in addition to support organizations such as incubators and local governments.

Allowing us to conceptualize the EEs as a system of interdependent actors, and to see incubators as assuming an intermediating function among these actors, resource dependence is a useful theoretical lens to understand such systems' functions and dynamics. Studies utilizing the resource dependence perspective have focused on the processes through which actors mobilize resources through their interdependent relationships with other system actors. Resource dependency involves several types of dependency relations among actors, usually characterized as mutual dependency, one-sided dependency, and joint dependency (Casciaro and Piskorski, 2005; Gulati and Sytch, 2007).

Mutual dependency involves the reciprocal exchange of resources among equally resource-dependent partners (Pfeffer and Salancik, 2003; Xia, 2011). Mutual dependency reflects equal power relations, where each partner has power over the other (Pfeffer and Salancik, 2003).

Joint dependency refers to a situation involving more and less resource-rich organizations (Hoffmann, 2007). Resource-rich partners, those with a power advantage, provide valuable resources and are inclined to exploit others (Hoffmann, 2007). The less resource-rich partners, those with a power disadvantage, may effectively manage their disadvantage by improving their bargaining position in collaborations (Casciaro and Piskorski, 2005).

One-sided dependency reflects an imbalanced resource exchange (Hillman et al., 2009; Hofer et al., 2012), in which one partner is the "resource provider" (power-advantaged) and the other partner is the "resource-dependent partner" (power-disadvantaged) (Pfeffer and Salancik, 2003).

Studying EEs through the lens of resource dependence theory requires taking into account the EE's environment, including inter-organizational arrangements, collaborative values, and social-cultural relationships. The resources include financial, social, human, and cultural capital that circulate within this environment (Roundy and Bayer, 2019). In addition, Roundy and Bayer (2019) argue that the

environment in which EEs are formed influences their function. Therefore, they highlight the important role of the context in which EEs are created.

In economic sociology, it is argued that functioning of an economy could not be interpreted separated from the social environment in which it was embedded (Polanyi, 1957). *Embeddedness* is rooted in social relationships in economic systems involving elements such as reciprocity and exchange among partnering organizations and therefore, it refers to the degree to which economic activity is strained by non-economic institutions (Granovetter, 1985; Polanyi, 1957). Thus, it is an essential concept for analyzing the nature of relations and interdependencies within an EE's environment in which the context matters. According to Welter (2011), in addition to social embeddedness, an idea that has been frequently employed in entrepreneurship research, there is a need for implementing multi-layered embeddedness concepts that embrace institutional and socio-spatial contexts to enrich and facilitate our contextualization efforts. Entrepreneurial ecosystems, like any open systems, are dependent on, and sensitive to, the environment in which they are operating and in which their relations are embedded (Stam and Welter, 2020; Wurth et al., 2021).

Embeddedness factors, including trust, commitment, structural position, interests, and cognition, are relevant for the collaboration context (Granovetter, 1985; Gulati and Sytch, 2007; Inkpen and Beamish, 1997). Partners actively involved in collaborations can create common understandings and cohesiveness (Granovetter, 1985), along with formal governance structures (Albers et al., 2013). These things can enhance the partners' commitment to mobilize resources. Conflicts may arise when partners are inactive, thereby limiting the achievement of collective goals and creating uncertainty about resource mobilization (Kornai et al., 2004; Moran, 2005). We characterize embeddedness according to three dimensions: structural, relational, and operational (Garcia-Pont et al., 2009; Kim, 2014). *Structural embeddedness* is the configuration of partnerships, encompassing institutional logics, governance structure, and organizational structure (Dutt et al., 2016; Granovetter, 1985; Greenwood et al., 2010; Gulati and Sytch, 2007; Owen-Smith and Powell, 2004; Owen-Smith, 2003; Rowley et al., 2000). *Relational embeddedness* refers to the characteristics of the partners' relationships and emphasizes ties in the relationships (Moran, 2005; Rowley et al., 2000). *Operational embeddedness* refers to a subset of connections between partner representatives engaging in daily operational activities intended to promote operational effectiveness, for example, by displaying leadership, attitude, collaborative ability, and capacity (Cohen, 2006; Garcia-Pont et al., 2009; Hitt et al., 1998; Kaplan and Kaiser, 2003). In this article, we analyze the sub-systems of EEs by unpacking the intermediation activities in which resources are mobilized by incubators.

3. Method and context

3.1. Research context

The overall research context is an international development program primarily funded by an international donor to establish four agribusiness incubators in East Africa. The incubators are envisioned as intermediary organizations to facilitate agricultural market development, enhance commercialization and value creation, establish university-industry linkages, foster entrepreneurship and job opportunities for youth, and form entrepreneurial ecosystems. These agribusiness incubators are the nuclei of the emerging EEs and each focuses on a specific crop or crop category. The program's fundamental logic was to create incentives for three categories of EE actors, each holding unique resources needed by the others to collaborate. Public research organizations possessed underutilized technologies and know-how that could form bases for novel businesses. Universities educated talented graduates, many of whom would become unemployed; thus, the university wanted to promote self-employment through entrepreneurship. Local

businesses could prosper from collaborating with new startups in return for providing the entrepreneurs with their market insight and business experience. In a pre-project phase during 2009–2010, a public call for partnerships throughout East Africa was issued, and several EE projects were subsequently initiated. The donor organization provided funding to operate the incubators during the initial five-year startup phase (2010–2015), under the condition that the incubators would use this period to expand their scope and establish a financially sustainable business model, allowing them to continue on a commercial basis.

The EE agribusiness program was chosen for several reasons. First, the program constituted an extreme case in terms of an explicit effort to design and develop an EE around an incubator with the formal involvement of established local organizations as resource providers. This constitution of an EE may be apparent in other situations too, but rarely as such an explicitly designed process.

Second, the program design was based on promoting collaboration based on resource dependencies, thus providing an appropriate context for answering our research questions. Of the four potential case study sites supported by the program in East Africa, two evolved in a manner where the tripartite interrelationships (university-research organization-business) did not materialize as expected. Therefore, they became irrelevant as cases. The remaining two cases, hereafter called ALPHA and BETA for reasons of anonymity, were selected following purposive sampling principles (Yin, 2014) to ensure the richest possible data set and allow for cross-case comparison.

Third, to get a rich understanding of the embeddedness factors, it was essential to have access and prior knowledge of the stakeholders and the context where these incubators were located. Independent of this study, one of the authors had previously acted as a consultant for the funding agency. This engagement facilitated access and ensured good rapport with the stakeholders, which, otherwise, could have been challenging for an outsider. Moreover, this prolonged engagement helped us maintain a critical perspective on the data obtained, thus contributing to the study's validity and reliability. Within the two cases, we focused the data collection for this study on clearly identifiable instances of collaboration between the EEs' resource-providing actors and the two agribusiness incubators. These specific collaborations constitute the embedded cases, which are the main unit of analysis.

3.2. The EE cases

ALPHA was located in Kampala, Uganda, while BETA was located in Nairobi, Kenya. Each of these cities is a national capital, with about 1.6 m and 4.3 m inhabitants, respectively. The contexts present the well-known general challenges for entrepreneurship in resource-constrained countries (see, e.g., McKenzie and Paffhausen, 2017; Mead and Liedholm, 1998; Webb et al., 2020), and the two cases share fundamental characteristics representative of the majority of developing countries' agribusiness sectors, which the program aimed to address: (a) little interest, notably among young people, in engaging in agriculture-based entrepreneurship; (b) difficulty in raising investment capital for agriculture-related ventures; (c) generally high levels of uncertainty and risk associated with agriculture; and (d) very limited interaction between academia, research organizations, and the agribusiness sector. This last factor results in limited technology uptake by higher education graduates and therefore not matching the competencies required for developing the agribusiness sector.

An important distinguishing feature between ALPHA and BETA was the maturity of the business environment that constituted the EEs' immediate basis. In the case of ALPHA, the EE engaged with an important cash crop commodity with well-established foreign export markets. ALPHA focused mainly on increasing productivity, supporting local value addition, and upgrading and developing complementary business models. In the case of BETA, the target commodity was a lesser-used traditional subsistence crop. Both EEs were established to develop commercial value systems, including a range of novel processed

products based on reintroduced crops. Thus, in the ALPHA case, many of the elements constituting a well-functioning EE already existed, albeit in non-matured forms, and products and services were relatively well-defined. This was not the case in BETA, where neither the raw material supply, the supply chain structure, nor the final processed products were well established.

Both EEs involved technology transfer, for example, in terms of improved or new varieties of crops and management practices from agricultural research organizations to farmers. In ALPHA, the partner research organization (hereafter referred to as ARes) was a relatively small sector-specific public agency, whereas the research organization (hereafter referred to as BRes) involved in BETA's EE was the largest national agricultural research institute. In both EEs, the universities (hereafter referred to as AUni and BUni) played an important role in supporting the experimentation and commercialization of new products. ALPHA and BETA were relatively different in terms of the characteristics of the two EEs' core business partners. In ALPHA, the business partner (hereafter referred to as ABus) was a large-scale commercial farmer cooperative promoting small-scale farmer capacity development, collective product marketing, and business development. In BETA, the two business partners were small-scale agribusiness consulting companies (hereafter referred to as BBus1 and BBus2), working with the value chain and business development and farmers. ABus was a resource-rich, well-established organization focusing on both economic and social impacts and, therefore, well-aligned with the overall goals and objectives for the EE intermediated by the ALPHA incubator (hereafter referred to as AInc). Conversely, BBus1 and BBus2 had to generate revenues for their businesses when engaging in the EE intermediated by the BETA incubator (hereafter referred to as BInc).

AInc and BInc had similar organizational and operational setups. Both incubators had public and private-sector partners to mobilize and exchange different types of resources to assist incubation activities for their tenants. The partners from academia (AUni and BUni) and public research (ARes and BRes) in both ecosystems were parts of large hierarchical organizations with well-defined bureaucratic systems and procedures. The partners from the business sector (ABus, BBus1, and BBus2) varied in size but were all agile organizations. In both incubators, Articles of Association (AAs) and Memorandums of Understandings (MOUs) defined the different partners' roles, including their resource contributions, as well as the ways in which the resources were to be mobilized to support the incubators. A Board of Directors (BoD), with representatives from each main partner organization, was responsible for approving strategic decisions for the incubators. A Technical Advisory Committee, made up of technical staff from the partner organizations, advised the incubator management teams on selection, enrolment, training, product promotion, financial support to tenants, and other incubation services. Within ALPHA and BETA, the management teams consisted of technical and administrative employees headed by an incubator manager responsible for planning, fiscal management, and implementing daily activities. Fig. 2 summarizes the structural characteristics of ALPHA and BETA.

3.3. Research design and data collection

The qualitative approach is well-suited to address the research questions. Qualitative research permits an in-depth examination of real-life situations and a wealth of details with multiple levels of analysis (Yin, 1994a,b). Further, it prioritizes interpretation, description, characteristics, patterns, and meaning (Kvale, 1996). Also, the role of intermediary organizations in resource mobilization within entrepreneurial ecosystems is a complex and multi-faceted social phenomenon, for which a multiple-case study methodology is appropriate (Yin, 1994a, b). At the initial stage of research design, we used purposive sampling to ensure particular representation of cases within our case study, and we followed it with theoretical sampling to extend the theoretical categories during the research.

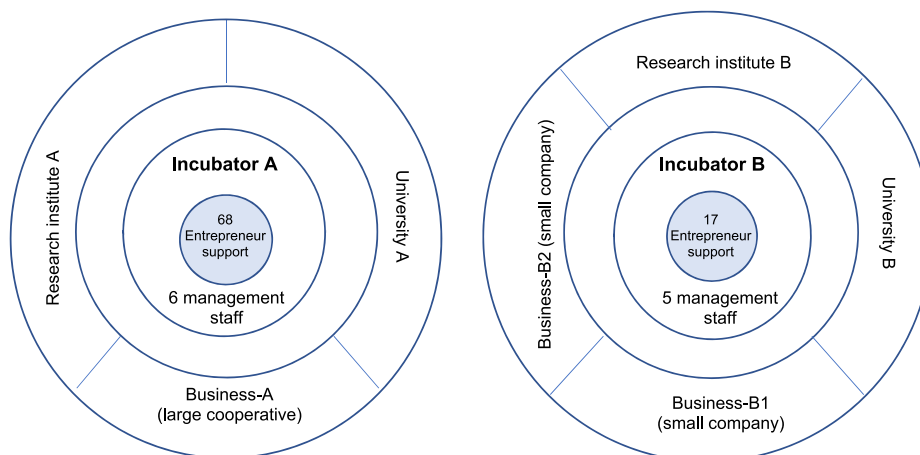


Fig. 2. Summary of similarities and differences of ALPHA and BETA entrepreneurial ecosystems.

Semi-structured and unstructured interviews were the main instruments used for the primary data collection. An initial interview guide was developed based on the theoretical framework outlined in the theoretical background section. The first round of interviews was conducted with key respondents during visits to the incubators in April and May 2015 (see Table 1). To collect data from different points of view in both entrepreneurial ecosystems, we conducted interviews with all the incubator staff members, the board of directors, and technical advice committees (who represent partner organizations) available at the time of data collection in ALPHA and BETA.

During the second visit, in February and March 2016, follow-up interviews were conducted with three respondents from ALPHA and seven respondents in BETA to corroborate the interactions for activities. In total, 38 individual and group interviews (two or three interviewees simultaneously), lasting approximately one to one-and-a-half hours each, were conducted in English, recorded, and transcribed verbatim for data analysis. Ethical clearance was based on a review of the research methodology by the overall agribusiness incubator program management. Following the approval of the research project, informants were introduced to the project and researchers through an introduction letter issued by the program leadership. Before each interview, a letter was provided to interviewees with detailed information about the purpose and scope of the study and the types of questions likely to be asked, and their consent was requested and given.

3.4. Data analysis

Data were analyzed using qualitative data analysis (Miles and Huberman, 1985), with the support of QSR NVivo. The analysis followed abductive reasoning. The abductive research approach was most suitable for our context and theoretical framework, given the nature of the research question, which aims to explain, implement, and change the theoretical underpinning during the research process (Dubois and Gadde, 2002). The analysis involves moving back and forth between inductive reasoning and a deductive and hypothetical approach to verify what the theory can and cannot explain. Abductive reasoning enabled us to systemically combine EE assumptions, resource dependence theory, embeddedness, the cases, and the empirical setting (sector and country), each of which played a crucial role in this research (Dubois and Gadde, 2002). The unit of analysis was the specific incubator-mediated collaboration, each one considered to be an embedded case or sub-case within the two EE cases. In the case study design, the approach we followed was more an embedded approach than a holistic approach (Yin, 1994a,b, p. 41), because analyzing an embedded case study allows for a multiplicity of evidence to be investigated in sub-cases with a focus on multiple crucial aspects of the case (Scholz and Tietje, 2002).

Our first step was to conduct open coding separately for each sub-case study to identify emergent concepts and to construct coding schemes. The open coding part of the research was guided by a set of

Table 1 Interviewees profile and protocol.

ALPHA		BETA		Interview topics	
Code (A)	Respondent and organization	Code (B)	Respondent and organization		
<i>1st round of interviews</i>					
AI1 – AI6	ALPHA’s incubator manager and management team members	BI1 – BI5	BETA’s incubator manager and management team members	<ul style="list-style-type: none"> - Intermediary’s role in the business - Intermediary’s objectives - Intermediary’s support activities/services - Intermediary’s partners and network - Communication, importance, interests of partners in terms of resources - Human, technological, organizational, and financial resources provided by partners - Relationships, and collaborations with partners, and influencing factors - Intermediary’s development - Type of mentorship provided - Relationship and collaboration among partners 	
AP1 – AP6	Managers and researcher-lecturer in AUni	BP1 – BP4	Managers and researcher-lecturer in BUni		
AP7 – AP8	2 staff and CEO from ABUS	BP5 – BP6	3 staff and CEO from BBus1; CEO from BBus2		
AP9	Researcher from ARes	BP7	Extension officer from BRes		
ABP1	Independent consultant for the two business Intermediaries from mentorship agency				
<i>Follow-up interviews (F)</i>					
FAI3, FAP1, FAP8		FBI1, FBI4, FBP2, FBP4, FBP5, FBP6, FBP7			<ul style="list-style-type: none"> - Intermediary’s support activities - Coordination of resources - Incubator’s partners and network - Partner-Intermediary collaboration and involvement

Note: Interviewees are coded and referred to in the text with their codes.

Table 2
Coding scheme.

Theme	Category	Sub-category	Codes	
Intermediation activities for resource mobilization within EEs	Collaboration type	One-sided	<u>Imbalanced resource exchange</u> “The public institutions have so many resources to offer because they are funded by the government; they are not in business. In the private sector, they are in business, and they have few resources; you cannot compare what they offer to the incubator”. “Partners are giving different resources. For example, we get support from the entire University, but Business-B2 is a smaller entity with a staff of probably ten people, including the director”.	
		Joint	<u>More balanced resource exchange</u> “The is joint planning and agreeing for resource allocation according to partners interests. In meetings, we agree on activities, carrying out yearly or extra meetings with each partner. Some partners provide more, some partners provide less, but it is important they all provide”.	
		Mutual	<u>Equally balanced resource exchange</u> “Through agreements (MOUs), depending on each partner role, the incubator team contacts partners through phone calls, emails, or meetings to discuss activities and establish mutual interests and benefits”.	
	Influential factors	Unfavorable influential factors		<u>Structural embeddedness</u> <u>Informal governance</u> “It is not clear in the agreements about how some of these processes or incomes can be shared amongst the three the incubatees, the partners, and BETA”. <u>Conflicting logics</u> “The public organizations have a way to work, and private organizations have another way to work, so it is a key challenge”. Low organizational stability “I have looked at and handled issues strategically because of the change of the principal executive director, which gave us instability. But we, for example, clarified the mutual benefits with the new principle executive director to prevent confusion and disorder”. <u>Operational embeddedness</u> <u>Extreme leadership (authoritarian)</u> “We think the leadership and the style and the capability of the persons who are in charge can make a huge difference for better or for worse”. “I’m saying leadership and synergies matter so the governance can manage love brought by the type of leadership started from the chairman. But if the chairman goes to a meeting taking 70% of the time speaking, then people are going away with ideas. A good chair has to be a good listener and use a short time to speak”. <u>Lack of commitment</u> “BBus1 is supposed to market products, that is the function of BBus1, but they don’t do it”. <u>Relational embeddedness</u> <u>Weak-tie relationship</u> “So you can say it was forced marriage, we didn’t fall in love, and then wrote the proposal together”. “There must be chemistry, and I think there is no chemistry”.
				<u>Operational embeddedness</u> <u>Strategic Leadership</u> “The incubator manager proposes and makes plans with partners, organizes activities with them, represents the incubator, and also decides on certain issues, but sometimes a manager delegates the lead in certain activities to the staff because he is overloaded”. “Incubator managers take the lead to communicate with partners and agree on activities with top leaders (communication between leaders)”.
				Intermediation activity - Facilitation “ALPHA facilitates activities with partners by allocating resources (money) to implement such activities, so they then enhance commitment and mutual benefits with partners to participate. They also facilitate harmonies within the consortium by checking governance agreements and do amendments, in case this is needed to improve relationships and enhance the commitment of partners”. “ALPHA facilitates carrying out activities through MOUs as they give guidelines respecting the roles of partners; this also creates common understanding”. “ALPHA facilitates communication to develop activities with other partners and create harmonization among partners to support incubatees, but partners also facilitate incubation support by giving resources to the incubator”.
				Intermediation activity - Coordination “ALPHA coordinates activities with partners and also coordinates the ALPHA investment, so partners of the university and Alnc can get close”. “We in the incubator coordinate internships and allocations, and I also coordinate training and exhibitions in junction with potential partners to do it; we divide tasks”.

guiding questions derived from resource dependency theory, including: “What interactions, activities, events, and tasks were conducted between the incubator management team and its partners to mobilize resources to support incubation?” “Which resources were exchanged in the resource mobilizations?” “Which of the partners’ behaviors led to limitations to mobilize necessary resources to support incubation?” “What roles did the incubator and partners engage in to support entrepreneurs?” and, “Which factors influenced resource mobilization

activities?” Each interview transcript was read several times while looking for answers to these questions. The representation of the coding scheme can be found in Table 2.

Next, we conceptualized different collaboration types as embedded cases within ecosystems. Across the cases in each collaboration type, we analyzed the types of resource contributions and the factors influencing the resource mobilization. The analysis identified the partners’ different intentions and actions, the resource dependency relationships, and the

factors that shaped behaviors and interactions. In addition, we categorized intermediation activities that helped to mobilize resources within the two EEs.

Finally, we compared our empirical results with the existing literature to draw a conceptual model of the dynamics of collaboration in which an intermediary organization is involved. The analytical process involved examining and re-examining transcripts, memos, observation notes, and ideas, and thoughtfully refining themes and corresponding categories and sub-categories. To find out what the concepts represent and how they are related to each other, the research team used discussions to develop a mutual understanding of the concepts. Iterative techniques, such as frequent debriefing sessions and joint examination of previous research among the team, were used to frame findings to avoid bias and personalization. The results of the data analysis are summarized and presented in Table 3. Reflection on the literatures of EEs, resource dependence, and embeddedness was used to relate the identified concepts to the literature and to deconstruct and reconstruct these concepts. Finally, the research team reflected on the logic and rationale behind the interpretations to ameliorate personal bias.

4. Findings

In the following, we first characterize the resource mobilization activities involving ALPHA incubator (AInc) and BETA incubator (BInc) and their main roles during this process. We then present nine collaboration incidents embedded in the ALPHA and BETA ecosystems, identify the incubators' intermediating roles, and discuss the embeddedness factors that influenced these collaboration incidents. After presenting the nine embedded cases of collaboration (hereafter referred to as sub-cases), we categorize them into three types of interdependency and discuss how resource interdependency impacted the partners' collaboration.

4.1. Resource mobilization in ALPHA and BETA

We identified five distinct collaboration types embedded in ALPHA EE, each of which is described in the following as Sub-Cases A, B, C, D, and E, and all of which occurred during the phases of strategic planning, strategy implementation, service design, and implementation of incubation services.

4.1.1. Sub-case A

AInc configures EE governance structure with the direct involvement of ABus, AUni, ARes. Sub-Case A involved the collaboration of all the partners in ALPHA to develop and approve strategic plans for AInc's operations for establishing and developing the EE. During BoD meetings, all partners proactively participated with different inputs and knowledge depending on their sector background, except for ARes, who had limited involvement, duo to their inadequate knowledge and understanding of the incubation concept. On the other hand, ARes committed to providing feedback and technical input during meetings. The BoD had an independent chairman who promoted a common vision and a moral obligation, facilitating decision-making to mobilize and exchange resources [AI2-4, AP1-4, AP7-8]. The incubator manager also promoted a common vision and supported BoD meetings by developing and proposing strategic plans grounded in sound administrative and fiscal management and a clear sense of the incubation services needed. The incubator manager also went beyond the formal governance structures, proactively maintained a close connection with ARes, and insisted on additional participation in regular meetings to maintain the dialogue. This helped develop a better understanding of the concept of incubation and its potential benefits for ARes, as explained by a staff member of AInc: "Our manager takes the lead in communicating with ARes Their involvement is growing, it is improving and going in the right direction" [AI3]. It should also be noted that most of the representatives of AUni, ARes, and ABus had good personal relationships based on professional

acquaintance before the establishment of ALPHA.

4.1.2. Sub-case B

AInc configures EE infrastructure through joint investment and with the direct involvement of ABus. AInc and ABus supported entrepreneurs by linking them with export markets. Both AInc and ABus were aware of the potential to create long-term business through the entrepreneurs' production. The potential for increasing export market share, as well as a visionary belief in business opportunities in new product development, led AInc and ABus to jointly develop a strategic investment plan to expand incubation facilities to support production and commercialization within ALPHA. The incubator provided funding to invest in machinery, and ABus provided the land area for a planned facility. They developed and signed formal agreements with specifications, mutual contributions, and benefits. ABus was strongly committed to supporting incubation and entrepreneurs in marketing and commercialization. ABus's CEO was eager to achieve socioeconomic impact in rural areas with the support of AInc [AI2; AP7].

4.1.3. Sub-case C

AInc brokers technology transfer between ARes and the ecosystem. This collaboration aimed at ensuring the diffusion and adoption of ARes's technologies to entrepreneurs – specifically, the distribution of disease-resistant plant varieties to startup nurseries. This was a central type of activity that had been envisioned to occur within the agribusiness program's EE model. Even though ARes provided some material, ARes was, in general, reluctant to transfer its technology to the entrepreneurs, despite this being part of its mandate as a public research organization [AI1,3; FAI3]. ARes was inexperienced and uncomfortable with the business logic promoted by AInc to enable the commercialization of its technology. A lack of internal procedures and organizational policies at ARes obstructed the process, and a lack of leadership prolonged the decision-making process and created uncertainty. Inadequate management of intellectual property rights was a fundamental problem, as explained by an interviewee from ARes: "The main issue now is intellectual property rights.... With the proper policy on intellectual property rights, it will be possible to share technology and incubate more people." [AP9].

4.1.4. Sub-case D

AInc facilitates business development services with the direct involvement of ABus. In Sub-Case D, ABus, in collaboration with AInc, promoted entrepreneurs' commercialization of new products, including the development of high-quality products based on new plant varieties. ABus connected entrepreneurs with its business networks to facilitate the commercialization of their products and allowed the entrepreneurs to use its export license. AInc and ABus also jointly organized training and trade exhibitions to promote products from the ecosystem's entrepreneurs [AI1]. In ALPHA, ABus and AInc benefited from providing these commercialization services through profit-sharing schemes with entrepreneurs [AI1–3; AP7–8].

4.1.5. Sub-case E

AInc facilitates business development services with the direct involvement of AUni. Collaboration E involved AInc and AUni. AUni provided product development expertise, technical support, and equipment, and conducted training and workshops for student entrepreneurs to develop new products. Meanwhile, AInc also provided resources for the maintenance of the partner's equipment, training, and workshops for student entrepreneurs. A change in AUni's top management led to a change in the university's representation in AInc's BoD. Initially, the new AUni BoD member was unfamiliar with the incubation concept, which resulted in an unwillingness to support the incubation services provision [AI1; AP8]. However, after multiple meetings led by the incubator manager, who explained the extra-curricular activities and support for student entrepreneurs, the new representative realized the importance of supporting incubation services. The incubator manager in AInc

Table 3
Overview of nine sub-cases of incubator mediated collaborations embedded within the entrepreneurial ecosystems ALPHA and BETA.

Case	Purpose of collaboration	Resources required from actors	Resources exchanged	Main factors influencing exchange
ALPHA				
A	Develop and approve governance structure, strategy and operational plans, and budget for the incubator partnership	ABus: Management and value chain knowledge and business expertise. AUni: Student entrepreneurs, commodity knowledge, research capacity. ARes: New technologies, research capacity. AInc: Incubator management knowledge, funding for ALPHA-based activities.	Organizational and management knowledge and expertise mainly from ABus and AUni, and to a lesser degree from ARes. ABus and AUni commitment and flexibility ensured AInc launch and operation.	<ul style="list-style-type: none"> • Mixed execution capacity • Strategic leadership • Strong commitment
B	Invest in a jointly owned processing facility for tenants' small batch production	ABus: Land. AInc: Infrastructure investment.	- ABus and AInc exchanged resources, i.e., funding and access to land necessary to initiate a joint project.	<ul style="list-style-type: none"> • Shared logic • Strategic leadership • Strong commitment
C	Enhance tenants' product quality by diffusing disease-resistant varieties and planting material to tenants	ARes: Access to new crop varieties and management technologies. AInc: Commercialization and incubation knowledge.	- Limited transfer of new farming practices and crop technologies.	<ul style="list-style-type: none"> • Conflicting logics • Informal governance • Indecisive leadership
D	Provide business development service to tenants, including new product development (NPD), marketing, and market access.	ABus: Value chain knowledge, business experience, and market linkages, training expertise. AInc: Training expertise and funding of exhibitions.	- All expected resources were exchanged.	<ul style="list-style-type: none"> • Shared logic • Strong commitment • Strong-tie relationship
E	Provide incubation services to university-based tenants' startups	AUni: Commodity knowledge, equipment, machinery, labs, training expertise. AInc: Incubator management knowledge.	- Change in authorities halted resource mobilization causing temporary delays in AUni resource contribution.	<ul style="list-style-type: none"> • Low organizational stability • Strategic leadership • Strong commitment
BETA				
F	Develop and approve governance structure, strategy and operational plans, and budget for the incubator partnership	BBus1/BBus2: Mobilizing entrepreneurs, value chain knowledge, and business expertise. BUni: Student entrepreneurs, commodity knowledge, technical expertise, research capacity. BRes: New technologies, research capacity. BInc: Incubator management knowledge, funding for ALPHA-based activities.	Organizational and management knowledge and expertise mainly from BUni and to a lesser degree from BRes. Limited contributions from BBus1/BBus2. Launch and operation of BInc significantly delayed.	<ul style="list-style-type: none"> • Conflicting logics • Informal governance • Authoritarian leadership
G	Introduce new crop varieties and management practices to tenants	BBus2: Access to tenants, training expertise. BRes: Access to new crop varieties and management technologies. BInc: Incubator management knowledge, funding for diffusion activities.	- BBus2 mobilized tenants, and BInc provided funding for diffusion activities, but unclear governance and poor internal communication temporarily blocked the supply of BRes technologies.	<ul style="list-style-type: none"> • Informal governance • Strong commitment • Strong-tie relationship
H	Establish the capacity to support tenants' NPD	BUni: Commodity knowledge, NPD support, labs, machinery. BInc: Funding for equipment.	- All the needed resources were exchanged.	<ul style="list-style-type: none"> • Strong commitment • Enthusiasm • Strong-tie relationship
I	Establish a new value chain by building local processing capacity and identify customers for end products	BBus1: Value chain and business development knowledge. BBus2: Product processing and packaging expertise. BInc: Funding for infrastructure and business development activities.	Funded by BInc, BBus2 mobilized and supported startup tenants in commodity processing. BInc funded BBus1 service provision. Limited and delayed results of both activities due to lacking capacity and conflict among BETA partners over means and ends.	<ul style="list-style-type: none"> • Informal governance • Lack of capacity • Indecisive leadership

explained, “We clarified the mutual benefits with the new principal executive director to prevent confusion and disorder.” [AI1]. The incubator manager facilitated continued management support in addition to the provision of resources for AUni.

In BETA EE, we found four sub-cases of collaborations involving mobilization of resources related to strategic planning, strategy implementation, service design, and implementation of incubation services, described as Sub-Cases F, G, H, and I, below.

4.1.6. Sub-case F

BInc configures EE governance structure and practices with direct involvement of BBus1, BBus2, BUni, BRes. Collaboration F included all formal partners of BETA. The objective was to create and approve a strategic plan for how to develop BETA. As in AInc, BInc and its partners provided knowledge and technical expertise during BoD meetings. In this activity, BUni and BRes mainly provided knowledge but also imposed decisions that unilaterally benefitted themselves [BP1,3,5; FBP5]. They were able to do so because, as resource-rich partners, they

could contribute significantly more resources to support EE activities than could BBus1 and BBus2. The BUni and BRes representatives seemed uncommitted to the joint planning process and seldom attended meetings. The logics on which the actors based their actions were fundamentally in conflict. BUni and BRes believed that BInc should act as a public organization providing free services to society [BP1,7], following formal rules and procedures aligned with public organizational practices [BP3]. BBus1 and BBus2, on the other hand, advocated for enterprising behavior, flexible management systems with informal procedures, risk-taking, and profit-seeking. The actors were unable to agree on a BoD charter to define governance structures and manage relations among the EE partners, which led to unfruitful discussions, inadequate decision-making, and a lack of organizational formalization of the partnership [BP3–6; FBP5–6]. Furthermore, the BoD meetings were characterized by extremes of leadership. On the one hand, the BInc manager displayed indecisive leadership and felt obliged to follow the opinion of the more powerful partners (mainly BUni) rather than insisting on exercising the managerial discretion associated with his position [BP1,4; FBP4–6]. On the other hand, the BoD chairman assumed an authoritarian leadership role rather than a collaborative, consensus-seeking position [BP3; FBP5–6]. As a result of the combination of indecisiveness and authoritarianism, the BBus partners became unmotivated to participate in the collective decision-making process. Although BUni and BRes had a long history of collaboration, none of their members had previously interacted with the members of BBus1 and BBus2.

4.1.7. Sub-case G

BInc brokers technology transfer between BInc, BBus, BRes, and the ecosystem. In Sub-Case G, BRes transferred technology, in the form of new seed varieties, to farmer cooperatives in several regions of Kenya. BInc was responsible for coordinating the technology transfer and providing technical training to support the adoption of the technology. Within BRes, a very large organization with geographically decentralized units, few employees knew about the formal collaboration with BInc, and the employees were reluctant to collaborate. This reluctance was amplified by some BRes top managers' uncertainty about the legal status of this type of public-private partnership arrangement. Clarification of the situation took several months due to difficulties in getting the attention of BRes's management. Eventually, the collaboration was successfully negotiated with the right BRes decision-makers, and issues related to IPR management and profit-sharing were clarified. Despite the lack of general agreement on policies and procedures for IPR and profit-sharing [BI2; BP7; FBP7] within BETA, technology transfer took place when a bilateral agreement was signed between BRes and BInc, clarifying mutual commitments.

4.1.8. Sub-case H

BInc facilitates service provision with direct involvement of BUni. Collaboration H aimed at providing new product development support to entrepreneurs. BUni committed to providing labs, equipment, and technical support and facilitate prototyping and product development [BI1–3, BP1–2]. BInc provided financial resources for BUni to invest in new lab equipment to enhance the product development service to entrepreneurs. Both partners were interested in supporting entrepreneurs in developing and marketing new and innovative products.

4.1.9. Sub-case I

BInc facilitates value chain establishment with direct involvement of BBus1, BBus2, BUni, BRes. Collaboration Sub-Case I involved BInc, BBus1, and BBus2 in developing tenants' business and marketing services for tenants. BBus1 and BBus2 were both resource-poor and therefore dependent on BInc for funding to enable them to perform the incubation services to which they had committed [BI2–3; BP2–3; FBP2,4]. Moreover, BBus1 and BBus2 proved unable to provide relevant business knowledge to support entrepreneurs [BP3–6; FBP4–6]. As expressed by an interviewee: "I would have gone for a strong business

partner who is not entirely dependent on the funds of BInc to carry out activities. But here, it becomes very difficult because the incubator needs to financially support these business partners who must gain profits" [BP3]. A significant conflict between one of the business partners and BUni over the geographical localization of a business training facility also negatively impacted the partners' commitment. The conflict between the partners remained unmanaged due to the inability of BInc to assume leadership. Eventually, BInc agreed to provide equipment to BBus1 to enable it to help entrepreneurs with product processing and packaging. BBus2 was provided with financial resources to develop and conduct business development workshops for tenants. However, the results of Collaboration I were unsatisfying for the EE because only a few entrepreneurs obtained the programmed support and mostly without concrete results in terms of progress in product commercialization.

The nine sub-cases (A-I) of collaborations described above are results of the intermediation of the incubators of ALPHA and BETA, which played a crucial role in orchestrating processes among the resource providers and shaping the ecosystem dynamics. These processes can be categorized as *configuring* the ecosystem (establishing governance mechanisms, leading strategic planning with EE partners, investing in EE infrastructure), *facilitating* service provision (creating product and business development services with EE partners), or *brokering* knowledge and technology transfer to tenants (connecting resource providers with entrepreneurs). It worth recognizing that intermediaries often take dual or multiple roles in a single collaboration. Successful collaborations were observed in both EEs. However, this occurred more in ALPHA because AInc took a clearer strategic role in conducting the intermediation activities than BInc did. For instance, AInc actively played a leading coordination role in all the identified collaborations by suggesting procedures to follow, resources needed, and outcomes from collaborations (i.e., synergy emerging from partners aligning their efforts). In terms of configuring the EE, AInc promoted a common vision and supported agreement among resource providers by proposing strategic development plans based on needs assessments. Both AInc and BInc facilitated the mobilization of resources from the other actors in their EEs to establish business development services, such as product development and marketing. Both incubators brokered technology transfer from research organizations to entrepreneurs, including by instigating governance mechanisms to regulate IPR.

4.2. The impact of interdependencies on collaboration

To analyze the impact of the interdependencies among the actors involved in the collaborations intermediated by the incubators, we categorized collaborations A to I according to the types of dependency proposed by resource dependency theory. The integrated framework can be found in Table 4. We categorized C, F, and I as *one-sided dependency-based*, A, E, and G as *joint dependency-based*, and B, D, and H as *mutual dependency-based relationships*. Next, we describe the three categories.

In the *one-sided dependency-based collaboration* category (C, F, and I in Table 4), significant differences existed in terms of the partners' resource availability. Some partners were able to provide significant resources, while others were unable to contribute to the functioning of the EE. This established a situation where resource-dependent partners felt marginalized. For example, BBus1 and BBus2 felt unable to influence the strategic planning and operationalization of BETA activities [BI2–3; BP2–3; FBP2,4]. This initiated a vicious cycle where resource-rich and resource-poor partners both adopted opportunistic behaviors and, as a consequence, opted for a confrontational bargaining strategy towards their partners. Due to the structural embeddedness of the partnership within the agribusiness incubation program, the actors had to keep collaborating even though the situation was negatively impacted by unfavorable structural, operational, and relational embeddedness factors. Conflicting logics between public organizations and business partners or business-oriented incubators were not constructively addressed but led to significant and continued disagreement. Limited

collaborative capability inhibited the formation of formal governance structures (e.g., procedures and IPR agreements). The resulting uncertainty was intensified by extremes of leadership (too authoritarian and too indecisive), which reinforced the lack of partners' commitment to engage in operational execution. Furthermore, the weak-tie relationships among partners inhibited the exchange of resources, resulting in one-sided dependency collaborations [FBI4; FBP2,4,7] in which individual partners pursued their own goals at the expense of the overall development of the EE. The unfavorable embeddedness factors created and reinforced disagreements and unaligned efforts, leading to suboptimal performance compared to the incubators' objectives and incubation plans for supporting entrepreneurs [AI1; BI1–3; BP1–6; FBP4–5].

In the *joint dependency-based collaborations* category (A, E, and G in Table 4), some partners were resource-rich and others were less so, but all partners provided various resources and undertook different but relevant tasks. The partners obtained clear benefits by having a more balanced exchange of resources, thus fulfilling mutual expectations. This category was characterized by cooperative behavior and willingness to achieve common goals in relation to the development of support for entrepreneurs. The partners were interested in supporting the same target groups (university students, entrepreneurs, and small-scale farmers), which motivated them to contribute to developing EE functions [AI3]. On the other hand, the joint dependency category also displayed aspects of structural and operational embeddedness that unfavorably influenced the nature of the collaborations, for example, temporary delays in the execution of incubation support. In the category of structural embeddedness, organizational changes in partner organizations and informal governance in incubators negatively influenced collaborations [AI1, BP7]. In terms of operational embeddedness, lack of understanding and knowledge about the incubation concept created misunderstandings and negatively impacted the partners'

implementation capacity [AI6; AP3,9; BP7; FBP7; ABP1]. On the other hand, favorable operational and relational embeddedness, primarily strategic leadership and strong commitment, as well as relationships based on strong ties among partners, mediated collaborative relations by creating common ground among partners and clarifying the nature of mutual benefits [AI1; FAP1,8].

The *mutual dependency-based collaborations* category (B, D, and H in Table 4) is characterized by collaborations aimed at achieving the EE partners' overall goals of collectively supporting entrepreneurs and sustaining the incubator. All partners provided the critical and relatively equivalent amount of resources [AI1]. The partners' experience of mutual benefits facilitated a balanced exchange of resources and power, i.e., equal influence over each other. The environment of the third group included supportive structural, operational, and relational embeddedness. The supportive structural embeddedness was characterized by clear governance structures regarding procedures for collaborations and coordination, and clear agreements on investment policies and resources exchanged, as expressed by the incubator manager in AInc: "Agreements cover our objectives and manage the relationships between the partners" [AI1]. Supportive operational embeddedness included strong commitment and enthusiasm among the partners for participating and supporting resource mobilizations. The supportive relational embeddedness included strong-tie relationships with ongoing interactions and a sense of mutual understanding among the partners. Strong ties among partners had been established through previous collaborations that facilitated agreements, such as to co-invest in processing equipment for income-generating service provision. These supportive factors enhanced mutual understandings and reinforced synergies that stimulated interactions and facilitated the mobilization of necessary resources for EE development.

Table 4
An integrated framework incorporating resource dependence and embeddedness factors in explaining collaboration patterns in EEs.

	Resource dependency relationship								
	One-sided (opportunistic)			Joint (cooperative)			Mutual (collaborative)		
Entrepreneurial ecosystem	ALPHA	BETA	BETA	ALPHA	ALPHA	BETA	ALPHA	ALPHA	BETA
Collaboration case	C	F	I	A	E	G	B	D	H
Intervention stage	Technology transfer	Governance	Value chain building	Governance	Service provision	Technology transfer	Joint investment	Service provision	NPD service
EE actor types involved ¹	Inc, Res	Inc, Bus, Uni, Res	Inc, Bus, Uni, Res	Inc, Bus, Uni, Res	Inc, Bus	Inc, Bus, Res	Inc, Bus	Inc, Bus	Inc, Uni
Intermediary role of incubators	Brokering resource access	Configuring EE governance structure and practice	Facilitating resource availability	Configuring EE governance structure and practice	Facilitating service provision	Brokering access to resources	Configuring EE physical infrastructure	Facilitating service provision	Facilitating service provision
Embeddedness factors influencing resource exchange									
Structural embeddedness									
Institutional logics	Conflicting	Conflicting	Conflicting	Overlapping	Overlapping	Overlapping	Shared	Shared	Shared
Type of governance	Informal	Informal	Informal	Informal	Formal	Informal	Formal	Formal	Formal
Organizational stability	Low	Low	Low	High	Low	Low	High	High	High
Operational embeddedness									
Execution capacity	Weak	Weak	Weak	Mixed	Mixed	Weak	Strong	Strong	Strong
Leadership style	Extreme (indecisive)	Extreme (authoritarian/indecisive)	Extreme (indecisive)	Strategic, visionary	Strategic	Visionary	Strategic, visionary	Strategic	Visionary
Level of commitment	Low	Low	Low	Strong	Strong	Strong	Strong	Strong	Strong
Relational embeddedness									
Type of social ties	Weak	Weak	Weak	Mixed	Mixed	Strong	Strong	Strong	Strong

Note: ¹ Inc: incubator organization; Res: research or technology institute partner; Bus: business partner; Uni: university partner.

5. Discussion

In this study, we have investigated incubators' role as open system intermediaries in the formation and early development of EEs designed to foster development in a specific sector in a geographically bounded area. We have scrutinized how dependency relations between actors, combined with their social relations, impact the patterns of collaboration that emerge as a result of incubators intermediating these relations for EE development.

Our findings show that incubators not only intermediate among entrepreneurs and between tenants and resource providers, as a way of supporting startup formation and growth, but also configure the EE structures, facilitate other actors' service provisions, and broker resource exchange at the ecosystem level to establish and develop the EE itself. We have shown how EE-level intermediation depends on the actors' resource dependencies and may result in three types of collaborative patterns: one-sided, joint, and mutual dependency. These findings contribute to a better understanding of the processes involved in the creation and development of EEs.

In this context, incubators are not only seen as open system intermediaries mediating services by bridging organizations, but also they actively engage in negotiating, facilitating, configuring, and resource brokering in EEs (Stewart and Hyysalo, 2008). Indeed, our study suggests that that due to their active engagement and negotiation with different actors in establishing the ecosystems, incubators in a developing countries context could be considered what Kivimaa et al. (2019) refer to as "niche or grassroots intermediaries". Our context – the creation of entrepreneurial ecosystems in an emerging or underdeveloped market with weak or non-existent entrepreneurial infrastructure – features activities that move toward developing niches in society in which entrepreneurs can thrive.

We contribute to the emerging literature on EE dynamics by conceptualizing incubators' role as a driving force in the configuration and development of EEs. Our cases are deliberate policy-driven attempts to create EEs grounded in cross-sectoral partnerships. This context highlights a heretofore little-recognized role of the incubator sub-system as the designer of the EE's structure and functionality through interacting with the spectrum of EE actors. Most of the empirical research on EEs investigates EE formation and function with the presumption of the pillars of human capital, investment, and support organizations (e.g., Isenberg, 2011). Our study, however, draws attention to the crucial influence of resources and resource dependencies among actors in the formation and function of EEs. We agree with Roundy and Bayer (2019) that it is risky to assume that insights from EEs in high-income countries are pertinent to EEs in emerging economies.

It is worth emphasizing that our study represents an "artificial" system (Colombo et al., 2019) in which the incubator acts as a "feeder of an ecosystem" (Stam 2015). Our results partially answer the call by Colombo et al. (2019) to develop new frameworks to comprehend entrepreneurial ecosystems' governance processes, mechanisms, relationships, and practices. However, we question whether the oversimplification complex phenomena like the formation and function of EEs by offering an integrated framework is the right approach to better understand dynamics and processes. Although EE is not an industry-specific concept, industry variation obviously occurs. Yet, despite the impacts of digitalization and globalization, we argue along with Cavallo et al. (2019) that EE researchers and policymakers should pay attention to the local cultural-cognitive context of specific EE interventions.

In addition, our cases show that policy-driven interventions for EE creation can be feasible but challenging. An overall consideration is setting up features that enable an optimal system structure considering the specific context, i.e., the development level of the target sector or industry, the business climate of the city or region, etc. Different settings may require a more or less open system to succeed, i.e., more planned setups that foster fruitful collaboration among predefined key actors

versus more open setups that enable EE creators to form relaxed partnerships based on the actual trajectory of the EE's development, thus providing the flexibility to avoid getting stuck in unproductive relationships. We observe that EE can be furthered through two overall intervention strategies, one connected to strategy and planning, the other being bricolage and emergent, both of which may entail benefits and disadvantages depending on the concrete cultural, social, and political context.

Finally, we enrich the literature on how critical EE sub-systems help explain the main system. In contrast to Loots et al. (2020), we find that resource constraints in EEs can only be compensated for by social relations if social ties are strong, if the level of commitment is high, and if strategic leadership is present. We find that the mediating factors are rooted in embeddedness, which affects the reciprocity and exchange among partners (Granovetter, 1985). Therefore, these mediating factors occur in the structural, operational, and relational embeddedness dimensions and not solely in the relational dimension.

6. Conclusions

Our study addresses two research questions in the literature of entrepreneurial ecosystems. The first question addresses the intermediary role that incubators play in entrepreneurial ecosystem formation and function. The second investigates the mediating factors related to intermediation and resource dependencies that shape collaboration patterns in EEs. Based on an integrated framework introduced in Table 4, in Fig. 3 we propose a conceptual model illustrating three fundamental collaboration patterns shaped by resource dependency relationships and moderated by structural, operational, and social embeddedness factors. The aim of the proposed framework is not to oversimplify a complex and context-dependent phenomenon, but to unpack and characterize collaboration patterns in entrepreneurial ecosystems orchestrated by intermediaries' interventions and influenced by structural, operational, and social embeddedness factors. As can be seen in Fig. 3, structural embeddedness, in the form of institutional logics, changes from "conflicting" to "overlapping" to "shared" as the patterns of collaboration change from one-sided to joint to mutual resource dependency. We argue that in combination with conflicting logics, three fundamental embeddedness factors increase the likelihood that a collaboration will result in a pattern of opportunistic relations: indecisive leadership, lack of commitment among participants, and weak social ties. In combination with overlapping logics, and an increase in commitment, the presence of mixed and strong ties and strategic leadership seems to be a necessary condition for fostering cooperative patterns among partners. Finally, when shared institutional logics are supported by formal governance structure, organizational stability, and execution capacity, the EE partners engage in mutual collaborative patterns based on optimal resource exchange.

EEs inevitably include unequal relationships, and a fundamental task for systems intermediaries is to navigate power imbalances. Our findings show that unequal relationships are not per se problematic. They can be constructive if they are grounded in a common understanding of purpose, aligned objectives, and effective and visionary leadership. Strong ties also played an important role in the two cases. In our case, strong ties had a positive effect on collaboration and EE establishment but may have had a limiting effect on the overall quality of value creation within the EEs. Thus, EE planners may initially want to rely on partnerships based on strong ties to establish fundamental EE infrastructure while ensuring that the EE can seize weaker ties as it becomes more institutionalized, i.e., by designing a flexible governance model that allows the intermediating incubator to move from an initial, "artificial" (designed) mechanism to a more "natural" (emergent) structure in later stages (Colombo et al., 2019).

Our analysis also suggests that incubators play a critical role in shaping collaboration in ecosystems through their different roles of brokering, facilitating, and configuring to mobilize resources from

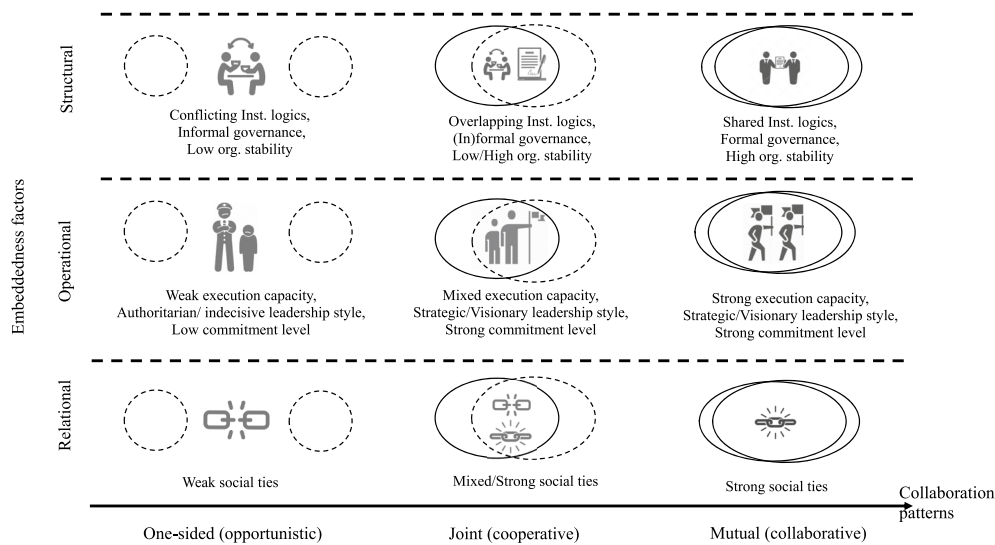


Fig. 3. Collaboration patterns embedded in entrepreneurial ecosystems and influenced by embeddedness factors.

partner organizations to entrepreneurs. Moreover, these intermediation activities are similar to the “arbitrator” role of intermediary organization, as described by Johnson (2008), in which intermediaries not only provide resources but also support actors with mechanisms and interventions for them to succeed in their collaboration. Thus, the critical function of intermediaries in adopting strategic actions is leading ecosystems to enable resource mobilizations. Thus, through the adoption of strategic interventions and intermediation activities, intermediaries contribute greatly to forming and developing entrepreneurial ecosystems.

We contribute to the literature of entrepreneurial ecosystem research in theory and practice. In theory, we do so by conceptualizing the functionality of entrepreneurial ecosystems in which different resource mobilization scenarios occur through intermediation activities led by intermediaries (i.e., incubators). Our study further identified contextual mediating factors that emerge concerning intermediation and resource dependencies, which influence collaborations in EEs. We distinguished the mediating factors rooted in embeddedness that affect reciprocity and exchange among partners (Granovetter, 1985). These mediating factors, therefore, occur in the structural, operational, and relational embeddedness dimensions. The mediating effect of such factors influences actors’ interactions and behaviors, which consequently become different collaboration patterns. The resource dependency-embeddedness nexus helps explain the dynamic phenomenon and, as suggested by Wurth et al. (2021), helps get one step closer to a holistic and realistic understanding of entrepreneurial ecosystems, rather than developing micro-theories. We identified three collaboration patterns within two ecosystems that are characterized by the resource dependency-embeddedness nexus (Casciaro and Piskorski, 2005; Pfeffer and Salancik, 2003).

In practice, practitioners and managers need to consider the patterns and characteristics of the different collaboration types, i.e., mutual, joint, and one-sided dependency, and work toward achieving the first two to enable resource mobilization and exchange. Moreover, the mediating factors related to intermediation and dependencies are useful from a strategic perspective to avoid misunderstandings about the nature of collaborations and about the roles that partners should play in them. A major take-away is distinguishing between collaboration and cooperation in ecosystems. Collaboration is a coordinated, synchronous activity resulting from a continued attempt to construct and maintain a shared conception of a problem. Cooperation is accomplished by the division of labor among participants, where each party is responsible for solving a portion of the problem.

Our study has some limitations that can be further addressed in

future research. First, our study only covers two years in relatively new entrepreneurial ecosystems with around five years of collaborations among actors. Thus, future research should involve longer longitudinal data collection with more mature entrepreneurial ecosystems, older than five years, to compare and examine how intermediation and mediating factors evolve and impact the dependency-embeddedness nexus. Second, embracing contextual factors was crucial for this research to offer a holistic understanding of each entrepreneurial ecosystem; therefore, our findings are not necessarily generalizable to other contexts. Third, the role of intermediary organizations is becoming evident in entrepreneurial ecosystem research, but we focused on only one type, and more research can explore other types of intermediary organizations such as ecosystem support organizations to compare how they strategically influence resource mobilizations. Lastly, future researchers can also replicate our study in other regional settings to compare conditions and factors affecting collaborations and, subsequently, the functionality of the entrepreneurial ecosystem.

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References

Acs, Z.J., Stam, E., Audretsch, D.B., O’Connor, A., 2017. The lineages of the entrepreneurial ecosystem approach. *Small Bus. Econ.* 49 (1), 1–10.
 Armanios, D.E., Eesley, C.E., Li, J., Eisenhardt, K.M., 2017. How entrepreneurs leverage institutional intermediaries in emerging economies to acquire public resources. *Strat. Manag. J.* 38 (7), 1373–1390.
 Arnaldi, S., Neresini, F., 2019. The role of intermediary organizations in the mainstreaming of Responsible Research and Innovation in the Italian industrial sector. *J. Respons. Innov.* 6 (3), 361–367.
 Asheim, B.T., Smith, H.L., Oughton, C., 2011. Regional innovation systems: theory, empirics and policy. *Reg. Stud.* 45 (7), 875–891.
 Baker, T., Nelson, R.E., 2005. Creating something from nothing: resource construction through entrepreneurial bricolage. *Adm. Sci. Q.* 50 (3), 329–366.
 Barney, J.B., 1996. The resource-based theory of the firm. *Organ. Sci.* 7 (5), 469–469.

- Bergek, A., Norrman, C., 2008. Incubator best practice: a framework. *Technovation* 28 (1–2), 20–28.
- Brown, R., Mason, C., 2017. Looking inside the spiky bits: a critical review and conceptualisation of entrepreneurial ecosystems. *Small Bus. Econ.* 49 (1), 11–30.
- 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.
- Cao, Z., Shi, X., 2020. A systematic literature review of entrepreneurial ecosystems in advanced and emerging economies. *Small Bus. Econ.* 1–36.
- Casciaro, T., Piskorski, M.J., 2005. Power imbalance, mutual dependence, and constraint absorption: a closer look at resource dependence theory. *Adm. Sci. Q.* 50 (2), 167–199.
- Cavallo, A., Ghezzi, A., Balocco, R., 2019. Entrepreneurial ecosystem research: present debates and future directions. *Int. Enterpren. Manag. J.* 15 (4), 1291–1321.
- Checkland, P., 1994. Systems theory and management thinking. *Am. Behav. Sci.* 38 (1), 75–91.
- Churchman, C.W., 1979. *The Systems Approach and its Enemies*. Dell, New York, NY.
- Clayton, P., Feldman, M., Lowe, N., 2018. Behind the scenes: intermediary organizations that facilitate science commercialization through entrepreneurship. *Acad. Manag. Perspect.* 32 (1), 104–124.
- Cohen, B., 2006. Sustainable valley entrepreneurial ecosystems. *Bus. Strat. Environ.* 15 (1), 1–14.
- Colombo, M.G., Dagnino, G.B., Lehmann, E.E., Salmador, M., 2019. The governance of entrepreneurial ecosystems. *Small Bus. Econ.* 52 (2), 419–428.
- Content, J., Bosma, N., Jordaan, J., Sanders, M., 2020. Entrepreneurial ecosystems, entrepreneurial activity and economic growth: new evidence from European regions. *Reg. Stud.* 54 (8), 1007–1019.
- Dionisio, E.A., Júnior, E.I., Fischer, B.B., 2021. Country-level efficiency and the index of dynamic entrepreneurship: contributions from an efficiency approach. *Technol. Forecast. Soc. Change* 162, 120406.
- 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.
- Feld, B., 2012. *Startup Communities: Building an Entrepreneurial Ecosystem in Your City*. John Wiley & Sons.
- Feldman, M., Siegel, D.S., Wright, M., 2019. New developments in innovation and entrepreneurial ecosystems. *Ind. Corp. Change* 28 (4), 817–826.
- Frooman, J., 1999. Stakeholder influence strategies. *Acad. Manag. Rev.* 24 (2), 191–205.
- Galvão, A.R., Marques, C.S., Ferreira, J.J., Braga, V., 2020. Stakeholders' role in entrepreneurship education and training programmes with impacts on regional development. *J. Rural Stud.* 74, 169–179.
- García-Pont, C., Canales, J.L., Noboa, F., 2009. Subsidiary strategy: the embeddedness component. *J. Manag. Stud.* 46 (2), 182–214.
- Garnsey, E., 1998. A theory of the growth of the firm. *Ind. Corp. Change* 7 (3), 523–556.
- Goswami, K., Mitchell, J.R., Bhagavatula, S., 2018. Accelerator expertise: understanding the intermediary role of accelerators in the development of the Bangalore entrepreneurial ecosystem. *Strat. Enterpr. J.* 12 (1), 117–150.
- Granovetter, M., 1985. Economic action and social structure: the problem of embeddedness. *Am. J. Sociol.* 91 (3), 481–510.
- Granstrand, O., Holgersson, M., 2020. Innovation ecosystems: a conceptual review and a new definition. *Technovation* 90, 102098.
- Guerrero, M., Liñán, F., Cáceres-Carrasco, F.R., 2020. The influence of ecosystems on the entrepreneurship process: a comparison across developed and developing economies. *Small Bus. Econ.* 1–27.
- Gulati, R., Sytch, M., 2007. Dependence asymmetry and joint dependence in interorganizational relationships: effects of embeddedness on a manufacturer's performance in procurement relationships. *Adm. Sci. Q.* 52 (1), 32–69.
- Hausberg, J.P., Korreck, S., 2020. Business incubators and accelerators: a co-citation analysis-based, systematic literature review. *J. Technol. Tran.* 45 (1), 151–176.
- Hillman, A.J., Withers, M.C., Collins, B.J., 2009. Resource dependence theory: a review. *J. Manag.* 35 (6), 1404–1427.
- Hitt, M.A., Keats, B.W., DeMarie, S.M., 1998. Navigating in the new competitive landscape: building strategic flexibility and competitive advantage in the 21st century. *Acad. Manag. Perspect.* 12 (4), 22–42.
- Howells, J., 2006. Intermediation and the role of intermediaries in innovation. *Res. Pol.* 35 (5), 715–728.
- Inkpen, A.C., Beamish, P.W., 1997. Knowledge, bargaining power, and the instability of international joint ventures. *Acad. Manag. Rev.* 22 (1), 177–202.
- Isenberg, D., 2011. *The Entrepreneurship Ecosystem Strategy as a New Paradigm for Economy Policy: Principles for Cultivating Entrepreneurship*. Babson Entrepreneurship Ecosystem Project, Babson College, Babson Park, MA.
- Johnson, W.H., 2008. Roles, resources and benefits of intermediate organizations supporting triple helix collaborative R&D: the case of Precarn. *Technovation* 28 (8), 495–505.
- Jung, K., Eun, J.H., Lee, S.H., 2017. Exploring competing perspectives on government-driven entrepreneurial ecosystems: lessons from Centres for Creative Economy and Innovation (CEEI) of South Korea. *Eur. Plann. Stud.* 25 (5), 827–847.
- Kanda, W., Kuisma, M., Kivimaa, P., Hjelm, O., 2020. Conceptualising the systemic activities of intermediaries in sustainability transitions. *Environ. Innov. Soc. Transit.* 36.
- Kim, D.Y., 2014. Understanding supplier structural embeddedness: a social network perspective. *J. Oper. Manag.* 32 (5), 219–231.
- Kivimaa, P., Boon, W., Hyysalo, S., Klerkx, L., 2019. Towards a typology of intermediaries in sustainability transitions: a systematic review and a research agenda. *Res. Pol.* 48 (4), 1062–1075.
- Klerkx, L., Leeuwis, C., 2008. Balancing multiple interests: embedding innovation intermediation in the agricultural knowledge infrastructure. *Technovation* 28 (6), 364–378.
- Kornai, J., Rothstein, B., Rose-Ackerman, S., 2004. *Creating Social Trust in Post-Socialist Transition*. Palgrave Macmillan, Basingstoke, UK.
- Kvale, S., 1996. *Interviews: An Introduction to Qualitative Research Interviewing*. Sage.
- Loots, E., Neiva, M., Carvalho, L., Lavanga, M., 2020. The entrepreneurial ecosystem of cultural and creative industries in Porto: a sub-ecosystem approach. *Growth Change* 30 (3). <https://doi.org/10.1111/grow.12434>.
- Lundvall, B.Å., 2007. National innovation systems – analytical concept and development tool. *Ind. Innovat.* 14 (1), 95–119.
- Mack, E., Mayer, H., 2016. The evolutionary dynamics of entrepreneurial ecosystems. *Urban Stud.* 53 (10), 2118–2133.
- Malecki, E.J., 2011. Connecting local entrepreneurial ecosystems to global innovation networks: open innovation, double networks and knowledge integration. *Int. J. Enterpren. Innovat. Manag.* 14 (1), 36–59.
- Mason, C., Brown, R., 2014. Entrepreneurial ecosystems and growth-oriented entrepreneurship. *Final Report to OECD, Paris* 30 (1), 77–102.
- McKenzie, D.J., Paffhausen, A.L., 2017. Small firm death in developing countries. In: Policy Research Working Paper No. 8236. The World Bank, Washington, DC.
- Mead, D.C., Liedholm, C., 1998. The dynamics of micro and small enterprises in developing countries. *World Dev.* 26 (1), 61–74.
- Midgley, G. (Ed.), 2003. *Systems Thinking*. Sage, London, Thousand Oaks, CA.
- Miles, M.B., Huberman, A.M., 1985. *Qualitative Data Analysis*. Sage, Newbury Park, CA.
- Miller, K., McAdam, M., McAdam, R., 2014. The changing university business model: a stakeholder perspective. *R D Manag.* 44 (3), 265–287.
- Moore, J.F., 1993. Predators and prey: a new ecology of competition. *Harv. Bus. Rev.* 71 (3), 75–86.
- Moran, P., 2005. Structural vs. relational embeddedness: social capital and managerial performance. *Strat. Manag. J.* 26 (12), 1129–1151.
- Parag, Y., Janda, K.B., 2014. More than filler: middle actors and socio-technical change in the energy system from the “middle-out”. *Energy Res. Soc. Sci.* 3, 102–112.
- Pfeffer, J., Salancik, G.R., 2003. *The External Control of Organizations: A Resource Dependence Perspective*. Harper & Row, New York.
- Polanyi, K., 1957. *Trade and Market in the Early Empires: Economies in History and Theory*. Free Press, New York.
- Roundy, P.T., Bayer, M.A., 2019. To bridge or buffer? A resource dependence theory of nascent entrepreneurial ecosystems. *J. Enterpren. Emerg. Econ.* 11 (4), 550–575.
- Roundy, P.T., Brockman, B.K., Bradshaw, M., 2017. The resilience of entrepreneurial ecosystems. *J. Bus. Ventur. Insights* 8, 99–104.
- Scholz, R.W., Tietje, O., 2002. *Embedded Case Study Methods: Integrating Quantitative and Qualitative Knowledge*. Sage.
- Shane, S.A., 2003. *A General Theory of Entrepreneurship: The Individual-Opportunity Nexus*. Edward Elgar Publishing.
- Spigel, B., 2017. The relational organization of entrepreneurial ecosystems. *Enterpren. Theor. Pract.* 41 (1), 49–72.
- Stam, E., 2015. Entrepreneurial ecosystems and regional policy: a sympathetic critique. *Eur. Plann. Stud.* 23 (9), 1759–1769.
- Stam, E., van de Ven, A., 2019. Entrepreneurial ecosystem elements. *Small Bus. Econ.* 1–24.
- Stam, E., Welter, F., 2020. *Geographical Contexts of Entrepreneurship: Spaces, Places and Entrepreneurial Agency*, Working Paper, No. 04/20. Institut für Mittelstandsforschung (IfM) Bonn, Bonn.
- Stewart, J., Hyysalo, S., 2008. Intermediaries, users and social learning in technological innovation. *Int. J. Innovat. Manag.* 12 (3), 295–325.
- Theodoraki, C., Messegem, K., 2017. Exploring the entrepreneurial ecosystem in the field of entrepreneurial support: a multi-level approach. *Int. J. Enterpren. Small Bus.* 31 (1), 47–66.
- Theodoraki, C., Messegem, K., Rice, M.P., 2018. A social capital approach to the development of sustainable entrepreneurial ecosystems: an explorative study. *Small Bus. Econ.* 51 (1), 153–170.
- Tsvetkova, A., 2015. Innovation, entrepreneurship, and metropolitan economic performance: empirical test of recent theoretical propositions. *Econ. Dev. Q.* 29 (4), 299–316.
- van Rijnsvoever, F.J., 2020. Meeting, mating, and intermediating: how incubators can overcome weak network problems in entrepreneurial ecosystems. *Res. Pol.* 49 (1), 103884.
- Van Weele, M., van Rijnsvoever, F.J., Eveleens, C.P., Steinz, H., van Stijn, N., Groen, M., 2018. Start-EU-up! Lessons from international incubation practices to address the challenges faced by Western European start-ups. *J. Technol. Tran.* 43 (5), 1161–1189.
- Webb, J.W., Khoury, T.A., Hitt, M.A., 2020. The influence of formal and informal institutional voids on entrepreneurship. *Enterpren. Theor. Pract.* 44 (3), 504–526.
- Welter, F., 2011. Contextualizing entrepreneurship: conceptual challenges and ways forward. *Enterpren. Theor. Pract.* 35 (1), 165–184.
- Welter, F., Smallbone, D., 2011. Institutional perspectives on entrepreneurial behavior in challenging environments. *J. Small Bus. Manag.* 49 (1), 107–125.
- Welter, F., Baker, T., Wirsching, K., 2019. Three waves and counting: the rising tide of contextualization in entrepreneurship research. *Small Bus. Econ.* 52 (2), 319–330.
- Williamson, O.E., 1989. Transaction cost economics (Chapter 3). In: Schmalensee, R., Willig, R. (Eds.), *Handbook of Industrial Organization*, vol. 1. North Holland, Amsterdam, pp. 135–182.
- Wurth, B., Stam, E., Spigel, B., 2021. Toward an entrepreneurial ecosystem research program. *Enterpren. Theor. Pract.* 1042258721998948.
- Yin, R.K., 1994a. *Case Study Research: Design and Methods*, second ed. (Thousand Oaks, CA).

Yin, R.K., 1994b. Discovering the future of the case study method in evaluation research. *Eval. Pract.* 15 (3), 283–290.

Yin, R.K., 2014. *Case Study Research: Design and Methods*, fifth ed. Sage. Thousand Oaks, CA.

Zahra, S.A., Nambisan, S., 2011. Entrepreneurship in global innovation ecosystems. *AMS Rev.* 1 (1), 4.