

# **The Importance of Networks in a Business Incubation Programme in South Africa**

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## **Abstract**

Business incubation is a concept that describes a business development process that is used to grow successful, sustainable entrepreneurial ventures that will contribute to the health and wealth of local, regional and national economies. Incubators provide a platform for businesses to build their foundations. However, the realities of global competition require an understanding on the local level of global markets and the complexities of interactions with multiple stakeholders along global supply chains. There is increasing evidence that the performance of existing enterprises is significantly improved by networking, especially for micro business entrepreneurs, and small and medium sized enterprise (SME) owners. However, with literature indicating the importance of business networks, there is still a gap in the illustration on how to connect and apply business networks to the different stages of a business incubation process. Therefore, the purpose of this paper is a preliminary attempt to deal with the phenomenon of business networks and their application to the different stages of an incubation programme. This conceptual study utilises the theory of business incubation that seeks to explain how business incubators and the process of business incubation increase the likelihood that new ventures will survive the early stages of development. The theory of business incubation has five different mutually exclusive incubation inputs, namely idea formulation, decision to proceed, resource gathering, launching of a new business and business development, as illustrated in Figure 1. Furthermore, the study concludes that given the theoretical analysis presented in this research paper a linkage can be created between the process of incubation and support measures available which then can create a further linkage on where in the business incubation process flow can internal and/or external business networks can be applied.

## **Keywords**

Business Incubation, Networks, Micro, Small and Medium-Sized Enterprises (MSMEs), Small, Medium and Micro Enterprises (SMME), Incubatee

## **1. Introduction**

In developing countries, micro, small and medium-sized enterprises (MSMEs) provide nearly 90% of all employment, on average, 60% of employment and 50% of Gross Domestic Product (GDP) in African countries are generated by small firms. SMEs therefore, represent a key part of the solution to unemployment and poverty problems (Egbetokun,

2023). However, these enterprises exhibit low levels of survival and productivity (Page and Söderbom 2015; La Porta and Shleifer 2014; Endris and Kassegn 2022; Egbetokun, 2023). According to the recent South African Global Entrepreneurship Monitor (2021 -2022), South Africa has the most industrialised economy on the African continent. It is the second-largest economy (GDP) after Nigeria and is a leader in most sectors. However, the economy has consistently underperformed for more than a decade, with real gross domestic product (GDP) per capita declining since 2011. The COVID-19 pandemic has had a devastating effect on economies and businesses worldwide, with a disproportional impact on micro and informal businesses. Considering the full year of 2021, the South African economy expanded by 4,9%, the most in 14 years, recovering from a 6,4% decline in 2020. Constraints regarding entrepreneurship make it challenging to sustain a business. Structurally, the economy remains characterised by excessive concentration of ownership and control in key sectors, as well as by a lack of participation by South Africans (SA –GEM Report 2021 -2022). While the Global Entrepreneurship Monitor (GEM- Report, 2022 -2023) indicated that more than three in five South Africans report that, their household income has fallen in 2022 because of the pandemic, just over a third of South Africans know someone who has recently started a business, while twice this level consider they have the skills and experience to run their own business. More than three in five entrepreneurs see good opportunities to start a business, although more than half of them are deterred by fear of failure.

Therefore, in many countries, one of the programmes used by the state, academia and the private sector to improve the survival rate of businesses or enterprises is the business incubation programme. The business incubation programme aims to offset resource deficits at start-up phases of firms to ensure business stability, long-term survival and sustainable growth (Iacono and Nagano, 2017). The focus of business incubators is on helping to raise early stage technology-based ventures to a level where they can seize business opportunities and compete in the market without further support (Ayaste, Kwahar and Iyortsuun, 2017).

However, in measuring business incubator performance, it is crucial to consider factors such as service delivery methods, availability of mentors and board support, as well as participation in training and mentoring programmes (Sohail, Belitski and Christiansen, 2023). It should be noted that business incubation programmes are increasingly becoming popular to new business development and growth. As mentioned, business incubation programmes provide resources and services to entrepreneurs to help them develop their ideas into successful businesses. Nonetheless, the success of business incubation programmes is sometimes different, and the factors contributing to such programmes' success still need to be fully understood (Grimaldi, 2020; Hausberg and Korreck, 2021; Phillips, 2022; and Santoso, Sunarjo and Fadli, 2023). According to Van Rijnsvoever (2020), the incubator firms may utilise the provided relationships and initiate additional ties, and networks generally work for incubatees. A number of studies have presented how business incubation can provide start-ups with network resources. According to Pettersen, Høvig and Tobiassen (2016), incubation can provide generic network resources but to a lesser extent offers idiosyncratic (non-generic) network resources. It can therefore be argued that incubator-provided networks can complement, but not substitute, tenants' external private networks, which appear to be crucial for access to idiosyncratic resources. Das (2021), indicated that incubators network as well other resource support can help incubatees to internationalise.

After the incubated entrepreneurs reach a certain level of growth they might leave the incubator, but by that time they also become part of the valuable network of the incubator and other incubatees inside the incubator can gain from the relationship that the incubator has with the entrepreneur. Furthermore, according to Wu, Wang and Tsai (2020); Bruneel, 2012; Stayton and Mangematin, 2019 business incubators help new ventures not only acquire technical, professional and financial support from outside the incubator at lower costs but also overcome the liability of newness by favouring a networked environment. Particularly, ready-made networks provided by business incubators not only help new ventures enter the market rapidly but also accelerate their development.

However, with literature indicating the importance of business networks, there is still a gap in the illustration on how to connect and apply the networks provided to the different stages of business incubation. Therefore, the problem to be investigated is that networks are being applied in an incubation programme, but they are not optimally used because they are not matched with the different phases of the incubation. The aim of this conceptual study is to investigate at which stages of a business incubation process can different network support measures be applied to provide viable business prospects.

The literature in this conceptual study is discussed by introducing the process of business incubation followed by an analytical review of the different types of networks available. In the discussion and conclusion section, a linkage is presented on how the different networks can be uniquely applied at the various phases of business incubation.

## **2. Methodology**

This is a conceptual literature study. A desktop review was conducted in the collection of data. The following keywords were utilised: business incubation, incubatee, networks, Micro, Small and Medium-Sized Enterprises (MSMEs), Small, Medium and Micro Enterprises (SMME).

## **3. Conceptualisation of the Business Incubation Movement in South Africa**

In South Africa, the technology stations (business incubation) programme was developed by the Department of Science and Technology to strengthen and accelerate the interaction between academia and start-up businesses, these were called technology stations. The technology stations' activities include, inter alia, research, development and application of new technologies, technology transfer, troubleshooting, quality advisory service, product development, simulated production units, testing services and secondment of staff and students (Ndabeni, 2008, cited in Lose and Tengeh, 2016). Technology incubators focus on the physical facilities and incubation. Their key objectives are economic growth, sustainable employment, technological innovation and technology transfer, and making South African SMMEs internationally competitive. The most advanced business incubator is the Innovation Hub, which focuses on high-technology entrepreneurs and start-up companies at the leading edge of the new economy (Nyemba, Mbohwa and Carter, 2021). Another important element of the incubation movement in South Africa is the Small Enterprise Development Agency (SEDA) Technology Programme; it has over 29 incubators supporting entrepreneurs in sectors as diverse as horticulture, construction, chemicals, ICT, biotechnology, metal fabrication, furniture manufacturing and platinum beneficiation. While there are a few private sector-led incubators, most are supported by the national government and to a lesser extent by provincial and local governments (Ndabeni 2008, cited in Lose and Tengeh 2016). As such, these agencies provide financial assistance, advanced technological facilities to business incubators, and encourage private business partnerships with government to maintain the support of Business Incubators (Cullen, 2014).

Business incubators are considered promising policy mechanisms that support entrepreneurial growth by nurturing new firms through their developmental lifecycle (Ahmed, Cai Li, Khan and Qalati, 2020). Business incubators are viewed as preferred tools by policymakers for promoting the development of technology-based and growth-oriented firms. Incubation programmes are generally established through public-private collaborations among universities, industry, and all levels of government, and they facilitate technology transfer and diffusion of products, by incubating new and novel ideas into ventures thereby developing regional economies through new firms (EU 2010; Mian 2014a; 2016; Galbraith 2019; Guerrero, 2021). Of the world total number of about 7000 incubators, depending on how these are defined, roughly one-third each are in the U.S.A., the other industrial countries, Australia Japan, Canada and the industrialising and restructuring countries. While there is some overlapping in the objectives and functions of business incubation centres, business support centres and other business development services, each has its distinguishing characteristics and its special role in different circumstances (OECD, 2019). The incubation process allocates a specified period of time to business building and development of innovations (Iacono and Ngano, 2017). During the incubation period, generally three years long, the incubated firms receive technical and managerial support in addition to logistics, which facilitates their access to funding mechanisms and promotes partnerships with innovation agents (Xiao, Wang and Xu, 2021).

Research by Bakkali, Messeghem and Summut (2021), maintains that the incubation process is important in that incubated firms can acquire competencies that will help them adapt to the market and prosper after graduating from an incubator. According to Hausberg and Korreck (2020), the extent to which these support mechanisms work together is of fundamental importance to the survival and growth of incubated firms after graduation. Eveleens, Van Rijnsoever and Niesten (2017), further emphasise that the literature on how network-based incubation influences the performance of technology-based start-ups has recently grown considerably and provided valuable insights on how incubatees can grow their enterprises with the through networks. At the same time, this literature has become quite fragmented, inconsistently conceptualised, and theoretically underdeveloped. Furthermore, recent studies mentioned earlier have shown that assessing the performance of business incubators remains an unsolved challenge, especially in diverse geographical areas and within different business sectors. The availability of appropriate data and evaluation methods essential to monitor incubator performance, provision of market linkages and impact on local economies (Aldianto, Anggadwita, Permatasari, Mirzanti and Williamson, 2021). According to Van Rijnsoever (2020), the incubator firms may utilise the provided relationships and initiate additional ties, and networks generally work for incubatees however, with literature indicating the importance of business networks, there is still a gap in identifying which types of networks are beneficial during an incubation process and at which stage of business incubation can they be

successfully applied? An analytical and theoretical approach on the networking support systems provided by business incubators is provided in the section below.

#### **4. The Theoretical Approach of Support Offered by Business Incubators**

Throughout the developing world, business incubators are increasingly considered innovative instruments for developing and promoting competitive small firms (Meyer and Kot, 2016). True competitiveness requires businesses that can establish strong positions in niche markets through innovative products and services. Such businesses in their start-up stage (when they are most vulnerable) are suitable candidates for incubation systems (Wolniak and Grebski, 2014; Pattanasak, Anantana, Paphawasit and Wudhikarn, 2022). Therefore, the theory of Business Incubation seeks to explain how business incubators and the process of business incubation increase the likelihood that new ventures will survive the early stages of development (Hackett and Dilts, 2004). The theory conceptualises the incubator as an entrepreneurial firm that sources and macro-manages the innovation process within emerging organisations, infusing these organisations with resources at various developmental stages while containing the cost of their potential failure.

According to Hackett and Dilts (2004) as well as Ayatse and Kwahar (2017), the incubator is the unit of analysis while incubation outcomes are measured in terms of incubatee growth and financial performance at the time of incubator exit provide indicators of success. Therefore, according to Hackett and Dilts (2004) as well as Kemp (2013), the theory of business incubation has five different mutually exclusive incubation inputs, namely idea formulation, decision to proceed, resource gathering, launching a new firm and firm development, as illustrated in Figure 1.

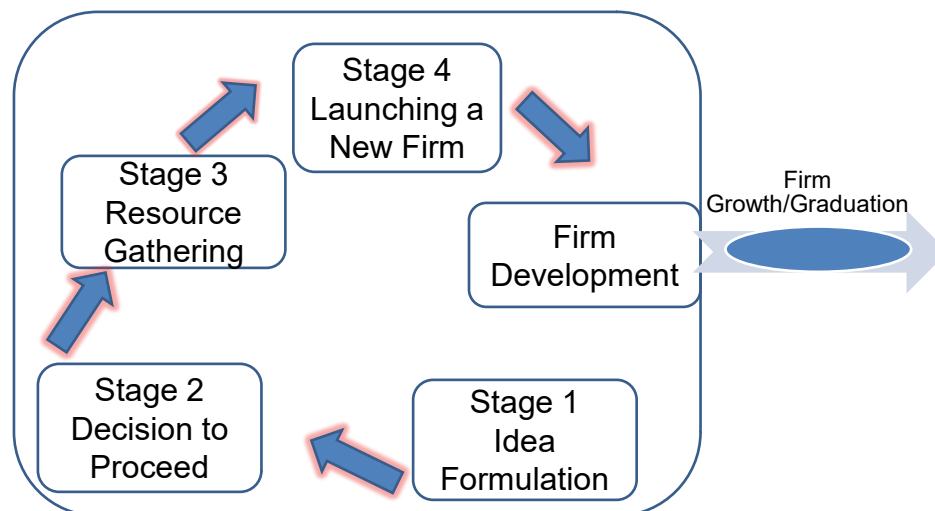


Figure 1: The Incubation Process (Source: South African Business and Technology Incubation Association (SABTIA), 2018)

Figure 1 portrays that once the idea is formed, entrepreneurs decide to proceed, and technology incubators start to play their role by helping entrepreneurs to assemble resources. As new firms grow, the incubator can add a new support not just shared business or research facilities but also training, networking, and consultation in all areas of expertise (Lalkaka, 2006 cited in Vanderstraeten and Matthyssen, 2014). The core of why business incubators exist, relates to reducing business failure inherent in starting a new business. These organisations package services, which are intended for effectively addressing the challenges faced by SMEs. These challenges may include lack of access to pertinent information relating to how an SME can access start-up capital, as well as how to effectively run a formal business (Buys and Mbewana, 2007; Ndabeni, 2008; Bronkhorst, 2020). It is therefore important for an incubator to provide networks that will enhance the growth and development of the incubatee and reduce any potential of business failure,

therefore the correlation between business incubation and the networks they can provide is discussed in the next section.

## **5. Business Incubation Support Networks Provided**

The resource-based approach (Barney, 1991; Grant, 1991 cited in Lubis, 2022) underpins the potential of business resources and capabilities as a source of competitive advantage and value creation. However, given the highly competitive environment of modern-day economies, obtaining external resources on the open market is proving increasingly challenging for small and medium enterprises compared to large-scale or multi-located firms. This is especially worrying in the case of small-scale local entrepreneurs, understood to be people who are starting up and running their own business in a local area (Hernández-Carrión, Camarero-Izquierdo and Gutiérrez-Cillán, 2018; Stam, 2014; Zhao, 2010). In such a context of competitive disadvantage, relationship networks may prove a particularly valuable asset for these entrepreneurs, since they provide the latter with access to strategic resources and afford entrepreneurs the opportunity to enhance their performance.

According to research by Van Weele, Van Rijnsoever, Groen and Moors (2019), incubators can help to alleviate networking problems for incubatees in various ways. They can relieve start-ups from other tasks, thus giving them time to search for network partners (Ratinho, Amezcua, Honig and Zeng, 2020), or they can introduce potential network partners to each other. Nevertheless, the theoretical mechanisms for how incubators drive network formation are underdeveloped (Van Rijnsoever, 2020; Kakabadse, Karatas- Ozkan, Theodorakopoulos, McGowan, 2020; Villares, Miguéns-Refojo and Ferreiro-Seoane, 2020). Wu, Wang and Wu (2020) noted that, business incubators (BIs) have gradually evolved to focus increasingly on the development of networks and network functions. However, existing literature indicates that much ambiguity remains regarding the importance and role of cooperation within the incubator networks. In particular, only a few studies divide incubator networks into internal and external networks to explore how these networks influence the enterprise growth performance [EGP] (Wu, Wang and Wu, 2021). However, it is difficult to empirically separate effects of different support mechanisms, since they are commonly employed simultaneously (Maus and Sammut, 2021) and that more detail is needed to disentangle how the varying availability of resources and incubatees' ability to absorb them guide incubator strategy beyond mere business model archetypes (Tang, Walsh, Li and Baskaran, 2019).

The entrepreneurial ecosystem's literature recognises that incubators, through their network services, can also function as system builders (Vardhan and Mahato, 2022; Sanyal and Hisam, 2020). By orchestrating the building of a network that would have remained underdeveloped without their intervention, they partly fulfil the role that intermediaries play in innovation systems (Schepis, Purchase and Butler, 2021). Incubators have several support mechanisms at their disposal to do so. Bruneel (2012) has classified these mechanisms as generations of incubators that focus on business learning, creating economies of scale, and networking. Incubatees can then utilise two kinds of networks, namely internal and external networks. According to Ahmed, Li, Khan and Qalati, (2020), these are equally important as they both assist the incubatee to gain access to business markets. However, at which phases of business incubation should these networks be introduced?

Internal networks are particularly useful to social capital building, as they enable multiple companies to share a variety of resources. When incubatees are in a highly dynamic environment, internal networks more positively affect exploitative learning, while external networks inhibit exploratory learning (Wu, Wang and Wu, 2020). Moreover, Olawale and Garwe (2010) as well as Schutte and Barbeau (2022) stress that the most important service offered by the incubator is the opportunity for networking among tenant companies, i.e., internal networking. This aligns with other findings that have shown that tenants tend to use incubators to facilitate relationships with other incubator residents (Adlesic and Slavec, 2012). François, Lafaye and Belarouc (2021) as well as Adlesic and Slavec, (2012) also pointed out that, as incubator tenants are all physically located under the same roof, it makes collaboration between them more likely.

External networks, however, are also crucial to incubatees, as they link tenants with potential partners, customers, local businesses, etc. According to Totterman and Sten (2009), an incubator and its external networks are useful to social capital building, because they link client tenants with service providers and with other local businesses for partnership purposes. More particularly, Adlesic and Slavec (2012) describe an incubator's external networks as consisting of individuals drawn from the ranks of professional business service providers, as well as experienced businesspeople and educators who are willing to provide advice and assistance to entrepreneurial enterprises.

According to Hughes (2007), an incubator offers opportunities for value creation, but the extent to which that value is realised depends entirely on the extent to which the incubating firm exploits those opportunities.

However, contrary to the benefits of these external ties, Lechner, Lorenzoni and Guercini (2020), argues empirically that using external resources by cooperating with other firms will only increase corporate success if the management team of the firm under consideration has extensive know-how in the area of cooperation. Cohen and Levinthal (1990) cited in Ahmed, Guozhu, Mubarik, Khan and Khan (2020), introduced the concept of absorptive capacity which depicts the same idea, i.e., founders will not be able to benefit from corporations with, and information from, network partners if they do not possess the necessary knowledge and the capacity to absorb the information in their own organisation. They also indicated that the possession of prior knowledge is an important precursor for absorptive capacity. Therefore, entrepreneurial experience, social competencies, the level of university education and other factors determine if and how much benefit an entrepreneur can derive from existing network ties. Thus, neither the frequency nor the regularity of exchanges necessarily indicates the potency and reliability of the ties (Wang and Wu, 2021).

Furthermore, a second restriction on the general recommendation is the fact that entrepreneurs, in this case, incubatees may differ largely in terms of available own resources, such as financial capital, know-how, patents, etc. Bayer (1991), in Wells, Friedland and Hughes (2021:34) criticises the network success hypothesis accordingly and puts forward a completely different 'compensation hypothesis.' It states that only entrepreneurs who are ill equipped with resources build large networks and intensely seek support from network partners. If the amount of the entrepreneur's own resources at the foundation date has a direct and positive influence on the chances for survival, then entrepreneurial networking activities serve additional rewards in building a competitive business or enterprise. In a similar line of reasoning, Chicha (1980) (cited in Friedland, et al., 2008) shows empirically that SMEs increasingly utilise network contacts, the more economic problems they encounter. The size, strategy and industry of the SME can have a moderating effect on the correlation between entrepreneurs' networks (or networking activities) and their companies' success. SMEs greatly vary in size, even if they are in the same stage of the development process, but most empirical studies do not control for the effect that size may have. The size of an entrepreneur's communication network correlates positively with the growth rates of the respective start-up, but this effect is much stronger for large firms than for small firms (Brunetto and Farr-Wharton, 2015). However, it is critical to understand whether these network support measures can be effectively applied at the different stages of incubation, and could this process yield positive outcomes?

## **6. Discussion and Alignment of Support Networks to the Different Stages of a Business Incubation Process**

Hackett and Dilts, 2004 cited in Vanderstraeten and Matthysen (2014) indicate that as per the theory of business incubation, the business incubation process is divided into five stages, which are idea formulation, decision to proceed, resource gathering, launching of a new firm and firm development. In the study on Meeting, Mating and Intermediating: How incubators can overcome weak network problems in entrepreneurial ecosystems, Van Rijnsoever (2020) categorised the business incubation network support mechanisms to be summed up to (a) Community Building, (b) field building, (c) peer coupling, (d) infrastructure support, (e) venture capital networking, (f) deal making and (g) business learning. This categorisation of processes creates a linkage in filling a gap on which network support measures can be applied at different phases of business incubation to yield variable results for the incubatee. Aldrich, Birkhead and Ruef (2023), in the Evolutionary Theory highlight that all nascent entrepreneurs draw upon their existing social networks and construct new ones in the process of obtaining knowledge and resources for their organisation. In this case, incubators can possibly fill in for an entrepreneur's impoverished network. On the other hand, Kwon, Rondi, Levin, Massis, and Brass (2020) and Gamper (2022) following the logic of Granovetter (1974) on the theory of Weak or Strong Ties, emphasise that a network made up of homogeneous ties will be of limited value to a nascent entrepreneur. As ties to the same kinds of people accumulate, the marginal value of each succeeding drops.

Therefore, it can be argued that structured network ties introduced at different phases of incubation improve the incubatee's business chances of survival, the alignment is hereby proposed as follows:

- (a) The first stage is the formulation of a business idea, which is generally influenced by the human capital: the entrepreneur's experience, education, training and skills development. Individual experience may, for example, condition the entrepreneur to think that a particular process, product or service could be done in a superior way. In an incubation environment, this stage is also influenced by creativity, be it in the form of

individual or group creativity (Vanderstraeten, van Witteloostuijn, Matthyssen and Andreass, 2016). An interesting distinction to make is the stage of entrepreneurs related to the idea formulation stage. Incubatees may have less inhibitions and can be more willing to test different ideas using different perspectives, being unbiased. Here, idea formulation will be strongly influenced by internal networks. Thus, networking is an important conditioning experience.

Creative thinking can be enhanced or constrained by networking systems, and this will affect the way in which opportunities are viewed, not just in our formative years, but later in life as well (Deakins and Freel, 2003; Möller, Nenonen and Storbacka, 2020). Ideas are enriched by discussion with others, peer evaluation, research and feedback, whereby they are refined and/or modified, if necessary. Therefore, community building according to Herawati, Yusuf, Cakranegara, Sampe and Haryono (2021), refers to how to create a community of people who share similar interests through internet networks. This is one method for creating and expanding social networks with a wider reach. This is done to strengthen ties between groups that share common goals and interests. Sharing common information through social media groups in each community can be said to require less effort to reach a larger audience. This is because members of the community collaborate to disseminate information obtained through the WhatsApp group to other groups they have, allowing the information.

According to Van Rijnsoever (2020), Community-building, occurs when the incubator deliberately connects incubated start-ups to each other, thus serving as an extra network broker. In doing so, the mechanism primarily increases the meeting chances for incubated start-ups.

- (b) The second stage is the decision to proceed stage. In order to materialise a business, the idea has to be converted into a business opportunity, which is the second phase of incubation. Entrepreneurs recognise that opportunities are created by changes in the political, economic, social or technological environment. This stage can be influenced by role models, e.g., in industry, whereby the importance of promoting role models in the media or by delivering talks at universities is seen. Whether the entrepreneur who has the business idea will pursue it or not, also depends on cultural attitudes towards risk and failure in business (Van der Zwan, Thurik, Verheul and Hessels, 2016). Amezcua et al. (2013) state that the way sponsors increase new organisations alignment and engagement with critical stakeholders is by connecting those organisations to other similar and new organisations within a field, to improve the opportunity for collaboration within the incubation space, internal knowledge sharing, and ultimately legitimacy for these emerging organisational communities. At this stage, the incubator also identifies infrastructure support needs of the incubatee. Activities associated with field building include active introductions, network meetings, or social events with start-ups outside the ecosystem.
- (c) On the third phase of incubation which the resource gathering phase, most of the entrepreneurs had acquired diverse network resources through education or work experience, which proved valuable for their ventures in their critical start-up phase (i.e., identity-based networks, cf. Hite and Hesterly, 2001). At this stage, external network resources are most critical for start-ups in all phases of the enterprise development through their provision of research and development (R&D) knowledge, access to monetary funding, and market access. Internal inter-tenant networking in the form of sharing the entrepreneurial experience with other incubator firms was also important, but it was more strongly related to the similar phases that start-ups undergo as they evolve. It also served a social purpose, such as satisfying the need to belong to a wider community. These internal network resources are described as generic, because they satisfy the more common needs of the firms (Pettersen, Aarstad, Høvig and Tobiassen, 2015). However, this stage can be linked to peer-coupling because it involves a great deal of learning by doing, such as interacting with other start-ups. It is also in practice conflated with other support mechanisms, such as community-building, field-building, or business learning.

According to Friederici (2017), an incubator manager introduces incubatees to external parties, but relationships among co-located peers can also yield business opportunities without any direct intervention.

- (d) In the launching of a firm which is the fourth phase, business incubator networks are included in the economic arena because of the extreme needs of more than ever before, to access information, resources, knowledge, skills, financial resources, and an endless list of other inputs that accelerate value creation and competitive

advantage, they provide all important conditions for tenants to achieve valuable strategic partnerships, recruit talented personnel, and access external experts. (Muniz, Morales-Gutiérrez and Ariza-Montes, 2013).

This stage can link to the Venture Capital network approach stipulated by Van Rijnsoever (2020), which stipulates that Venture Capital (VC) networking mean that incubators serve as network brokers between start-ups and Venture Capitalists, which will increase the meeting chances between the two groups. Metrick and Yasuda (2021), state that a venture capital is a financial intermediary, meaning that it takes the financiers capital and invests it directly in portfolio companies.

Typically, a venture capital fund is organised as a limited portfolio. VC-networking is thus a specific variation of general networking practices among incubators, which refers to those activities that help start-ups connect to actors who can provide them with valuable resources (Davidsson and Honig, 2003; Eveleens et al., 2017). VC-networking can be done through encouragement, through organising events at which both parties are present, through introductions, or through referrals made by coaches, mentors, or the incubator management (Eveleens et al., 2017; Patton et al., 2009; Rice, 2002).

With the support of the incubator, we can be sure of the continued operation of the tenant. This stage of business incubation is characterised by the incubatee's ability to maintain external networks. According to Sullivan, Marvel and Wolfe (2021), some evidence suggests that entrepreneurs who utilise external support are more likely to be associated with ventures that grow (Burke 2010) and because entrepreneurs are subject to bounded rationality (Simon, 1991), relying on network partners may help improve decision making (Chwolk and Raith, 2012).

External networks are useful to social capital building because they link client tenants with service providers and with other local businesses for partnership purposes (Littunen, 2010). More particularly, external networks consist of individuals drawn from the ranks of professional business service providers, as well as experienced businesspeople and educators who are willing to provide advice and assistance to entrepreneurial enterprises. By having external networks, incubatees are exposed to market challenges and opportunities in a better manner than cold calling and at low cost to them (marketing).

- (e) The final and fifth stage of business incubation is the launching of a firm, here, the incubator as an entrepreneurship-supporting ecosystem increases the survival rate and growth potential of start-ups by compensating for gaps in knowledge, competencies, and resources (Grimaldi and Grandi, 2005; Kakabadse, 2020). According to Nxopo (2016), this stage of business incubation is measured by how the client company's growth and financial performance at the time of incubator exit.

Operationally, there are exclusive outcomes at the completion of the incubation process, namely: the company is surviving and growing profitably and the company is surviving and growing and is on a path toward profitability. This can be linked to Van Rijnsoever's (2020) deal-making support mechanism. The term refers to incubator activities that are meant to shorten the networking period, regardless of its outcome. This effectively increases the number of meetings with VCs during the lifespan of a start-up and thus the meeting chances between start-ups and VCs.

The rationale is that start-ups can miss deals with other VCs during the exclusive networking period, so it is in the start-up's best interest to gain certainty about the outcome of the negotiation process as soon as possible. Incubators can contribute to shortening the networking period by providing start-ups with knowledge about financial and legal issues, as well as by teaching skills that will allow start-ups to build trust (Malhotra, 2013). With more complex deals, incubators can further shorten the networking period by facilitating the negotiation process or by contributing in an advisory capacity.

At this stage particularly during incubation, the due diligence modulator regulates the availability of external resources and networks based on whether the entrepreneurial competence is sufficiently developed and whether the potential entrepreneurial reward is worthwhile (Lanham-New, 2019). Furthermore, this stage can be linked to a complete business learning cycle for an incubatee. Knowledge is a firm's essential resource in organisational learning. Firms generate an abundance of knowledge, which enables entrepreneurs to identify and take advantage of opportunities. The available knowledge can be used repeatedly to develop a production process and drive innovation. Therefore, utilising knowledge stock appropriately will lead a



company's organisational learning to achieve best performance and win market competition (Aldianto, Anggadwita, Permatasari, Mirzanti and Williamson, 2021).

The network support systems presented to incubatees during an incubation process can be proposed and analysed using the Figure 2: Business Incubation and Network Support Linkage Approach, where the theory of business incubation is used to provide insight into aspects of creating an understanding of the incubation process. Therefore, the incubation theory applied in this study follows the theoretical lenses of the five identified incubation inputs (idea formulation, decision to proceed, resource gathering, launching of a new firm and firm development).

The incubator is an entrepreneurial firm that performs a bridging function by sourcing and macro managing the innovation process within emerging, promising, intermediate potential organisations, infusing them with resources at various developmental stage-gates while containing the cost of their potential failure (Rice and Matthews, 1995; Kibuch, 2016). In this view, the incubator functions as a place where resources can be rationally invested in stages. The researcher's rationale on the linkage between business incubation processes and networks provided further links to the Evolutionary Theory by Aldrich, Birkhead and Ruef (2023). The theory seeks to highlight that all nascent entrepreneurs draw upon their existing social networks and construct new ones in the process of obtaining knowledge and resources for their organisation and can further be argued that structured network ties introduced at different phases of incubation improve the incubatee's business chances of survival as highlighted in Kwon, Rondi, Levin, Massis, and Brass (2020) and Gamper (2022) following the logic of Granovetter (1974) on the theory of Weak or Strong Ties.

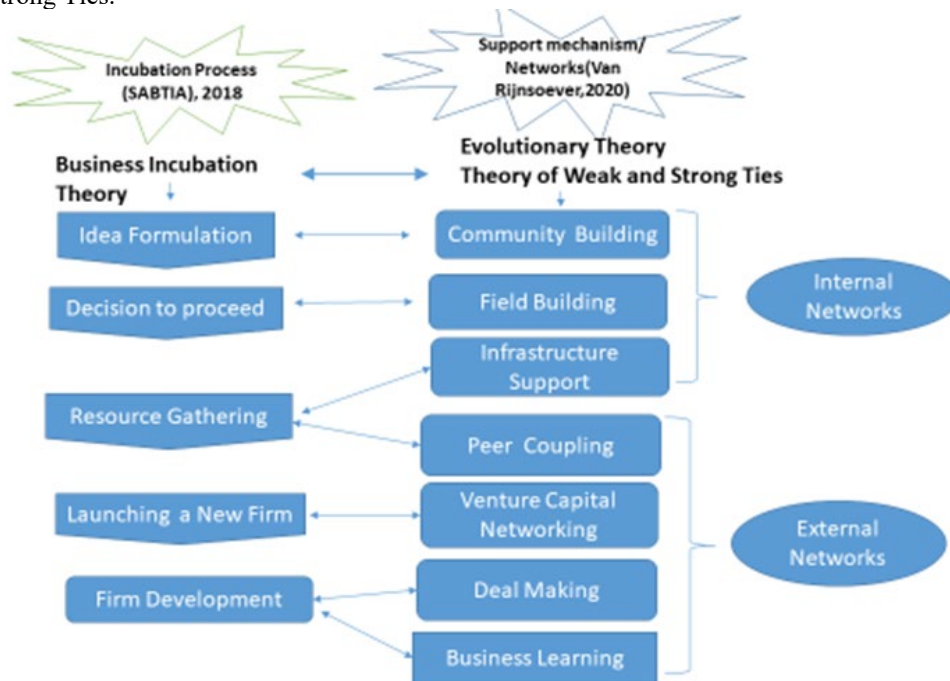


Figure 2: Business Incubation and Network Support Linkage Approach - Own Compilation

In Figure 2, the incubation process can be strategically linked to support systems proposed by Van Rijnsoever (2020); this proposes creates a linkage with the type of network that is most appropriate for each stage of a business incubation process. Therefore, the introduction and implementation of networks can be strategically applied to insure an alignment in the different stages of incubation. As strongly referenced in the theory of business incubation, the focus of business incubators is on helping to raise early-stage technology-based ventures up to a level where they can seize business opportunities and compete in the market without further support (Ayaste, Kwahar and Iyortsuun, 2017).

As pointed out by Mutambi, Byaruhanga, Trojer and Buhwezi (2010), an incubator adds value by bringing together a comprehensive array of skills and by selecting individuals who can most successfully tailor their services to the needs of small growing firms. In leading to a theoretical conclusion, the size, strategy and industry of the SME can have a

moderating effect on the correlation between entrepreneurs' networks (or networking activities) and their companies' success particularly in a case of incubation support in developing country like South Africa, where there is always a need for new business ideas and linkages. SMEs greatly vary in size, even if they are in the same stage of the development process, but most empirical studies do not control for the effect that size may have. The size of an entrepreneur's communication network correlates positively with the growth rates of the respective start-up, but this effect is much stronger for large firms than for small firms (Brunetto and Farr-Wharton, 2007; Pi, 2021).

## **7. Proposed Improvements**

The Global Entrepreneurship Monitor - South Africa (2021 -2022) emphasise the need for entrepreneurship that embodies the Schumpeterian idea of creative destruction: where inferior solutions are replaced (partly or completely) with new products, services, and business models. Therefore, for further research studies, a critical list of success factors in incubation, especially for South Africa, needs to be theoretically established. A suitable model needs to be developed and a linkage between incubators and other initiatives needs to be established with a particular focus on market linkages and suitable, viable and sustainable business networks. The role of the private sector in business incubation support should also be encouraged.

## **8. Conclusion**

Therefore, the study concludes that given the theoretical analysis presented in this research paper a linkage has been created between the process of incubation and support measures available which then created a further linkage on where in the business incubation process flow can internal and/or external business networks can be applied. In the incubation process flow, newly incubated firms may acquire some role models in older incubated firms. They may even have role models in successful firms or individual entrepreneurs that have left incubators. Therefore, internal ties are of great benefit in first two phases of business incubation. These new firms wish to emulate characteristics of role model firms and they want to resemble them. Therefore, young firms will eventually try to establish social networks with their role models to acquire knowledge, contacts, advice, and support within an incubation environment. Internal networks are, consequently, highly beneficial because they assist with the planning process in the early stages of business development (Eveleens, Van Rijnsoever and Niesten, 2016 and Peng, Li1, and Liuhttps, 2022).

Internal networks serve as organised and structured networks to ensure access to resources, knowledge and mentorship assistance with market access and projection. Thus, internal networks seem essential to overcome the liabilities and difficulties associated with firm newness, since incubatees can assist one another, and sometimes purchase from one another (Van Weele, 2016; Hackett and Dilts, 2009). Moreover, incubators provide opportunities for knowledge transfer and experience sharing between incubatees (Leitão, Pereira and Gonçalves, 2022; Bergek and Norrman, 2008). Similarly, Allen and Rahman (1985) cited in Saavedra, Kotey and Sandhu (2020) propose that incubators assist firms indirectly by placing the entrepreneurial actor in an environment of peers, providing social inputs, resources (networks), and psychological support across and between incubatees.

The last three phases of business incubation are characterised by the need to enter the market whereby external and social networks are beneficial. External networks are useful to social capital building because they link client tenants with service providers and with other local businesses for partnership purposes (Mmasi, 2020 and Littunen, 2010). More particularly, external networks consist of individuals drawn from the ranks of professional business service providers, as well as experienced businesspeople and educators who are willing to provide advice and assistance to entrepreneurial enterprises. By having external networks, incubatees are exposed to market challenges and opportunities in a better manner than cold calling and at low cost to them (Zhang, Liu and Fan, 2022; Wai On, 2020).

It is therefore important to understand the motives for forming business networks that will lead to business success for SMEs, particularly in a business incubation process. An assessment of the circumstances of the motives for forming entrepreneurial networks indicated that they are influenced by several factors such as necessity, asymmetry, reciprocity, efficiency, stability and legitimacy. Networks are related to laws and regulations, competition, compatibility with other businesses, relationship costs and benefits, and business risk. These motives are vital to be focused on as the starting point to promote entrepreneurial networking amongst incubated SMEs, and in ensuring their success and growth.

## References

- Aarstad, J., Haugland, S.A. and Greve., A., Performance Spillover Effects in Entrepreneurial Networks: Assessing Dyadic Theory of Social Capital. *Entrepreneurship Theory and Practice*, 10 (1111), pp. 1540- 6520, 2010.
- Adlesic, R.V., Slavec, A., Social Capital and Business Incubators Performance: Testing the Structural Model. *Journal of Economic and Business Review*, 14(3), pp.201-222, 2012.
- Ahmed, S.S., Guozhu, J., Mubarik, S., Khan, M. and Khan, E., Intellectual capital and business performance: the role of dimensions of absorptive capacity. *Journal of Intellectual Capital*, 21(1), pp.23-39, 2020.
- Aldianto, L., Anggadwita, G., Permatasari, A., Mirzanti, I.R. and Williamson, I.O., Toward a business resilience framework for startups. *Sustainability*, 13(6), p.3132, 2021.
- Aldrich, H. E., Birkhead, C., & Ruef, M, Evolutionary perspectives on entrepreneurship. *The handbook of sociology of innovation and entrepreneurship*. De Gruyter, 2023. Available at: <https://onlinelibrary.wiley.com/doi/abs/10.1002/epa2.1189> [Accessed: 2 February 2024].
- Bakkali, C., Messeghem, K., Sammut, S. and Swalhi, A., The selection strategy or the incubation process: what matters most?. *Handbook of Research on Business and Technology Incubation and Acceleration: A Global Perspective*, p.414, 2021.
- Bronkhorst, J., *The impact of disruptive innovation on the demand for coworking space* (Master's thesis, Faculty of Engineering and the Built Environment). University of Cape Town, South Africa, 2020. Available at: <https://open.uct.ac.za/items/d00c36c6-207b-4903-afab-458f20c8a3d5> [Accessed: 16 November 2023].
- Brunetto, Y., Furr- Wharton, R., Moderating of Trust in SME Owner/Managers' Decision Making. *Journal of Small Business Management*, 45(3), pp.362-387, 2007.
- Cullen, M., Calitz, A., Channndler, L., Business Incubation in the Eastern Cape: A Case Study. *International Journal for Innovation Education and Research*, 2(5), pp.76-89, 2014.
- Das, A., *Tenant entrepreneurs Incubatorsnetwork and Internationalization* (Master's thesis, Nord universitet), 2021. Available at: <https://nordopen.nord.no/nord-xmlui/bitstream/handle/11250/2780737/Das> [Accessed: 29 October 2023].
- Endris, E. and Kassegn, A., The role of micro, small and medium enterprises (MSMEs) to the sustainable development of sub-Saharan Africa and its challenges: a systematic review of evidence from Ethiopia. *Journal of Innovation and Entrepreneurship*, 11(1), p.20, 2022.
- François, V., Lafaye, C. and Belarouci, M., The role of social capital in the growth of innovative nascent firms: the moderating effect of incubators. *International Journal of Entrepreneurship and Innovation Management*, 25(4-5), pp.326-345, 2021.
- Friederici, N., How Nascent Technology Entrepreneurs Organize: The Community Assembly Process. *DRUID17, New York, USA, June*, pp.12-14, 2017.
- Friedland, C., Networked Micro Enterprises. *Journal of Small Business Management*, 45(3), pp. 276-293, 2008.
- Galbraith, B., McAdam, R. and Cross, S.E., The evolution of the incubator: Past, present, and future. *IEEE Transactions on Engineering Management*, 68(1), pp.265-271, 2019.
- Gamper, M., Network Analysis and Health Inequalities: A Methodological Introduction. *Social Networks and Health Inequalities*, p.87, 2022.
- Guerrero, M., The role of incubators and accelerators in the Latin American entrepreneurship and innovation ecosystems. *Handbook of Research on Business and Technology Incubation and Acceleration, A Global Perspective*, pp.335-350, 2021.
- Hackett, S. M., and Dilts, D.M., Inside the black box of business incubation: Study B-Scale assessment, model refinement, and incubation outcomes. *The Journal of Technology Transfer*, 33(5), 439-471, 2008.
- Hackett, S.M., A Systematic Review of Business Incubation Research. *Journal of Technology Transfer*, 29(1), pp.55-56, 2009.
- Hausberg, J.P. and Korreck, S., *Business incubators and accelerators: a co-citation analysis-based, systematic literature review* (pp. 39-63). Edward Elgar Publishing, 2021.
- Hennink, M., Hutter, I., Bailey, A., *Qualitative Research Methods*. California: SAGE Publications, 2011.
- Herawati, A.F., Yusuf, M., Cakranegara, P.A., Sampe, F. and Haryono, A., Social Media Marketing In The Promotion Of Incubator Business Programs. *Jurnal Darma Agung*, 30(2), pp.623-633, 2024.
- Hernández-Carrión, C., Camarero-Izquierdo, C. and Gutiérrez-Cillán, J., The internal mechanisms of entrepreneurs' social capital: A multi-network analysis. *BRQ Business Research Quarterly*, 23(1), p.2347, 2020.
- Hill, S., Ionescu-Somers, A., Coduras Martínez, A., Guerrero, M., Menipaz, E., Boutaleb, F., Zbierowski, P., Schøtt, T., Sahasranamam, S. and Shay, J., Global Entrepreneurship Monitor 2022/2023 Global Report: Adapting to a" New Normal", 2023. Available at: <https://strathprints.strath.ac.uk/84402/> [Accessed: 01 February 2024].

- Huang, H., Lai, M., Lo, K., Do Founders' Own Resource Matter? The Influence of Business Networks on Start-Up Innovation and Performance. *Journal of Technovation*, 32(1), pp.316-327, 2012.
- Kakabadse, N., Karatas-Ozkan, M., Theodorakopoulos, N., McGowan, C. and Nicolopoulou, K., Business incubator managers' perceptions of their role and performance success: Role demands, constraints, and choices. *European Management Review*, 17(2), pp.485-498, 2020.
- Kwon, S.W., Rondi, E., Levin, D.Z., De Massis, A. and Brass, D.J., Network brokerage: An integrative review and future research agenda. *Journal of Management*, 46(6), pp.1092-1120, 2020.
- Lalkaka, R., *Technology business incubation: a toolkit on innovation in engineering, science and technology* (Vol. 255). UNESCO, 2006. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000143008>. [Accessed on 12 June 2023].
- Lanham-New, W. J. 2019. "Incubated Entrepreneurs": A study into the everyday experiences of business incubation through a micro-sociological lens. Unpublished Degree of Doctor of Philosophy. University of Surrey. England. Available at: <https://openresearch.surrey.ac.uk/esploro/outputs/doctoral/Incubated-entrepreneurs-a-study-into-the-everyday-experiences-of--business-incubation-through-a-micro-sociological-lens/99512484102346?> [Accessed: 01 February 2024].
- Lechner, C. Dowling, M., Firm networks: External relationships as a source for growth and competition of entrepreneurial firms. *Entrepreneurship and Regional Development*, 15(1), pp.1-26, 2010.
- Leitão, J., Pereira, D. and Gonçalves, A., Business incubators, accelerators, and performance of technology-based ventures: A systematic literature review. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(1), p.46, 2022.
- Littunen, H., Small Business Economics. Networks and Local Environment Characteristics in the Survival of New Firms.5 (7) pp. 4-15, 2010.
- Lose, T., Business incubators in South Africa: A resource-based view perspective. *Academy of Entrepreneurship Journal*, 27, pp.1-11, 2021.
- Lose, T., Nxopo, Z., Mazirir, E., Navigating the role of business incubators: a review of the current literature on business incubation in South Africa. *ACTA Universitatis Danubius*, 12(5), pp.130 -140, 2016.
- Lubis, N.W., Resource Based View (RBV) in Improving Company Strategic Capacity. *Research Horizon*, 2 (6), 587–596, 2022.
- Maus, A. and Sammut, S., Incubators: how they adapt to a changing world. In *World Encyclopedia of Entrepreneurship* (pp. 392-399). Edward Elgar Publishing, 2021.
- Metrick, A. and Yasuda, A., *Venture capital and the finance of innovation*. John Wiley and Sons, 2021.
- Mmasi, S.M., *An investigation of the impact of business incubation in promoting the competitiveness of SMEs. A case of business incubator in Tanzania* (Doctoral dissertation, The Open University of Tanzania), 2020. Available at: <https://www.researchgate.net/profile/Sigisbert-Mmasi-2/publication/343384257> [Accessed: 31 January 2024].\_ from where when?
- Möller, K., Nenonen, S. and Storbacka, K., Networks, ecosystems, fields, market systems? Making sense of the business environment. *Industrial Marketing Management*, 90, pp.380-399, 2020.
- Mutambi, J., Byaruhanga, J.K., Trojer, L., Buhwezi, K.B., Research on the State of Business Incubation Systems in Different Countries: Lessons from Uganda. *African Journal of Science, Technology, Innovation and Development*, 7(1), pp.190-214, 2010.
- Ndabeni, L. and Mashigo, P.M., Mainstreaming Gender in the Analyses of Innovation Systems. *South Africa*, 2019
- Ndabeni, L., The Contribution of Business Incubators and Technology Stations to Small Enterprise Development in South Africa. *Development South Africa*, [e-journal] 25(3), pp.259-268, 2008. Available at: The University of Pretoria Database [Accessed 1 May 2012].
- Nyemba, W.R., Mbohwa, C. and Carter, K.F., Incubation and Technology Parks: Recent Trends, Research and Approaches. *Bridging the Academia Industry Divide: Innovation and Industrialisation Perspective using Systems Thinking Research in Sub-Saharan Africa*, pp.209-228, 2021.
- Olawale, F., Garwe, D., Obstacles to the Growth of New SMEs in South Africa: A Principle Component Analysis of Business Management. *Journal of Entrepreneurship* 4(5), pp. 729-738, 2010.
- Page, J. and Söderbom, M., Is small beautiful? Small enterprise, aid and employment in Africa. *African Development Review*, 27(S1), pp.44-55, 2015.
- Pattanasak, P., Anantana, T., Paphawasit, B. and Wudhikarn, R., Critical factors and performance measurement of business incubators: A systematic literature review. *Sustainability*, 14(8), p.4610, 2022.
- Peng, H., Li, B. and Liu, Y., How social network influences the growth of entrepreneurial enterprises: Perspective on organizational and personal network. *SAGE Open*, 12(2), p.21582, 2022.
- Pettersen, I.B., Aarstad, J., Hovig, O.S. and Tobiassen, A.E., Business Incubation and the Network Resource of Start-ups. *Journal of Innovation and Entrepreneurship*, 5(7), pp.1-17, 2016.

- Phillips, R., Critical Success Factors for Biotech Incubators-A Qualitative Study of Successful Incubators in China and the US. *Jingwei Wu, Ling Wan, Fabio Della Bianca, Altynbek Kabdolov, Karina J Tang and Robert A. Phillips (2022) Journal of Asia Entrepreneurship and Sustainability*, 18(2), pp.92-124, 2022.
- Pi, L., External knowledge absorption in Chinese SMEs (Doctoral dissertation, Leiden University), 2021. Available at: <https://www.universiteitleiden.nl/en/research/research-output/science/external-knowledge-absorption-in-chinese-smes> [Accessed: 2 December 2023]
- Ratinho, T., Amezcua, A., Honig, B. and Zeng, Z., Supporting entrepreneurs: A systematic review of literature and an agenda for research. *Technological Forecasting and Social Change*, 154, p.119956, 2020.
- Santoso, N.P.L., Sunarjo, R.A. and Fadli, I.S., Analyzing the Factors Influencing the Success of Business Incubation Programs: A SmartPLS Approach. *ADI Journal on Recent Innovation*, 5(1), pp.60-71.
- SANYAL, S., HISAM, M.W. and BAAWAIN, A.M.S., Entrepreneurial orientation, network competence and human capital: The internationalization of SMEs in Oman. *The Journal of Asian Finance, Economics and Business (JAFEB)*, 7(8), pp.473-483, 2020.
- Schutte, F. and Barbeau, N., The influence of business incubators on the post-incubation success of small businesses. *International Journal of Entrepreneurship*, 26(7), pp.1-17, 2022.
- Sohail, K., Belitski, M. and Christiansen, L.C., Developing business incubation process frameworks: A systematic literature review. *Journal of Business Research*, 162, p.113902, 2022.
- Street, C.T., Cameron, A., External Relationships and the Small Business. *Journal of Small Business Management*. 45(2), pp. 239-266, 2017.
- Sullivan, D.M., Marvel, M.R. and Wolfe, M.T., With a little help from my friends? How learning activities and network ties impact performance for high tech startups in incubators. *Technovation*, 101, p.102209, 2021.
- Tang, M., Walsh, G.S., Li, C. and Baskaran, A., Exploring technology business incubators and their business incubation models: case studies from China. *The Journal of Technology Transfer*, 46, pp.90-116, 2021.
- Tsai, F., Hsieh, L.H.Y., Fang, S., Lin, J.L., The Co-Evolution of Business Incubation and National Innovation Systems in Taiwan. *Journal of Technological Forecasting and Social Change*, 76(1), pp.629-643, 2009.
- Van der Zwan, P., Thurik, R., Verheul, I. and Hessels, J., Factors influencing the entrepreneurial engagement of opportunity and necessity entrepreneurs. *Eurasian Business Review*, 6, pp.273-295, 2016.
- Van Rijnsoever, F.J., Meeting, mating, and intermediating: How incubators can overcome weak network problems in entrepreneurial ecosystems. *Research policy*, 49(1), p.103884, 2016.
- Van Weele, M.A., *Unpainting the black box: Exploring mechanisms and practices of start-up incubators* (Doctoral dissertation, Utrecht University), 2016. Available at: <https://dspace.library.uu.nl/handle/1874/334862> [Accessed: 11 November 2-23].
- Van Weele, M.A., van Rijnsoever, F.J., Groen, M. and Moors, E.H., Gimme shelter? Heterogeneous preferences for tangible and intangible resources when choosing an incubator. *The Journal of Technology Transfer*, 45, pp.984-1015, 2020.
- Vanderstraeten, J., Matthyssens, P., Service- Based Differentiation, Strategies for Business Incubators: Exploring External and Internal Alignment. *Journal of Technovation*, 32(1) pp.656-670, 2012.
- Vanderstraeten, J., van Witteloostuijn, A., Matthyssens, P. and Andreassi, T., Being flexible through customization– The impact of incubator focus and customization strategies on incubatee survival and growth. *Journal of Engineering and Technology Management*, 41, pp.45-64, 2016.
- Vardhan, J. and Mahato, M., Business incubation centres in Universities and their role in developing entrepreneurial ecosystem. *Journal of Entrepreneurship and Innovation in Emerging Economies*, 8(1), pp.143-157, 2022.
- Wu, W., Wang, H. and Wu, Y.J., Internal and external networks, and incubatees' performance in dynamic environments: entrepreneurial learning's mediating effect. *The Journal of Technology Transfer*, 46, pp.1707-1733, 2021.
- Zhang, H., Lan, T. and Li, Z., Fractal evolution of urban street networks in form and structure: A case study of Hong Kong. *International Journal of Geographical Information Science*, 36(6), pp.1100-1118, 2022.