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Business incubators: the impact of their support

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Chapter 2

Literature Review and Theoretical Embedding

Chapter 2 describes a literature review particularly conducted for our research. Section 2.1 reviews the previous studies on business incubators and addresses the research gap. Section 2.2 investigates the theoretical assumptions employed in the business incubation literature. Finally, section 2.3 summarizes all the theoretical views and addresses the selected theoretical lens for this study, viz. RBV.

Business incubators are a rather novel form of supporting entrepreneurs. They attempt to facilitate knowledge transfer and help entrepreneurs through the provision of particular services and resources (see Albort-Morant and Oghazi, 2016; Wonglimpiyarat, 2016; Wu and Han, 2017). Generally, business incubators have been created as a supportive mechanism for new technology-based firms with the goal to stimulate the formation of technology-intensive companies and their growth through the linkage between technology, business, and capital (see Chan and Lau, 2005; Grimaldi and Grandi, 2005; McAdam and McAdam, 2008). As a result of their support, NTBFs experience (1) a longer survival, (2) a more stable business, and consequently (3) a positive growth in the economy (see Schwartz and Hornych, 2008; Schwartz, 2013; Albort-Morant and Oghazi, 2016).

2.1 Three Definitions from Three Generations of Business Incubators

Over the years, BIs have garnered burgeoning interest from practitioners, scholars, and policymakers for their contribution to entrepreneurship and innovation (cf. Phan et al., 2005; Eveleens et al., 2017; van Rijnsoever et al., 2017). Current literature on BIs provides a large number of definitions for them. However, due to the existence of various kinds of organizations such as business incubators with regional

and national differences (cf. Aaboen, 2009), there is no clear definition for business incubators (cf. Bruneel et al., 2012).

Bruneel et al. (2012) showed that the range of support by BIs has been evolved since the 1950s and it led to the emergence of *three generations* for BIs (see Table 2-1). In the 1980s, the first generation of BIs basically provided more shared *tangible resources* (e.g., office space, reception, conference rooms, and laboratories) (first definition) (Bruneel et al., 2012). In the 1990s, the emergence of IT changed the provision of the supports by BIs and their purposes (van Rijnsoever et al., 2017). Thus, the second generation emerged. This generation concentrated more on *organizational learning* and supplemented intangible resources (e.g., coaching, training programs, consultancy and weak-networking) for their NTBFs (second definition). The third generation is called *network-based incubators*. It attempts to provide access to the required resources for NTBFs, particularly by using networks and venture capital (third definition) (Bruneel et al., 2012; Eveleens et al., 2017). Table 2-1 summarizes the evolution of the value added by BIs.

Table 2-1: The Evolution of the Value added by BIs to the NTBFs

First Generation (1980s)	Second Generation (1990s)	Third Generation (2000-2020)
Shared office space	Shared office space Training Consultancy Weak networking	Shared office space Training Consulting Networking Venture capital

In Table 2-2, three definitions from three generations are given. They depict a complete picture of BI definitions (ranging from an emerging definition via a progressing definition to a mature definition). In conclusion, business incubators are initiatives which provide their tenants with shared physical facilities (cf. Hackett and Dilts, 2004; Phan et al., 2005; Grimaldi and Grandi, 2005), with different business-

oriented services (cf. Hackett and Dilts, 2004), and with networks to increase NTBFs' chances of survival (cf. Bruneel et al., 2012).

Table 2-2: Definitions of Business Incubators

Emerging definition: BIs are a means to fostering new enterprises through the provision of office spaces and shared facilities (see Allen and McCluskey, 1990).

Progressing definition: BIs are a shared office space facility, seek to provide its incubatees with a value adding intervention system of monitoring and business assistance (see Hackett and Dilts, 2004, p.57).

Mature definition: BIs are used to describe a wide range of organizations that support entrepreneurs to launch their businesses through the provision of training, networking advising activities, and venture capital (see Eveleens et al., 2017).

Below we discuss four topics. Subsection 2.1.1 elaborates on the three goals of different generations of BIs. In Subsection 2.1.2, we address the typology of the BIs. Then, in Subsection 2.1.3, we highlight the area and domain of our research. Finally, in Subsection 2.1.4, we address the shortcomings and missings in the literature.

2.1.1 The Goals to be Achieved

In this subsection, we describe three different goals that three generations of BIs aim to reach. In the incubation literature, a number of studies focus on the advantages of business incubators for NTBFs, and explore the added value to NTBFs located within BIs (see, e.g., Colombo and Delmastro, 2002; Ferguson and Oloffson, 2004; Hackett and Dilts, 2004; Bergek and Norrman, 2008; Bøllingtoft, 2012; Bruneel et al., 2012). Three specific goals of BIs as put forward by these studies are as follows:

Goal 1: to stimulate the commercialization of research in universities and research institutes (particularly generation 1),

Goal 2: to impact economic development positively through enhancing entrepreneurship (particularly generation 2), and

Goal 3: to increase the rate of survival of new technology-based firms in their early stages (particularly generation 3) (cf. Hackett and Dilts, 2004; Bergek and Norrman, 2008; Schwartz, 2013).

A prior study by Ferguson and Oloffson (2004) compared the growth indicators of 30 NTBFs located in BIs of science parks with 36 NTBFs' performance located off-parks. Their results indicated that NTBFs located in BIs, have a better rate of survival than those that are off-BIs. Similarly, Chan and Lau (2005) assessed the development of six NTBFs within BIs. They concluded that BIs have a positive impact on the lifecycle of the NTBFs. Later on, and in line with previous studies, Mas-Verdu et al. (2015) examined the influence of BIs on NTBFs' survival. However, their findings revealed that BIs, on their own, have insufficient means to impact NTBFs' survival. The level of business innovation, size, sector, and export activities of NTBFs should affect survival (Mas-Verdu et al., 2015).

2.1.2 Typology of BIs

Based on the type of sponsors and stakeholders of the BIs or the sources of supports, BIs are classified into public, private, and no sponsored groups (see Grimaldi and Grandi, 2005; Bergek and Norrman, 2008; Bøllingtoft, 2012). More specific, Grimaldi and Grandi (2005) have proposed a spectrum ranging from (A) public to (B) private and (C) independent business incubators.

A: Public Incubators

Public incubators use public resources with the aim of economic development and job creation (Grimaldi and Grandi, 2005). They are classified into two groups: (A1) Business Innovation Centers (BICs) and (A2) University Business Incubators (UBIs). The BICs are the most popular incubators offering mostly tangible resources and basic services to their tenants. The UBIs are set up by universities and provide services for NTBFs through the interaction with universities (e.g., access to the latest knowledge, faculty consultants, educated workforce, laboratories, and technology transfer programs) (Grimaldi and Grandi, 2005; McAdam and McAdam, 2008;

Wonglimpiyarat, 2016). A cooperation with a university usually leads to a reduction in development cost for NTBFs. Furthermore, as universities are the fundamental resource of innovation, this cooperation might have a positive influence on the perceptions of NTBFs' customers that the outcome of the NTBF is based on the latest knowledge (McAdam and McAdam, 2008; Stal et al., 2016).

B: Private Incubators

Grimaldi and Grandi (2005) classify private incubators also into two categories: (B1) Corporate Business Incubators (CBIs), and (B2) Independent Business Incubators (IBIs). CBIs are set up by large companies, while IBIs are the other private type of incubators owned by single individuals, namely accelerators, to invest in NTBFs and support them to develop (Grimaldi and Grandi, 2005).

C: Independent Incubators

Later, Bøllingtoft (2012) identifies a new type of BIs called bottom-up business incubators, which is a self-generated-entrepreneurial-enabled environment. The bottom-up business incubators are set up by entrepreneurs and receive no public or private support (Bøllingtoft, 2012).

2.1.3 Our Research Area

In the thesis, I have chosen to study UBIs (i.e., type (A2)). Two main reasons for this selection are: (1) universities continuously have access to the talents and the latest knowledge. Consequently, more new ideas and businesses will be generated (see Dahms and Kingkaew, 2016), and (2) while NTBFs suffer from management knowledge, universities, particularly in collaboration with business schools, are an appropriate alternative to support them (cf. Barbero et al., 2012; Dahms and Kingkaew, 2016).

2.1.4 Shortcomings and Missings

In summary, our review of the related literature reveals that there is a large number of studies on the advantages of BIs, their characteristics, and their typology (see, e.g.,

Löfsten and Lindelof, 2001; Colombo and Delmastro, 2002; Hackett and Dilts, 2004; Bøllingtoft and Ulhøi, 2005; Chan and Lau, 2005; Bergek and Norrman, 2008; Vanderstraeten and Matthyssens, 2012). From these studies, we see that two shortcomings exist in the incubation literature. First, it is not still clear to what extent BIs have an impact on the performance of the NTBFs (see Hackett and Dilts, 2008; Bruneel et al., 2012; Stokan et al., 2015; Soetanto and Jack, 2016; Eveleens et al., 2017). Second, although there is growing attention to the BIs studies, there still is a missing of in-depth theoretical perspectives in the relevant literature.

To address these shortcomings and missings and to obtain more understanding about business incubators, our study concentrates on the impact of the supports by UBIs on the performance of the NTBFs.

2.2 Four Theoretical Perspectives

In this section, the four theoretical perspectives that are mostly employed to study BIs, are addressed (see Eveleens et al., 2017, and also section 1.4). Subsection 2.2.1 explains Resource-Based View. The Knowledge-Based View is addressed in subsection 2.2.2, mainly as a Theoretical perspective. Subsection 2.2.3 presents the Organizational Learning Theory perspective. Social Capital Theory is described in subsection 2.2.4. The order is chronologically based. In the beginning of BIs, it was believed that the main drivers of the support were the offered resources by BIs. Thereafter, one believed that access to capital was an important issue. The third issue to give a position to any BI was the possession of knowledge. However, even with all the mentioned three issues, the BI was not always a success. This was a thing to be remediated by organizational learning. Finally, subsection 2.2.5 reviews the four presented theoretical perspectives.

2.2.1 Resource-Based View

A Resource-Based View (RBV) explains that firms are collections of different resources that are Valuable, Rare, Inimitable, and Non-substitutable (hereafter VRIN), which possess a range of capabilities. RBV describes how firms are able (1)

to achieve their competitive advantages and (2) to sustain the acquired advantages over time (Barney, 1991; Eisenhardt and Martin, 2000). Indeed, when firms have access to VRIN resources, they can obtain a sustainable competitive advantage (see Musiolik et al., 2012; Somsuk and Laosirihongthong, 2014). Some examples of VRIN resources are knowledge, credibility, and trust, which cannot be acquired easily (Eveleens et al., 2017).

The resources are classified into two clusters. First, we have tangible resources that include (a) facilities, and (b) capital goods, such as machines and financial assets (see Musiolik et al. 2012; Eveleens et al., 2017). Second, we have intangible resources that include a wide range of less visible assets, such as trademarks, knowledge, and reputation. In such a configuration, resources provide a strategic direction and show sustained competitive advantages for the firms (see Musiolik et al., 2012; Somsuk and Laosirihongthong, 2014).

While accessing the VRIN resources is necessary, they are not sufficient for the growth of the NTBFs. NTBFs also need to be equipped with capabilities (see Newbert, 2007). A capability is a firm's ability (a) to utilize its inputs such as resources and (b) to efficiently combine and transfer them into their desired objectives (Dutta et al., 2005). Indeed, capabilities are intermediaries between (1) a firm's resources, and (2) its performance (Dutta et al., 2005).

Our Conclusion on RBV in the incubation literature

Prior investigations (see, e.g., Eveleens et al., 2017) reviewed the empirical literature on the different theoretical perspectives employed in business incubator studies. They showed that the majority of previous studies on business incubators are inclined to use RBV. These studies see BIs as a means to support their NTBFs through the provision of the essential external resources and capabilities. The expectations are that they will have impact on the growth of the NTBFs (see McAdam and Marlow, 2007; Clarysse and Bruneel, 2007; McAdam and McAdam, 2008; Li and Chen, 2009; Chen, 2009; Soetanto and Jack, 2016). Supportive studies mentioned earlier have

highlighted that such external resources showed indeed a positive impact on the performances of the NTBFs. In addition, other previous investigations identified different resources by business incubators for NTBFs, such as financial capital resources, a general network, technical and managerial knowledge, and human resources (see, e.g., Hansen et al., 2000; Bøllingtoft and Ulhøi, 2005; Bergek and Norrman, 2008; Eveleens et al., 2017).

Here we remark that the majority of the previous investigations which used RBV, mainly explained how these resources and capabilities are conveyed to the NTBFs (Rothschild and Darr 2005; Scillitoe and Chakrabarti 2010; Soetanto and Jack 2013; Eveleens et al., 2017). For instance, Hansen et al. (2000) discussed how organized networking supportive activities as performed by business incubators are able to provide NTBFs with their required resources in a right time and with positive impact on their performances. Moreover, Patton et al. (2009) and Soetanto and Jack (2016) also performed this type of research. This research led us to further research of the impact of relational issues and knowledge resources on the performance of the NTBFs. In the same way, the impact of different tangible and intangible resources by business incubators on the growth of NTBFs was analyzed by McAdam and McAdam (2008). The influence of relational resources (networking) by incubators on the developing stages of NTBFs has been addressed by Schwartz and Hornych (2008). Here some prior investigations had shown that business incubators were also able to have impact on the capabilities of the NTBFs (see Chen and Wang, 2008; Li and Chen, 2009; Fang et al., 2010). In line with this remark, Bøllingtoft and Ulhøi (2005) stated that business incubators provide access to the general networks for all of their NTBFs. In accordance, Rothaermel and Thursby (2005) revealed that business incubators exploited their external resources to provide their NTBFs with additional funding and technical knowledge (see Eveleens et al., 2017).

2.2.2 Knowledge-Based View

The Knowledge-Based View (KBV) emphasizes the effect of knowledge on the firm's performance. According to KBV theory, knowledge is one of most critical resources of the firms. Compared to other firm's resources, knowledge cannot be transferred easily. Therefore, the KBV is able to give particular competitive advantages to firms (Grant, 1996). Moreover, Grant (1996) showed that knowledge needs to have the following characteristics to be utilized in a firm and consequently create value. The identified characteristics are:

- (1) transferability,
- (2) capacity for aggregation, and
- (3) appropriability (see Grant 1996).

Our Conclusion on KBV in the incubation literature

Apart from the given characteristics, knowledge has different typologies. Each type has a specific effect on the firm's performance. The following three types of knowledge have a strong influence on NTBFs' performance: (1) market, (2) technology, and (3) business and management (see Eveleens et al., 2017). Market knowledge refers to the identification of market segmentation, customer needs, and competitors. Technological knowledge explains the function of the technology and how it performs. Business knowledge addresses how founders launch new ventures, hire new staff, and acknowledge the business laws and regulations.

2.2.3 Organizational Learning Theory

The Organizational Learning Theory (OLT) emphasizes learning to consist of (1) the process of knowledge creation, acquisition, and distribution, and (2) its outcome. According to this theory, the NTBFs' activities are learning processes that lead to knowledge creation and distribution (see Fang et al., 2010). Indeed, learning is a prominent feature of the accumulation of technology to empower NTBFs to compete.

OLT posits that learning provides a key advantage to the firms over their competitors (see Eveleens et al., 2017).

OLT classifies learning into different types. For NTBFs, the four most relevant types are (1) social, (2) individual, (3) exploitative, and (4) explorative (Eveleens et al., 2017). First, while (1) the social type takes place *in relation to* the NTBFs environment, (2) individual learning occurs *within* the individuals (see Wang and Chugh 2014). Second, while (3) exploitative learning involves *the development* of current technologies, products, and services, (4) explorative learning attains *identifying new opportunities*, new markets, products, and services. Within the NTBFs, making a balance between exploitative and explorative learning is a key to obtain advantages to compete and create short-term and long-term benefits (see Eveleens et al., 2017).

Our Conclusion on OLT in the incubation literature

Previous literature in the incubation studies that employed OLT showed that BIs attempted to provide a learning environment for their NTBFs (see Hughes et al., 2007; Zolin et al., 2011). The provision of such an environment could be done through supportive networking activities by BIs (see Eveleens et al., 2017). Indeed, NTBFs achieved the mentioned three types of knowledge through the interactions with BIs' networks including mentors, advisors, corporates, and BIs' management teams (see Bruneel et al., 2012). In summary, it seems that the interactions between NTBFs in BIs, provide NTBFs with access to knowledge.

2.2.4 Social Capital Theory

The Social Capital Theory (SCT) is to be seen as a broad theoretical perspective which can be employed in sociology, economics, business, and particularly in the entrepreneurship (see Ebberts, 2013; Johnson, 2013). Here we quoted Johnson, (2013, p.4) "Social capital theory (SCT) is an efficient interdisciplinary concept for explaining how self-interested individuals engage in collective behaviors and maintain social order. Two principal components of social capital are:

- (1) social networks of individuals who exchange reciprocal cooperation and build collective resources, and
- (2) individual gains in personal resources by taking advantage of social networks”.

In the entrepreneurship literature, SCT states that the positive or negative attitudes of others about entrepreneurs, lead to specific consequences. The positive consequences include improving access to the knowledge, obtaining more power, and increasing in a scene of belonging. The negative consequences of social capital are mainly the costs of keeping the relationships (see Eveleens et al., 2017). Within the entrepreneurship research streams, one of the fundamental aspects of SCT that has extensively been studied is social networks (see Slotte-Kock and Coviello, 2010; Ebbers, 2013). Social networks are employed to describe the use of relationships in achieving the required knowledge and resources (Chen and Wang, 2008). Indeed, the relationship with others builds the infrastructure of social capital. Eveleens et al. (2017) identified three dimensions of social capital. Below we mention the three identified dimensions and discuss them. They are (A) relational dimension, (B) structural dimension, and (C) homophily dimension.

A: Relational dimension

The relational dimension refers to the strength of the ties in a relationship. On the one hand, the family and friendship relationships have strong ties due to the emotions. These types of relations are more reliable, but the opportunity cost of maintaining them is high. On the other hand, weak ties are valuable too. They can provide firms access to several sources of information, and their maintaining cost is low (Eveleens et al., 2017).

B: Structural dimension

The structural dimension of social capital explains the level of connection between the nodes of the network. The closer connection between the actors in a network, the higher closure, and consequently, the more an actor's social capital increases.

However, less closure has the potential to increase the social capital of the actor as well. The reason is that it provides access to the required knowledge and information for the actors. For NTBFs, less closure has more impact on their performance (Stam et al., 2014).

C: Homophily dimension

The homophily dimension describes the similarity between the two actors of the networks. This similarity is about their knowledge and what they think. Either a high degree or low degree of homophily positively impacts on the social capital. The first one occurs due to a similar understanding, while the second one provides access to alternative resources. Previous studies showed that a low degree of homophily has more relation with the performance of NTBFs than the higher degree (see Stam et al., 2014; Eveleens et al., 2017).

Our Conclusion on SCT in the incubation literature

Through the lens of SCT, entrepreneurship scholars concentrate on:

- (1) the content of various social network relationships such as family and close friends,
- (2) their mechanisms, and
- (3) their network structure for NTBFs.

The majority of previous investigations has studied the impact of networks on the performance of NTBFs. According to the three dimensions of social capital, Eveleens et al. (2017) stated that BIs have effect on the dimensions of NTBFs' social capital and therefore, help them form more relations.

For the structural dimension, NTBFs working in BIs can benefit from proximity to other NTBFs. These benefits include forming internal networks, exchanging knowledge and accessing to the resources (Bøllingtoft, 2012; Ebbens, 2013; Eveleens et al., 2017). In addition, BIs' managers attempt to connect their NTBFs with their

external networks as well. As a result, BIs' networking activities lead to closer relations in different types of networks for their NTBFs.

Since BIs impact the relational dimension of the NTBFs' social capital, they also attempt to make strong ties between their NTBFs and strengthen the relations between the management team of BIs with their NTBFs. Furthermore, BIs develop weak relations between their NTBFs and other external networks as well (Bøllingtoft and Uihøi, 2005; Eveleens et al., 2017). All in all, the BIs have a clear effect on the homophily dimension of their NTBFs' social capital.

2.2.5 Review of the Theoretical Perspectives

Reviewing the four discussed theoretical perspectives, we saw that they differ in terms of their intermediary benefits. For RBV, the intermediary benefits are resources and capabilities. The research stream of RBV concentrates on the impact of resources on the development of NTBFs. For SCT, the intermediary benefit is social relations (Eveleens et al., 2017). The investigations in the SCT area have focused on the extent that NTBFs develop their relationships and on the networking activities discussions. In KBV and OLT, intermediary benefits are knowledge and learning. Each of these perspectives has its own theoretical mechanism in the business incubation literature.

Studies with RBV perspectives see BI as a bridge between its NTBFs and its environment to leverage the required resources and capabilities (see McAdam and McAdam, 2008; Bergek and Norrman, 2008). The key resources deployed by NTBFs are business supportive activities of BIs. For NTBFs in UBIs, the proximity to a university increases the likelihood of access to the latest knowledge, facilities, and skilled labor. Here, UBIs provide their NTBFs with access to the resources of business advice and consultants (Hansen et al., 2000; Soetanto and Jack; 2016; Eveleens et al., 2017).

In contrast, theoretical mechanism for SCT concentrates mostly on networking activities and on how NTBFs develop their relations and in the networks provided by

BIs. Investigations on adopting KBV and OLT focus on the knowledge exchange and the learning process for NTBFs, with the role of BIs in between.

In order to model the resources and supports by UBIs, we employ RBV. It appears that by this combination an appropriate theoretical perspective is used. Furthermore, while this theoretical perspective considers the combination of a firm's resources and their capabilities (ability to use resources), employing this theory is able to provide us with much more insight into the extent to which NTBFs use the resources by UBIs. Table 2-3 provides us with an overview of the selected investigations on the business incubators with a focus on their supportive activities from different theoretical perspectives.

Table 2-3: Overview of the Reviewed Literature of BIs

Authors	Research Sample	Theoretical Perspectives	Research Approach	Focus
Mian (1996)	6 UBIs in US	RBV	Mixed methods	The identification of value-added by BIs for NTBFs
Colombo and Delmastro (2002)	45 NTBFs within incubators, 45 NTBFs out of incubators- Italy	KBV, RBV	Quantitative	The comparison analysis between the performance of the on- and off-incubator firms.
Grimaldi and Grandi (2005)	8 Italian incubators	RBV	Qualitative	The identification of the typology of business incubators
McAdam and McAdam (2008)	longitudinal evidence gathered from 18 HTBFs	RBV	Qualitative	The usage of resources by NTBFs during their development process
Patton et al. (2009)	12 NTBFs located in BIs in UK	RBV	Qualitative	Description on the importance of the support by BIs
Soetanto and van Geenhuizen (2010)	100 NTBFs located in UBIs in the Netherlands and Norway	SCT, RBV, KBV	Quantitative	The role of networking activities by BIs on the performance of the NTBFs
Schwartz and Hornyh (2010)	150 NTBFs located in BIs in Germany	SCT, RBV, KBV	Quantitative	The comparison between support by generalized and specialized BIs

Patton and Marlow (2011)	27 NTBFs within the incubator membership at Bristol and Southampton	OL, KBV, RBV	Qualitative	The influence of support by BIs on the learning by NTBFs
Zolin et al. (2011)	214 incubated-NTBFs in Germany	OL, SCT	Quantitative	The influence of adding new members to the NTBF on the flexibility of the team.
Bruneel et al. (2012)	7 European business incubators	RBV	Qualitative	The evolution of BIs, identification of supports by BIs and their value proposition
Vanderstraeten and Matthyssens (2012)	9 non-profit incubators in Belgium	RBV	Qualitative	The identification and description of the service-based strategies of BIs
Bøllingtoft (2012)	in 2 bottom-up incubators in Denmark	RBV	Qualitative	Actual networking and cooperation activities of BIs
Ebbers (2013)	101 NTBFs in the Netherlands	SCT	Quantitative	Networking behaviour of entrepreneurs in BIs
Rubin et al. (2015)	11 incubators in Australia and Israel	KBV	Qualitative	Analyse the knowledge flows and interrelations between BIs and NTBFs.
Soetanto and Jack (2016)	141 NTBFs in BIs located in UK, the Netherlands and Norway	RBV	Quantitative	The influence of the networking and business advisory services by BIs on the performance of NTBFs
Van Weele et al. (2017)	6 European BIs	RBV	Qualitative	The identification of NTBFs' resources needs and gaps
Van Weele et al. (2018)	90 NTBFs in Europe, 191 NTBFs in US, Israel and Australia	RBV, SCT	Qualitative	NTBFs' challenges and the extent that BIs can help them
Soetanto and van Geenhuizen (2019)	100 NTBFs located in BIs in the Netherlands and Norway	RBV, SCT	Quantitative	The relations between university and NTBFs

2.3 Chapter Conclusion

Despite the growing research in business incubation studies, it is not yet clear *how* the different support activities of UBIs and the NTBF's capabilities have an impact on the performance of the NTBFs (Grimaldi and Grandi, 2005; Bergek and Norrman, 2008; Bollingtoft, 2012; Eveleens et al., 2017; Soetanto and Jack, 2018). Due to the

small and novel nature of the NTBFs, it is obvious that such firms are in dire need of tangible and intangible resources, such as knowledge, finance, and human capital (Clarysse et al., 2005; van Geenhuizen and Soetanto, 2009). Therefore, BIs can act as a tool to provide different resources for NTBFs in order to help them grow (Lockett and Wright, 2005; McAdam and McAdam, 2008). It is well known that a prior investigation stated that the survival and growth of NTBFs are a competitive advantage of UBIs (see Somsuk and Laosirihongthong, 2014). Thus, the RBV theory can be implemented as a means of describing to what extent resources of UBIs enable NTBFs to create competitive advantages and a promising performance. Here we add to this, that it can explain what kind of resources by UBIs will have an impact on the superior performance of the NTBFs (Somsuk and Laosirihongthong, 2014). Further, RBV assumes that firms are collections of different resources and capabilities. In such a configuration, the resources may provide a strategic direction and create a sustained competitive advantage for firms (Grant, 1991; Musiolik et al., 2012; Somsuk and Laosirihongthong, 2014).

To conclude, as we aim (1) to investigate the influence of two supports by the UBIs on the performance of the NTBFs and (2) to consider the relevant NTBF's abilities (e.g., capability) in using these supports, we here establish that RBV's perspective is the most appropriate perspective to provide us with answers to the RQs. In contrast, the SCT, KBV, and OLT perspectives are more proper to explain specific supports by BIs (e.g., social capital and knowledge sharing), which make us more confident about the appropriateness of RBV to answer our RQs. This approach is also in line with previous studies (see McAdam and Marlow, 2007; Chen, 2009; Soetanto and Jack, 2013; Soetanto and Jack, 2018), which investigated the impact of BIs on the performances of NTBFs.

Two research streams

Due to the importance of the capabilities of the firms, previous researchers have thoroughly studied the notion of research streams (see Newbert, 2007; Koryak et al.,

2015). Already Newbert (2007) has identified roughly 27 types of capabilities. In this thesis, we will build our framework based on the relevant capabilities in using the support by BIs (e.g., financial capability, absorptive capacity). The relation between firm resources and capabilities divides the RBV studies into two research streams (Rivard et al., 2006). The first research stream considers the resources including capabilities (see, e.g., McAdam and McAdam, 2008; March, 1991), whereas the second stream distinguishes resources from the capabilities (see Dutta et al., 2005; Hackett and Dilts, 2004). The second stream is characterized by the idea that the capabilities represent a firm's capacity to utilize resources (see Dutta et al., 2005). In this thesis, I follow the second research stream in developing our research path towards the formulation of a conceptual model.

As mentioned earlier, the majority of previous investigations in analyzing the activities and processes of BIs is conducted through the lens of RBV (see Eveleens et al., 2017). However, these studies have been performed almost solely with a rather limited role assigned to the NTBF strategy (see Soetanto and Jack, 2016). The authors stated that previous investigations in the context of the interaction between support by BIs and NTBFs mainly concentrated on the outcome of the NTBFs. They overlooked that NTBFs might take a different innovation strategy when they receive support from BIs. In addition, the investigations in the context of strategy within NTBFs do not consider the influence of BIs on the performances of NTBFs. It means that they neglected the fact that NTBFs take various strategical approaches in receiving support by BIs. On top of that, the unclear quality of the current and the proposed measurement tools will result in a quite limited generalizability of the findings. All in all, I will consider the role of NTBFs' innovation strategy by emphasizing the analysis of the impact of the support by BIs on the performance of the NTBFs.

