Business Incubators and Incubatees

A study of the entrepreneurs inside the Growth Factories

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Preface

As with any learning process, one cannot learn a new craft without guidance from more experienced and knowledgeable mentors and supervisors. My PhD journey has not been any different, and I am therefore grateful for all the support, advice, and guidance I have received during my PhD process from both Roskilde University and Væksthus Sjælland. However, before I introduce a list of acknowledgments, I would like to reflect on this dissertation and the last four years I have spent as a doctoral student.

Writing a dissertation (monograph) is a special experience because the PhD student has to produce a cohesive academic work in 200 pages, which differs significantly from a PhD process where the research process is divided into several academic articles. However, in both cases the PhD process is a learning process in which the PhD fellow is granted a limited period of time to learn the craft and art of research while gaining specialist knowledge within a narrow academic area. During the PhD process, the doctoral student evolves and thereby develops a preference for what type of research to conduct in the future. During the last four years, I have learned that I prefer the article-based research format and process, which is also why I have written a few academic articles from this dissertation. One of these articles, entitled "How do entrepreneurs' characteristics influence the benefits from various elements of a business incubator?" and written in collaboration with doctoral student Christian Monsson from Roskilde University, is largely framed by the content of this dissertation and is currently in a second review process at the *Journal of Small Business and Enterprise Development*. Nonetheless, the monograph still has its advantages as it is a larger and more comprehensive research format where the researcher can analyze and discuss theoretical and empirical findings in greater detail, which I also hope will shine through over the next 230 pages. However, without guidance and support from a number of people, this dissertation would probably not be lying here in front of you.

Firstly, I would like to thank my two supervisors, Associate Professor John Damm Scheuer and Associate Professor Göran Folke Serin, who have supported and guided me throughout the PhD process. John made sure that I left the port in great shape by ensuring that my research focus was on the right track from the start. Göran took over halfway through the process and made sure that I returned safely to port again

after being at sea for almost four years (with very stormy weather for the last six months). Thank you both for your time and effort.

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Being an industrial PhD fellow can create some challenges as one strives to balance academia with the more practical perspectives one encounters at organizations outside of the university. This process is difficult to manage for many co-financed doctoral students. However, both my company supervisor, Sandra Holst, and the CEO of Væksthus Sjælland, Mads Kragh, have eased this challenge greatly by providing me with useful feedback from both a practical but also an academic perspective. Furthermore, they have given me extra room and time for immersion in the dissertation when needed. Both of you have a great stake in my PhD. Thank you.

Finally, I would also like to thank all of the other doctoral students at Roskilde University, my colleagues at Væksthus Sjælland, and my family and friends, who have encouraged me to continue even at the hardest of times. That motivational push means more than you could ever imagine.

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1. Introduction to business incubation

As the research field of entrepreneurship has progressed, awareness of the importance of the role of entrepreneurship and small companies in job creation has increased, and entrepreneurs and the establishment of new companies are now portrayed as the engine for economic growth (Audretsch & Thurik, 2004; Carree & Thurik, 2005). Landström (2008) has highlighted the importance of the entrepreneur as someone who is needed in order to convert knowledge into economic growth. This awareness has mobilized policy makers and allowed them to understand how entrepreneurship is vital to economic development, and it has furthermore generated attention to the fact that many newly established entrepreneurial companies do not survive in the short or the long run. The initial three years of operation are considered to be vital for the survival of new entrepreneurial companies (Littunen, 2000). The stage in which the company is fighting for establishment is also known as the "valley of death," or "capital gap" when referring to start-up companies in need of funding (Auerswald & Branscomb, 2003). The survival rate for start-up companies differs from the national to the regional level; nonetheless, it is considered to be around 40–50% overall (Santarelli & Vicarelli, 2007). Other researchers refer to failure rates, stating that 40% of new ventures fail within the first year and 90% over 10 years; however, they also stress that there seems to be some disagreement regarding specific failure rates (Shepherd, Douglas, & Shanley, 2000).

It is clear that one important discourse on entrepreneurship is about survival or failure of the entrepreneurial company, and this discussion is continuously central as policy makers have discovered that increasing the survival rate has a direct impact on economic development (Sherman & Chappell, 1998). This might also be the reason for the presence of assessment studies promoting specific business-friendly initiatives as ways of improving conditions for entrepreneurs. Some of these studies have argued that it is cheaper to create initiatives targeting entrepreneurship than to invest in improving a nation's infrastructure, which is usually considered to be an effective way of creating jobs that can be measured in terms of public subsidy cost per job created (Aernoudt, 2004).

Silicon Valley is a famous example of how entrepreneurship has created economic growth on a regional level. Saxenian (1994) has argued that the great performance of and increased attention on Silicon Valley have been a facilitator for promoting entrepreneurship and opening policy makers' eyes to its possibilities. It is therefore believed that entrepreneurship can be promoted in certain cultural settings and that entrepreneurial regimes can have a positive impact on, e.g., regional development (Audretsch & Fritsch, 2003). This is supported by the belief that entrepreneurs operate in different forms of networks and are part of a social context consisting of personal relationships that influence the actions they carry out (Klyver, 2007). The social network of the entrepreneur is often used as a resource for acquiring key team members, financial investors, and lead generators to the business, all fundamental players who influence the entrepreneurial process (Zang, 2010). On a local level, entrepreneurs use their local networks to diversify and share customers (Young, 2010). This network orientation implies that surrounding social circumstances influence the entrepreneurial process and transform start-up companies into growth companies (Neergaard, Fisker, Madsen, & Ulhøj, 2003).

Awareness of the connection between entrepreneurial success and the use of and access to networks has generated political attention in the area of business incubation, and public-supported business incubators and science parks are seen as tools for economic development via networks of entrepreneurs (Phan, Siegel, & Wright, 2005). The interlink between policy makers and the urge to generate economic growth has led to a quest to launch business-friendly initiatives, and business incubators are one of these. This is probably also why the growth in the establishment of business incubators has increased significantly, with a total of more than 7,000 business incubators worldwide (Al-Mubaraki & Busler, 2013a). Furthermore, it has been argued that most business incubators worldwide are considered to be public funded to some degree (Al-Mubaraki & Busler, 2010a). Thus, the field of business incubation has become even more relevant to investigate for policy makers, practitioners, and academics, which is also why this PhD dissertation has been partly funded by the Danish Council for Technology and Innovation and a regional business link center, Væksthus Sjælland (Business Link Zealand). However, before we embark on an expedition into the field of business incubation, the disposition of the dissertation is presented. Chapter 2 provides a clear definition of

what business incubators are before looking further into this phenomenon and identifying the research focus and contribution of the dissertation in chapter 3. Chapter 4 discusses the development and emerging themes from the business incubation literature, and chapter 5 explains the entrepreneur from a theoretical perspective. Chapters 6 and 7 concentrate on the methodological choices and the general research design of the dissertation and introduces the business incubation initiative the Growth Factories. Chapter 8 introduces four individual case studies of entrepreneurs from the Growth Factories, which are discussed in chapter 9 in relation to the entrepreneurship literature introduced in chapter 5. In chapter 10 internal consistency between the case study and survey results is dealt with before the findings from the survey are presented and discussed in chapter 11. Finally, the findings of the survey and the case studies are discussed in relation to the business incubation literature in chapter 12, and conclusions on how being part of a business incubator might influence the incubatees' perception of business incubators and their own entrepreneurial process are presented in chapter 13 before managerial implications are discussed in chapter 14. To begin, we must first establish the definition of business incubators.

2. Defining business incubators

2.1 Different types of business incubators

There are different types of business incubators and thus different business incubation programs, e.g., science parks and business incubators. Thus, this section shows how the range of services offered within a business incubator is widely dependent on its type and the purpose before we discuss the definition of the term in the following section.

Business incubators can be classified as, e.g., nonprofit or for profit, and privately or publically sponsored (Temali & Campbell, 1984). Another way of distinguishing between types of business incubators is by using a Continental European and an Anglo-Saxon approach. The Continental European model is mostly funded by public means and focuses on economic development at a regional level and the creation of innovative networks. By contrast, the Anglo-Saxon model focuses on the creation of science-based companies that collaborate with research institutions (e.g., universities) that would be considered more as science parks. The latter approach is widely implemented in the United States and the United Kingdom (Theierstein & Wilhelm, 2001). Another discussion relates to whether business incubation initiatives are publicly or privately funded. Public business incubators often focus on creating jobs, contributing to a community, or using unoccupied buildings, whereas university-based business incubators have a clear-cut focus on commercializing scientific research. The business model for private business incubators can vary, but the most frequently used approaches are either directly investing in the incubated companies or generating income from rent or services (Ireland & Lumpkin, 1988). Dechang, Qiang, and Hongwei (2010) have claimed that the main establisher of business incubators has been public government-driven organizations but that this trend is changing as more private organizations enter the business incubation field. Regardless of this changing trend, studies have shown that 79% of business incubators worldwide are still sponsored by academic institutions, governments, or economic development organizations (Al-Mubaraki & Busler, 2010a). According to Abetti (2004), this number is even higher; he claimed that many published studies have stated that more than 90% of all business incubators around the world operate as public business incubators

because they are dependent on funding from sponsors that are often central, regional, or local governmental organizations, including universities and other educational organizations.

Other researchers have argued that business incubators should be categorized based on their objectives or stakeholders, as the concept of business incubators is turning out to be more of an umbrella word (Aernoudt, 2004). Theierstein and Wilhelm (2001) supported the idea that difference between business incubators also depends on the infrastructure (business incubation program) of a business incubator and how it is geared toward its specific clientele. Aernoudt's (2004) typology (see Table 1) provides a clear overview of a rather wide variety of business incubators, all with different philosophies, target groups, and objectives.

TABLE I
Typology of business incubators

	Main philosophy: dealing with	Main Objective	Secondary	Sectors involved
Mixed incubators	Business gap	Create start-ups	Employment creation	All sectors
Economic development incubators	Regional or local disparity gap	Regional development	Business creation	All sectors
Technology incubators	Entrepreneurial gap	Create entrepreneurship	stimulate innovation, technology Start-ups and graduates	Focus on technology, recently targeted, e.g. IT, speech-, biotechnology
Social incubators	Social gap	Integration of social categories	Employment creation	Non profit sector
Basic research incubators	Discovery gap	Bleu-Sky research	Spin-offs	High tech

Table 1. Typology of business incubators (Aernoudt, 2004).

From Table 1, we can see that each type of business incubator has a different philosophy and objective. For example, a mixed incubator supports start-up companies in order to create jobs, so it does not focus on specific industries. Economic development incubators are likewise not focused on specific industries or sectors; the focus in this type of business incubator is to create economic development on a regional level via creation of businesses. On the other hand, basic research incubators and technology incubators focus on specific sectors, such as new technology-based firms (NTBFs), as their objectives are to create and support innovative start-up companies based on high-technological products, services, or

solutions. These types of companies could also be spin-offs from university research groups or companies founded by university students. Therefore, the philosophy of these types of incubators is to foster entrepreneurship at universities or other areas where research and technology can be commercialized. Lastly, the social incubator focuses on the creation of nonprofit organizations and employment.

Al-Mubaraki and Busler (2011) have also provided a summary of different business incubation goals, services, and types, which they created based on case studies of 10 business incubators in developing countries (see Table 2). Al-Mubaraki and Busler's (2011) table is not, however, divided into the different types of business incubators and linked to what specific services they offer; Table 2 is merely as a summary of their case study findings and thus not categorized in the same manner as Aernoudt's (2004) typology. Nevertheless, Table 2 still provides an overview of the diversity of the many types of business incubators that exist and their goals and services. For example, Al-Mubaraki and Busler (2011) introduced manufacturing and web-related incubation and also mentioned encouraging minority or women entrepreneurship or providing complementarity benefits for the sponsoring organization, which are types of business incubators and goals not covered by Aernoudt (2004). Table 2 also shows the many services that business incubators can offer their tenants, ranging from offering easy access to bank loans and investors to helping incubatees with business etiquette, presentation skills, and manufacturing. This tells us that business incubation programs can consist of many different elements, and both Aernoudt's (2004) and Al-Mubaraki and Busler's (2011) wide-ranging typologies depict how the business incubation field and industry have expanded and how it is difficult to categorize business incubators as they often are a combination of different types. For example, science parks are often a combination of a technology incubator and a basic research incubator; according to Westhead (1997), a science park is only a basic research incubator with the purpose of creating new discoveries, whereas Hansson (2007) has argued that science parks are "designed to encourage the formation and growth of knowledge-based business and to support a management function that is actively engaged in the transfer of technology and business skills to the organizations on site."

Incubators Types	Incubators Goals	Incubators Services
Technology incubator Incubation of Services Incubation of Mixed – use type Manufacturing incubation Web- related business incubation Incubation of Community revitalization	Jobs Creation in l community Entrepreneurial climate community's and value it attributes to entrepreneurship Provide the business in the community Building/accelerating growth local industry Diversifying local economies Encouraging minority or women entrepreneurship Opportunities of analysis of the spin-in/spin-out business Commercializing technologies to support the entrepreneurs in the community Generating complementary benefits for the sponsoring organization Revitalizing distressed neighbourhood Transfer the people to the work	Support the business Activities of Network with others programs Advise to the Market Access to Internet Services share with office and administrative Easy access to bank loan Linkage to higher education resource Help with accounting/ financial management Access to loan funds Access to guarantee Loan programs Linkages to strategic Partners Help with presentation skills Shadow advisory boards/mentors Human resources/personal development/ training Linkages to angel or venture capital investor Help with business etiquette Comprehensive business training program Assistance with E-commerce Specialized equipment/facilities Business management process/customer/ assessment Services/inventory/ management Federal procurement assistance Commercializing Technology Management team identification Assistance with manufacturing practices, process and technology General legal services International trade assistance Intellectual property management

Table 2. Summary of goals, services and types (Al-Mubaraki & Busler, 2011).

Furthermore, Peters, Rice, and Sundararajan (2004) and Von Zedtwitz and Grimaldi (2006) have pointed out that whether the business incubator is nonprofit, for profit, university based, independent, or, for example, regional has an impact on the business incubator and the services and support it offers, thus also on the incubatees. Noltes, Masurel, and Buddingh' (2013) even introduced a new type of business incubator, namely a green business incubator (GBI), that focuses on the development of green companies owing to the increased interest in sustainability in business. Autio and Klofsten (1998) concluded that the local context in which the business incubator

operates influences the objective of the business incubator or the SME support, which also is illustrated by the activities that are embarked upon.

According to Barbero, Casillas, Ramos, and Guitar (2012), the performance of a business incubator depends on its objectives and purpose, and they divided incubators into four categories: basic research incubators, university business incubators, economic development incubators, and private incubators. Chan and Lau (2005) have argued that business incubators should strive to target their support services to the stage of development at which the incubatees are situated. This is needed as high-tech start-up companies especially tend to focus on research and development of their products in the first year of the start-up phase, whereas attention toward sales and marketing is given at a later stage. Likewise, the start-up phase might differ for other types of incubatees, and thus it can be assumed that Chan and Lau (2005) called for a more flexible business incubation process and program.

Based on the introduction to the several types of business incubators discussed in the literature, it seems imperative to have a clear definition and typological understanding of what sort of business incubator is the subject of research, as clearly different objectives can be reflected in the types of services, assistance, and screening practices that are designed to support the incubatees. Thus, the following section digs deeper into the business incubation concept before a clear definition is introduced for this dissertation.

2.2 Definitional discussion

The concept of business incubators has been around for decades, and it is therefore natural that its denotation has changed over time as the evolution of the research field has differentiated itself from the neighboring research fields of entrepreneurship, innovation, and economic development. This is reflected in academic journals that publish articles about business incubators, such as *Economic Development Quarterly*, *Journal of Business Venturing*, *Journal of Technology Transfer*, *Technovation*, *American Journal of Small Business*, *Small Business Economics*, and *Journal of Developmental Entrepreneurship*. A discussion of the definition of business incubators is thus needed. This definitional discussion of the concept of business incubation draws on literature from different geographical areas of the world. The author

acknowledges that there is no clear geographical focus in the literature used in this discussion because the purpose is to broadly explore the concept of business incubators and identify a common definition of what the concept of business incubation includes that can be applied throughout the dissertation. Furthermore, the concept and phenomenon of business incubators and business incubation seem to be quite similar in most parts of the world, and as stated by Al-Mubaraki and Busler (2010b), "Business incubators are being used as economic development tools by nearly every country" (p. 345).

The first officially identified business incubator is considered to have been established in New York in 1956, when the general public and local authorities modernized a closed-down factory and transformed it into a business incubator for small companies (Lewis, 2001). It is also in the United States, researchers believe, that the emergence of business incubators started, peaking with the establishment of Silicon Valley in the southern region of the San Francisco Bay Area in Northern California, known for creating a dynamic environment that nurtures the interlink between academic research/knowledge, venture capital, and development of entrepreneurs and start-up companies. The formation of Silicon Valley is considered to be a best practice example that has inspired other countries to create similar entrepreneurial constellations. In Europe the first business incubation initiative was introduced in 1984 by the European Commission and was named the business innovation center, and since then the phenomenon of business incubators has emerged as a field of interest for many researchers (Grimaldi & Grandi, 2005).

Theierstein and Wilhelm (2001) have referred to business incubation as a regional development trend with specific reference to the spread of incubation, technology, and innovation centers throughout Germany and Austria, inspired by the hub of high technology–based companies in Silicon Valley. Similar tendencies have been verified in China, where the first business incubator was introduced in 1987 and the number has since grown to 670 as of 2008 (Dechang et al., 2010). Ahmad and Ingle (2013) stated that there are around 900 business incubators in EU. This evolvement and spread of the business incubation phenomenon has challenged the traditional understanding of business incubators, originally defined as organizations that provide office facilities, administrative services, and professional advisors to entrepreneurs at

the same location (Allen & McCluskey, 1990). Mubaraki and Busler (2013b) defined business incubators as an "economic and social development entity designed to advise potential start-up companies, help them to establish, and accelerate their growth and success through a comprehensive business assistance program" (p. 362). Despite the meaning of incubation in the health care perspective, Hannon (2004) has stressed that business incubators should not be considered "survival schools," as the purpose should be to ensure growth of the incubatees and not just survival. Von Zedtwitz and Grimaldi (2006) defined business incubators as "service firms that support entrepreneurs in at least four of the following five areas: office space, office management, funding and venture capital, coaching and mentoring, and network services" (p. 462) whereas Phan et al. (2005) introduced the concept of science parks in their definition of business incubators, referring to them together as an institution: "We define these institutions as property-based organizations with identifiable administrative centers focused on the mission of business acceleration through agglomeration and resource sharing" (p. 167).

It is questionable whether the two different terms (business incubators and science parks) can be fully merged; some researchers in the field appear to clearly distinguish between their definition and purpose. For example, Westhead's (1997) understood science parks as being related to scientific research with the purpose of creating an environment that can transform "pure" research into commercial production. Cheng, Oort, Geertman, and Hooimeijer (2013) have argued that science parks provide their tenants with advantaged access to direct knowledge via universities and research institutes, and thus science parks are considered to be particular useful for high-tech entrepreneurs and companies looking for resources and partnerships at these institutions. The focus on universities and research institutes is also predominant in Squicciarini's (2009) definition of science parks as organizations that facilitate movement of technologies and knowledge between universities/research institutes and companies and furthermore assist NTBFs in their development. Thus, it seems clear that science parks by definition are closely connected to universities and/or other research institutes and target a specific group of entrepreneurs and companies with high technology– and research-based needs, elements that differ from general business incubators. Phan et al. (2005) argued that there is a difference in the elements of, e.g., services and screening processes for entrepreneurs between science

parks and general business incubators that deal with non-research-based start-up companies. Furthermore, the difference between scientific research–based start-up companies and non-research-based ones – e.g., the patent procedure and long research and development (R&D) process – cannot be overlooked, although there are many similarities, such as targeting the entrepreneurial challenge of bridging the gap between the formation of a new business idea and the attempt/implementation stage of launching an entrepreneurial venture, as argued by Grimaldi and Grandi (2005). For this dissertation, science parks are seen as a subsection of business incubators as long as they operate within the definitional boundaries presented at the end of this section. The discussion of science parks is not the only one that has challenged a clear understanding of what business incubators are. For instance, Abduh, D'Souza, and Burley (2007) have referred to business incubators also as business incubation programs, defined as "an enterprise development strategy aimed at accelerating the process of formation, development, and survivability of new enterprises in community" (p. 74). This indicates that a business incubator can be a program that has no need for physical office facilities yet still offers subservices – e.g., a physical office space – as part of other facility-related services. Whether an initiative must offer physical office space in order to be considered a business incubator is the topic of an ongoing discussion. A virtual understanding is represented in the comparison of business incubators with a "natural incubation" process taking place in specific communities (Butler & Greene, 1996) and directly challenging the established perspective of business incubators as being something collective with physical and tangible elements. Erikson and Gjellan (2003) also supported this perspective by using the term "incubator" to describe a conceptual method facilitating an entrepreneurial learning program for university students. Lewis, Harper-Anderson, and Molnar (2011) dealt with this discussion by stating that "incubators with walls" are business incubation programs with office facilities and on-location management of the business incubator. However, they also stressed that the focus remains on the business assistance services provided to the entrepreneurs, and not just the office facilities. "Incubators without walls" are then the same as virtual business incubators, which do not offer office facilities. The difference between virtual versus physical (with or without walls) business incubators can also be debated in relation to the network-oriented understanding that entrepreneurs' success is interlinked to the formal and

informal networks they develop during their entrepreneurial process, which some researchers have found to be the most important value-added element of business incubators (Hansen, Chesbrough, Nohria, & Sull, 2000). The question, then, is how a network-oriented element can function without the physical shared office space considered to facilitate networks among entrepreneurs.

The different understandings and definitions of business incubators continuously challenge the more traditional understanding of business incubators, thus leaving room for researchers to argue for an understanding of the concept as something "virtual" (Bruno, 1998), or as something dynamic that can move from place to place, such as a "business incubator on wheels" (Agostino, 2009), or as a corporate strategy, where the term "business incubation" is used by Eshun (2009) to describe how larger corporations can use the concept of business incubators to become more entrepreneurial and innovative throughout their organization. Cooper and Park (2008) have used the term "incubator organization" to describe an organization/company in which the entrepreneur gains professional knowledge prior to becoming an entrepreneur. Other organizations even perceive themselves as incubation technology innovation centers (ITTs) as they promote and offer counseling for newly established companies and entrepreneurs despite offering no physical office space (Theierstein & Wilhelm, 2001). The term "centers" is sometimes used to define the business incubator as more of an organization than a facility. For example, Adegbite (2001) has referred to a business incubation center as "an organization that facilitates the process of creating successful new small enterprises by providing them with a comprehensive and integrated range of service" (p. 157). In general there seems to be a common understanding that some sort of service is provided to the clients of business incubators, but it is important to note that this service should be offered in combination with office facilities in order for the organization to be defined as a business incubator. According to Al-Mubaraki and Busler (2010a), business incubators can differ in the services they offer their clients, i.e., entrepreneurs. However, they also stressed that a business incubator is a physical phenomenon that provides access to rentable flexible office space in combination with business support services and equipment that is shared among the tenants.

Zhang and Sonobe (2011) stated that the clients/tenants of business incubators are start-up companies, hence entrepreneurs, and that they have to apply for admission (go through a screening process) before they can enter a business incubator. When accepted, the entrepreneurs are offered shared office facilities, workshops, and business assistance services. Lewis et al. (2011) defined a business incubator as "a multitenant facility with on-site management that directs a business incubation program" (p. 15) and the business incubation program as a program created to accelerate the progress of entrepreneurial companies via an assortment of business support services provided by the business incubation management. Additionally, the objective of the business incubation program is to generate successful entrepreneurial companies, as stated by Hannon (2003), who argued that effective business incubation is about constructing an encouraging learning environment where new companies are provided with an opportunity to reach their potential by using the supportive services offered by the business incubator. One of the most commonly used definitions of business incubators stems from Dilts and Hackett's (2004a) systematic review of business incubation research, which also stressed that business incubators should offer their clients office facilities in combination with some level of business support; they stated that *"a business incubator is a shared office-space facility that seeks to provide its incubatees (i.e. "portfolio-" or "client-" or "tenant-companies") with a strategic, value-adding intervention system (i.e. business incubation) of monitoring and business assistance. This system controls and links resources with the objective of facilitating the successful new venture development of the incubatees while simultaneously containing the cost of their potential failure."* (p. 57).

A study of business incubators in Denmark concluded that they are a heterogeneous group, and it can be hard to see common objectives and goals among them (Oxford Research, 2008). According to Dilts and Hackett (2004a), the lack of a clear definition creates a problematic situation where it becomes difficult to create a systematic research review of business incubators that can be generalized upon. Accordingly, from the definitional discussion presented in this chapter, it is clear that there are different considerations of what a business incubator is; however, it is generally understood that business incubators consist of many of the same elements, on which this dissertation bases its definition.

For the purpose of this dissertation, a business incubator is a geographical agglomeration that provides entrepreneurs (so-called incubatees) with flexible and affordable office facilities/space, business support in the form of counseling or training, access to some sort of entrepreneurial network, and administrative support, with the purpose of helping the entrepreneurs and their companies to survive and grow within a limited period of time, which the business incubator determines. The business support, network, and administrative services are offered and packaged in a process referred to as the business incubation program. Before entrepreneurs can enter a business incubator, they must go through a selection process in order to determine whether they meet the business incubator's standards. This proposed definition also acknowledges and embraces the importance and relevance of science parks and the research conducted within this specific area of the overall business incubation field. As Ratinho and Henriques (2010) have stated, science parks and business incubators can be researched together because their definitions have numerous common features, goals, and characteristics, and furthermore, empirical research in the field does not seem to make a clear distinction between them. Hence, according to the definition for this dissertation, science parks, as well as other type of business incubators, are considered specific sorts of business incubators as long as they have all of the abovementioned business incubation elements.

Now that the different varieties of business incubators have been discussed and a clear definition of the term "business incubation" has been set forth, the following chapter identifies the research focus and contribution of the dissertation.

3. Research focus and contribution

As the upcoming literature review maps out in next chapter, the field of business incubation research has come far since its origin in the late 1970s. The development of the field has, to some degree, focused on whether business incubators actually have an impact on their clients and thus on economic development. Since the first assessment studies were introduced by branch organizations, the measurement of how successful business incubators are in terms of high survival rates and increased regional development via job creation has influenced the business incubation field. The fact is that the process of conducting assessment studies of business incubation initiatives is very complex, and studies need to be longitudinal in order to produce dependable results. Modena and Shefer (1998) even argued that it takes 15–20 years to investigate whether business-friendly programs have an impact on employment and economic development. This is not, however, an issue for this dissertation as it is not an assessment study measuring performance or economic impact of the incubatees or incubators. The longitudinal focus needed in assessment studies often collides with the short-term goals of the initiators and policy makers who order the assessments. Despite these arguments and the fact that researchers emphasize the methodological challenges of evaluating business incubation initiatives, there still seem to be ongoing impact-related discussions within the field of business incubation. However, the fact is that there have been no valid conclusive studies conducted in this manner (Schwartz, 2008; Yu & Nijkamp, 2009), and thus the field contains studies and research that have supported the impact of business incubators (e.g., Mubaraki & Busler, 2012) and, by contrast, some that have concluded that business incubators have no significant impact (e.g., Ratinho & Henriques, 2010). As argued by Ahmad and Ingle (2013), business incubators are here to stay, and there is not much to gain from questioning their existence by conducting more assessments and impact-related research. They proposed that the research field should instead focus on investigating the impact of the business incubation process and the processes that contribute to the success of entrepreneurial companies. Other, newer research has argued that there remains a theoretical gap in the literature that could explain why business incubators should exist and how they benefit their clients (Böhringer, 2006). It is therefore reasonable to challenge existing business incubation initiatives as they might lack an

understanding of where the value of their concepts lies (Abduh et al., 2007) because there seems to be a mismatch between supply (business incubators' support services) and demand (the needs and expectations of the incubatees) (Bruneel, Ratinho, Clarysse, & Groen, 2012). Hence, this mismatch raises the question of whether business incubation managers and initiators really understand their clients, and furthermore, these indications suggest that we still know little of how entrepreneurs are actually influenced by business incubators.

One reason for the lack of understanding of how incubatees are influenced by participation in business incubators could be that the studies that have been conducted on business incubators, to this researcher's awareness, have not made use of emerging entrepreneurship research and thus the newly developed theories of entrepreneurs and their entrepreneurial process and development when investigating business incubators and incubatees. Thus, one could assume that there is an unutilized research potential to explore the perspective of entrepreneurs inside the business incubators, to try to understand them and their interaction with the incubators and the different elements of the incubation program, based on what we already know about entrepreneurs and their entrepreneurial process from the emerging entrepreneurship literature, and to then discuss it in relation to the body of knowledge on business incubation research.

Based on the above highlighted observations, the following research question has been formulated:

"*What elements in the business incubation process are perceived as most influential by incubatees, and how do incubatees perceive being part of a business incubator as influencing their entrepreneurial process and development?*"

By investigating the proposed research question and focus presented above, this dissertation contributes to the business incubation field with new insight into the perspective of entrepreneurs and their interaction with business incubators so we can learn more of how incubatees perceive the influence of business incubators and their programs. This is an attention area that researchers in the field calls upon, as studies of business incubators should take into account the perspective of the entrepreneurs because the programs are designed to support them and their development, and thus

more research about the interaction between business incubators and incubatees has been called for by Voisey, Gornall, Jones, and Thomas (2006), Ahmad and Ingle (2011), and Stephens and Onofrei (2012). A few researchers, e.g., Gullander (2006), Xu (2010), Meru and Struwig (2011), and Aslesic and Slavec (2012), have strived to provide the research field with a better understanding of how incubatees experience the business incubation process from the entrepreneurs' perspective. However, none of these studies have provided knowledge of how the business incubator might influence the incubatees and their entrepreneurial process and development, but they have indicated entrepreneurs' satisfaction with and the value of business incubation programs. Furthermore, their conclusions have also suggested a mismatch between what the incubatees claim is essential for them and the business incubation services they actually use during the business incubation process. Thus, there is a potential to strengthen this emergent research focus in the field of business incubators by investigating the perspective of the incubatees. Accordingly, this dissertation furthers the development of the field by concretely focusing on the perception of the incubatees. Furthermore, this dissertation also strives to understand how incubatees might perceive the influence of business incubators, instead of focusing only on measuring satisfaction among incubatees, as prior newer research has done. Lastly, this dissertation also incorporates a theoretical understanding of how entrepreneurs (incubatees) might think, learn, and develop during their entrepreneurial process while participating in business incubation programs, which is achieved by drawing on theories from the entrepreneurship literature.

That studies from the entrepreneurs' point of view in a business incubation context are de-emphasized in the business incubation literature is also reflected in the fact that business incubation research using entrepreneurship theories seems underrepresented in the fragmented field of business incubation (see Appendix 1), which is dominated by economic development studies. This focus on economic development studies might persist because when business incubation programs are launched, regular assessment studies of the programs are launched simultaneously, and researchers are often expected to analyze and sometimes conduct these studies, which focus on the macroeconomic impact of business incubators in relation to regional and national economies. This might be one of the reasons why the field of business incubation seems closely linked to regional and economic development

studies, which can often result in research deprioritizing the entrepreneurs who use the business incubators, as highlighted above and in the upcoming review of the existing literature on business incubators.

Accordingly, the overall aim of this dissertation is to provide the field of business incubation with new insight into how business incubators and the elements they offer their clients (entrepreneurs) might influence the entrepreneurial process and development of incubatees. The secondary aim of this research is to methodologically focus on the perception of the incubatees and investigate them closely on a microlevel as they are influenced by different support elements from a business incubation program. A further aim of this dissertation is to introduce and discuss how entrepreneurs and thus incubatees think, develop, and might be influenced, based on a theoretical understanding from entrepreneurship literature, which has so far been deprioritized in the field of business incubation. This area therefore needs to be investigated further as studies of business incubators without a theoretical understanding of the entrepreneur seem to make little sense, as business incubators would be nonexistent without entrepreneurs.

Based on the proposed research question and argumentation for the contribution of this dissertation to the research field of business incubation, the following research objectives have been identified as follows:

- To identify how entrepreneurs might perceive the development of their entrepreneurial process over time at a business incubator
- To analyze what elements of business incubation programs the incubatees might perceive as significantly influential
- To explore and discuss how entrepreneurs might perceive the influence of business incubators based on theoretical considerations from both entrepreneurship and business incubation literature

4. Business incubators

As argued earlier, the development of the business incubation research field has, to some degree, been framed by extensive focus on assessment and impact-related studies, but other areas of the literature have also focused on the importance of the relationship between business incubation managers and the incubatees as well as how the different elements of business incubation programs and the network of the business incubators create value for the incubatees. Therefore, in order to understand how we can further develop the business incubation research field, it is necessary to investigate the development of the field in the existing literature. As the field is considered to be quite fragmented (Hackett & Dilts, 2004a), this chapter is divided into the main subjects that the literature has covered.

4.1 A divided field – studies of effect and impact

Studies of business incubators have been carried out since the early 1970s, and a quantitative assessment study carried out by Money (1970) about American science parks is considered one of the first original contributions to the research area; it also sets the agenda by concluding that companies inside business incubators performed better than companies outside in terms of higher turnover and better survival rates (Autio & Klofsten, 1998). The matter of survival rates is a fundamental discussion within the field and has been presented in many assessment studies (e.g., Money, 1970; Philips, 2002; Pena, 2004; Westhead & Storey, 1992). The use of survival rates to measure the impact of business incubators might be influenced by the fact that 90% of business incubators are to some degree publicly funded (Abetti, 2004), and the management of business incubators therefore needs to show the policy makers who have granted this funding that they are getting a return on their investment. Survival rates for entrepreneurs and start-up companies are considered one of these indicators. This situation might mean that some business incubation research has been conducted mainly for the purpose of assessing public business incubator initiatives and therefore has not been based on what would contribute to the overall research field. Nonscientific or nonacademic assessment studies are usually carried out by branch organizations such as National Business Incubation Networks in the United States and European Business Incubation Network in Europe. These

practitioners' studies often claim that survival rates of incubatees are over 80% (Bearse, 1998). Other studies have given less optimistic survival rates of 55% (Dilts and Hackett, 2004a). Bager, Hancock, and Madsen (2004) stated that survival rates of new start-up companies are usually considered to be somewhere between 25% and 40% depending on different macroeconomic factors.

Comparing entrepreneurs located both within and outside business incubators is, in theory, an appealing evaluation model as it highlights the difference between the two groups and hence shows the direct impact of the business incubator (Westhead & Storey, 1992). Yet this method has been criticized since creating a representative control group of companies and entrepreneurs located outside of business incubators is difficult, and the use of screening practices creates a selection bias, which is notable (Sherman & Chappell, 1998). Likewise, the use of survival rates to evaluate how well business incubators perform has also been criticized based on the same selection bias because a comprehensive screening and selection process is used to select the best start-up companies and entrepreneurs for the business incubation programs. Therefore, researchers have argued, survival rates are affected as only the most promising companies and entrepreneurs are accepted into the business incubators. Hence, the companies and entrepreneurs in the business incubators are not actually representative of or comparable to the companies and entrepreneurs to which they are compared (Udell, 1990). Bearse (1998) compared this issue to the selection of students for admission to Harvard University by asking whether Harvard's success is a result of what Harvard teaches to its students or of Harvard's selection of only the best students who will be most likely to succeed. This discussion is often ignored in assessment studies; however, some have taken this discussion further. Philips (2002) stated that one way of getting around the screening bias is to use a control group of rejected companies and entrepreneurs to compare to those that have been accepted into the business incubator.

Other studies have mentioned alternative ways of measuring the impact of business incubators, e.g., *rotation* (Aernoudt, 2004) and *graduation* rates (Peters et al., 2004), as ways of showing how business incubators replace existing ventures, as old ones move out because of graduation or expansion. As with measuring survival rates, the use of graduation rates as an evaluation criterion is also questionable because it

depends on factors such as the deadline for when a company exits from the business incubator, as incubation phases vary. Measuring business incubation success based on the number of graduated companies can be misrepresentative because all of the incubatees have been through a selection process and thus do not compose a random sample (Zhang & Sonobe, 2011). Furthermore, research has shown that business incubation managers claim that only well-performing graduate companies are included in graduation rate–related studies (Peters et al., 2004). In addition to this discussion, it can be questioned whether graduation rates are related to venture growth, which should be one of the main objectives for business incubators. However, as argued by Bergek and Norrman (2008), assessments often do not consider differences in the business incubators' strategies, which can be reflected in, e.g., the screening process of potential entrepreneurs. Lindelöf and Löfsten (2003) applied an on- and off-park (science park) approach, which they acknowledged had its limitations because of the methodological challenges mentioned above. Nevertheless, their results showed that the incubatees seemed more motivated to develop and grow than the control group of entrepreneurs outside of the science park. Thus, different assessment studies have emphasized different success and failure factors for entrepreneurs and companies in business incubators (see Autio & Klofsten, 1998; Bøllingtoft & Ulhøi, 2005; EBST, 2008).

Ahmad and Ingle (2013) stated that there are two camps of business incubation assessment studies, one that claims to produce evidence that supports the positive effects of business incubators in terms of reducing the risk of starting entrepreneurial companies, and one that believes that business incubators do not make any difference and are thus a waste of public spending. Garibay, Hollander, Khan, O'Neal, and Turgut (2013) stated that business incubators are an important research focus, especially in a postrecession economy; however, they also stated that not much is known regarding the actual economic value of the business incubators in relation to the economic performance of incubatees and thus the effect they have on the region they are located in. In Al-Mubaraki and Busler's (2013) review of how business incubators can be used for economic development, they stated that business incubators have a positive impact as they can support regional development via job creation, assist new companies in growing, and promote and boost technological innovation and industry improvements.

By contrast, Ratinho and Henriques (2010) concluded that business incubators generate economic growth in converging economies only to a modest degree. Al-Mubaraki and Busler (2013) argued that the extensive launch of business incubators around China in the 1990s has had a significant role in transforming the country from its socialist society to the market economy we know today, as business incubators have been used to promote innovation culture and commercialization of technology and research. Other researchers have stressed that simply placing entrepreneurs in business incubators does not guarantee success, and apart from the flexible office spaces and administrative facilities, the concept of business incubators has been called into question (Hansen et al., 2000). Earlier studies concluded that most entrepreneurs would have started their business even without the assistance of a business incubator, up to 87% in some cases (Allen & Rahman, 1985).

Theierstein and Wilhelm (2001) concluded that there is a lack of proof that business incubators have a noteworthy impact on lowering unemployment; they also concluded that the jobs created by business incubators would have been created by other companies and entrepreneurs regardless. On the other hand, Peters et al. (2004) claimed that entrepreneurs and start-up companies are directly affected by the screening process, services, and network offered by the business incubator but that the number of graduates from business incubators can be considered only a rough indicator of the business incubators' ability to accelerate the entrepreneurial process of the incubatees. Pena (2004) stated that the more entrepreneurs learn, including from business incubators, the longer they stay in business. This is concluded based on an analysis of 114 start-up companies, which showed that the only significant elements related to the companies' growth were the management training and assistance services offered by the business incubators.

According to Hansson (2007), science parks, thus also business incubators, have been evaluated based on two approaches. One approach strives to measure the effects on an economic scale by investigating incubatees' growth in profit and employees, the number of new started companies, etc. The other approach is based on different forms of comparable case studies that investigate the internal procedures of the incubatees and their interaction with the business incubators. Siegel, Westhead, and Wright (2003) suggested that in order to answer research questions about the effects

of business incubators and empirically explore the phenomenon in general, researchers should use a mix of quantitative and qualitative methods in combination with archival and database data. Schwartz (2008) has been more direct in his perspective, claiming that regardless of much of the literature concerned with the impact and importance of business incubators, there are no final conclusive studies as to whether business incubators are actually effective economic development tools for supporting entrepreneurial companies. Zhang and Sonobe (2011) stated that the business incubation literature has not yet presented studies that can explain a connection between the resources used in the business incubator and the output it should generate, and Yu and Nijkamp (2009) have called for much more research in relation to how experimental methods can be used to provide answers about the effects of business incubators, as the current body of evaluation and assessment literature falls short in choosing suitable methods, as this statement documents: *"Despite the worldwide adoption of business incubators by policy makers as the Holy Grail for entrepreneurship and business development, solid evidence of the advantages of business incubators in enhancing the competitiveness of client firms remains elusive."* (p. 6).

Clearly, the enduring discussion within the field of business incubators is concentrated around their ability to provide conditions for success and networks to entrepreneurial companies as a means for better economic growth of a community, region, or nation. All of this is summed up by Aernoudt (2004), who formulated what a good incubator is:

A *good incubator has a big enough number of new, young enterprises with growth potential, an optimal rotation rate, a high survival rate of graduates that continue to do business outside the nurturing premises, a positive impact on the perception of entrepreneurs and on the creation of an entrepreneurial culture, strong links with industry, R&D centers and universities and finally a structure facilitating access to financial markets*. (p. 128).

In summary, one of the founding research areas of the business incubation field has been concentrated on the effects and impact of business incubators and particularly on whether they work in relation to a number of economic hard measures. In this sense it can be concluded that despite the many assessment and impact-related

studies conducted, no final conclusive studies have determined whether business incubators actually have an economic impact on the incubatees or the geographical area that the business incubators are situated in. Thus, it can be argued that future business incubation research should focus elsewhere.

4.2. Business incubation managers

Another area of business incubation research that has gained wider interest is that of the role and importance of the business incubation manager. According to Hannon (2003), the performance and effectiveness of a business incubator is very much linked to the management and leadership capabilities of the business incubation managers because they have to play many different roles, as depicted in Table 3.

Professional business consultant	Project manager	Hard-nosed buyer
Business trainer	Policeman	Persuasive sales rep
Free legal adviser	Everybody's agony aunt	Font of all knowledge
Computer expert	Housekeeper	Endless source of contacts
Health and Safety officer	Trusted counsellor	Rent collector
Social worker	Ambassador to all	Arbitrator

Table 3. The many roles of the incubator manager (Hannon, 2003).

From Table 3 we can see that the business incubation manager has many functions and thus needs to have a diverse set of professional skills. According to Hannon (2003), business incubation managers might need to switch between the different positions as sometimes they have to provide the incubatees with business advice as a professional business consultant while also holding the project manager position and thus making sure the business incubator is running smoothly. The business incubation manager might also have to collect rent and recruit new incubatees, duties listed under "hard-nosed buyer."

Adegbite (2001) defined the role of business incubation managers as professionals who monitor the incubatees closely in relation to their business plans and who furthermore make sure that the business incubator is operating in a professional manner, with the objective of making the business incubator self-sustaining over

time. This is supported by Patton, Warren, and Bream (2009), who argued that via the business incubation managers, the business incubation process becomes an iterative process to review business plans/progress and assess skills and motivation of the incubatees, and that the relationship between the incubatees and business incubation managers is of great importance, especially in the early stage of the business incubation process. However, according to Honig and Karlsson (2010), the role of the business incubation manager and the network provided by the business incubation managers might not be as important as assumed; their study revealed that only 6% of the incubatees identified the business incubation managers as people that had introduced them to new influential contacts.

Rice (2002) argued that business incubation managers should assist and guide the entrepreneurs as if they were "quasi-partners," explicitly emphasizing the importance of the relationship between the business incubation manager and the incubatees in the interdependent coproduction of a value-adding business incubation process. Consequently, entrepreneurs should be ready and willing to enter into a coproduction process. In particular, the individual relationship between the business incubation manager and the incubatees is what Ahmad and Ingle (2011) have highlighted as being the central element in the concept of business incubation. This is concluded based on a 6-month single-case study of a university incubator in Dublin. Furthermore, it is argued that business incubation managers should focus on creating highly valuable connections with the incubatees. However, in line with the argumentation by Rice (2002), Ahmad and Ingle (2011) also stressed that without active involvement of the incubatees, the coproduction between the business incubation manager and the incubatee ceases to exist. And what comprises a beneficial relationship can be hard to define as it often consists of a set of unspoken rules and expectations. This also applies to the different types of relationships formed between the incubatees inside the business incubator, which can both negatively and positively influence the incubatees' perception of the business incubator, the other incubatees, and the business incubation manager (Ahmad & Ingle, 2011). According to Zhang and Sonobe (2011), the educational level of the business incubation managers might be of importance for the business incubation program as highly educated managers can attract knowledgeable lecturers to the program and introduce incubatees to potential partnerships or customers. Nevertheless, their research

showed that it has a lesser degree of importance than expected. However, research has also shown that staff of publicly funded business incubators often lack the management and financial skills needed when launching a new company, whereas private for-profit business incubation managers are more experienced and better at transferring their knowledge to the incubatees (Ahmad & Ingle, 2013). Hannon (2005) emphasized the need to establish high-quality management and training programs for business incubation managers, as the capabilities and skills of the business incubators might be linked to the performance of the incubatees and thus the business incubator, whereas Fukugawa (2013) showed that the technological skills of the business incubation managers is of importance in relation to the graduation rate of entrepreneurial companies from business incubators that focus on science- and technology-based companies. Therefore, Fukugawa (2013) argued, new incubatees need primarily technological knowledge from the business incubation managers instead of the spread of different skills that might seem relevant during the entrepreneurial process.

According to Scillitoe and Chakrabarti (2010), when business incubation managers fail to allocate enough time to interaction with incubatees, they can sacrifice the success of the entrepreneurs in the end. As stated earlier, the majority of business incubator programs rely on some sort of governmental support, which also puts business incubation managers into a challenging position as they have to balance the needs of their public sponsors while running an entrepreneurial- and business-oriented business incubator. According to Abetti (2010), this often leads to increased stress and a high turnover of business incubation managers, which could harm the abovementioned cocreation process. Alsos, Hytti, and Ljunggren's (2011) case study of two tech-business incubators concluded that the business incubators and thus the managers need to manage many different stakeholders, all with different goals and agendas, including the incubatees. In their study they identified different stakeholder strategies that the business incubation managers might apply. This view is supported by Aaboen (2009), who argued that it is not always clear who the customer of the business incubators is because they often strive to provide value to both the incubatees and the policy actors, the latter group often providing the funding for the business incubator. This public support might cause some of the processes of the

business incubator to become more bureaucratic than intended, which might not occur in privately funded business incubators that do not have to answer to policy makers.

Scillitoe and Chakrabarti (2010) have highlighted the importance of business incubation managers' knowing that there are limitations to what they can and cannot assist the entrepreneurs with. Often the managers have expertise in a business-related area and can offer a variety of support through their own partners or networks. On the other hand, managers often have limited knowledge of the technological aspects related to the incubatees' businesses. They can therefore best contribute to their clients' technological development by providing access to a pool of competent people with technological expertise instead of wasting too much time on understanding the incubatees' technological needs, which might slow down the entrepreneurial process and development (Scillitoe & Chakrabarti, 2010). Therefore, the entrepreneurs should also understand that business incubators can assist their company in both the business area and the technological area, but only if the incubatees make an effort to help the business incubation managers understand their company and its technological challenges in order to make sure that their company gets the right qualified help.

Hughes, Ireland, and Morgan (2007) focused on how business incubators originally applied a top-down management style, showing how business incubation managers would provide and offer services to entrepreneurs, whereas recent research has argued for the importance of showing incubatees how they can best use the network and business support at the business incubator. For example, Fang, Tsai, and Lin (2010) have stressed that business incubation managers should assist entrepreneurs based on the assumption that entrepreneurs' capabilities to obtain knowledge are critical for the success of the entrepreneur; they thus argued that the success of a business incubator depends on the managers' ability to motivate the incubatees to participate in the support and network activities offered by the incubator. Fang et al. (2010) therefore supported the top-down perspective that has dominated the business incubation field, as researchers and practitioners have approached business incubators from the perspective that services should be designed and offered to the entrepreneur.

In conclusion, this section has shown that much of the literature in the business incubation field has concentrated on the role of the business incubation manager. However, this research has not focused much on how incubatees and their entrepreneurial process and development actually change (or are perceived to change) by engaging with the business incubation manager while going through the learning process that should occur from participating in a business incubation program.

4.3 Elements of the business incubation process

As seen in Figure 1 below, many different elements are considered to be part of the business incubation process.

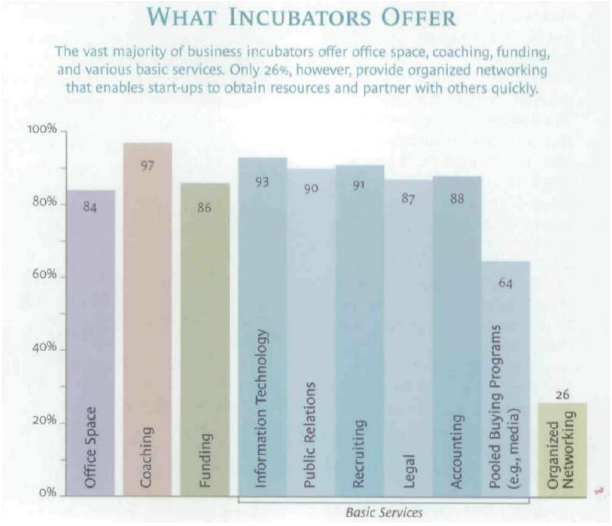

Figure 1. What incubators offer (Hansen et al., 2000).

From Figure 1, we also see that business incubators offers a range of different services, some of these considered basic services (information technology, public relations, recruiting, legal advice, accounting, and shared buying programs). Furthermore, business coaching and funding are also a large part of what business incubators offer the incubatees.

Accordingly, Dilts and Hackett (2004b) have argued that the primary value-added feature of business incubators is the structure and transfer of knowledge throughout the incubator network, thereby creating conditions that facilitate the incubatees and the commercialization of their innovations. Carayannis and von Zedtwitz (2005) have

argued that the business incubation process should offer office assistance, access to financial capital, access to networks, and entrepreneurial start-up support. According to incubatees, the biggest problems for business incubation programs are the lack of financial resources and shortage of entrepreneurial expertise (Al-Mubaraki and Busler, 2013), and Aernoudt (2004) has highlighted that entrepreneurial funding should be an integrated and crucial element of business incubation programs as seed and early-stage capital is vital for most entrepreneurs. However, not much research has been conducted about entrepreneurial finance in a business incubation context, which has been widely covered within the entrepreneurship literature. Thus, there exists a gap in this area of the business incubation field.

The screening process that the entrepreneurs encounter when they apply to a business incubator is also a distinct trait for the business incubation process. The screening process can have different forms, but all business incubators have some sort of process that can be considered a screening procedure. The divergent screening practices originate from the many different types of business incubators, as pointed out earlier. Procedures range from unstructured interviews to more bureaucratic, detailed procedures wherein the entrepreneurs and their team, business idea and model, sales projections, and financial statements are analyzed by the management of the business incubator (Udell, 1990). The screening process can have several purposes, but it is often practiced as a matching of expectations between the business incubator and the potential incubatees. Peter et al. (2004) stated that the screening practice of the entrepreneurs presumably generates higher graduation rates for the business incubator. This point of view is shared by other researchers who have claimed that the purpose of the screening process is to select the entrepreneurs and companies with the most potential and that this is just as vital as supporting them once they are part of the business incubator program (Aertsa, Matthyssens, & Vandenbempt, 2007).

Screening processes depend on the objectives of the individual business incubator, and Theierstein and Wilhelm (2001) have stated that there are different strategies for selecting entrepreneurs to business incubation programs, e.g., the champion method, the pragmatic method, and the business plan–focused method. The different approaches can directly affect the success of the business incubator. Alsos et al.

(2011) divided the incubatees into ideal and actual incubatees. Ideal incubatees are the entrepreneurial companies that the business incubators primarily target and predominantly want to have situated in the business incubator. Actual incubatees are then the entrepreneurial companies that are accepted into the business incubator in order to reach critical mass. This is needed for financial reasons but also in order to create a network of entrepreneurs inside of the business incubator. Tötterman and Sten (2005) implicitly expressed the importance of screening processes as not all entrepreneurs are capable of adjusting to business incubators and their environment, and these types of entrepreneurs should not be accepted. However, they also stated that business incubators often do not have the luxury of being too selective, which is especially the case for business incubators located in more rural areas lacking a critical mass of entrepreneurs with high growth potential.

The reference to screening practices in the business incubation literature illustrates the important role they play in the industry; the screening of entrepreneurs makes it possible to select the right entrepreneurs for the business incubators, which raises the question of whether the screening process is beneficial for the entrepreneurial process (which business incubators are meant to help) or the business incubator itself. So far, to this author's awareness, no study has tracked entrepreneurs during and after the screening process in order to see how it affects the entrepreneurial process.

Another significant element of the business incubation process is that of business support, or coaching as referred to by Hansen et al. (2000). Business support is considered to be an essential part of any business incubation program as the entrepreneurs who are interested in joining business incubators are also aware that they need guidance and business support in order to progress. In Xu's (2010) study, business and strategic planning (of the business support element) was applied by only 18% of the incubatees and was perceived to have a limited impact on their company whereas marketing/sales and employment were the most used and significant elements for the incubatees in relation to their development. Other areas, such as financial management, product development, and governmental purchasing, were not used much and were thus rated to have a limited value to the incubatees' development. Soetanto and Jack (2013) have argued that there is a tendency to assume that incubatees are a homogeneous group and that business incubators thus

can provide standard services and support. They argue that on the contrary, business incubation programs should consider how the incubatees might differ in innovative level and company development stage.

In general, research on business support seems to be underrepresented within the business incubation field, which is also argued by Ratinho, Harms, and Groen (2013), who studied the problems faced by 354 incubatees and how they sought assistance from the business incubator or external networks to solve these problems. From their study, it is concluded that even though the incubatees face recurrent problems, the business incubators do not seem to assist them extensively. Ratinho et al. (2013) furthermore claimed that there is a gap between the support needs of the incubatees and the support provided by the business incubators, which mainly assist the incubatees in writing and developing business plans, increasing their credibility, getting external advice, and obtaining finance. The most severe frequent strategic problems, such as introducing new products, accelerating time to market, gaining competitive advantage, and improving cash flow, are not challenges that the incubatees seek help from the business incubator to solve. In relation to these strategic challenges, some of the incubatees seek support outside of the business incubator, and others do not seek help at all. It is notable that in one study, only half of the incubatees seemed to believe that enhancing their entrepreneurial skills was a challenge they faced, and out of these, only 12% sought support from the business incubator in this matter whereas 21% sought assistance elsewhere (Ratinho et al., 2013). This is an interesting finding because business incubators are or should be designed to support incubatees in the entrepreneurial process and thus also provide them with needed entrepreneurial skills. These findings indicate that further research in this area could provide valuable insight into how the incubatees experience the business incubation process.

Honig and Karlsson's (2010) study showed that incubatees are more likely to write, revise, and use their business plan during the development of their entrepreneurial company, compared to companies that are not situated at business incubators. In the authors' opinion, this makes incubatees more bureaucratic; because *"the link between planning and efficiency is poorly established, we view this difference between incubated and non-incubated firms as highlighting a potentially constraining activity*

promoted and supported by the incubation managers or staff members" (p. 8). As is discussed later in this dissertation when elements of the entrepreneurship literature are introduced, the matter of applying business planning or not during an entrepreneurial process is a discussion that has taken up much space in the literature and to some extent relies on which entrepreneurial philosophy one has. From a business incubation point of view, it makes sense to embrace the planning paradigm as a business plan can benefit some entrepreneurs and also be used as a tracking mechanism for the business incubation managers. Nevertheless, it could also encourage a more bureaucratic process for some incubatees (that do not support the planning philosophy) and thus slow down their entrepreneurial process and development, as argued by Honig and Karlsson (2010). Another element that needs to be considered is that depending on the type of business the entrepreneur is launching, it might be more beneficial to create business plans for some entrepreneurs than others. For example, research-based companies that need to go through a long patent process might need to provide potential investors with a comprehensive business plan in order to attract capital for the business, whereas less-complex entrepreneurial processes might not need this, and in these cases, writing a business plan might slow down their development and traction. Therefore, this discussion is more complicated than it first appears as many different elements have to be considered before claiming that business planning creates bureaucratic entrepreneurs.

Lin, Wood, and Lu (2012) investigated how the service resources and capabilities of business incubators influence the service performance of the business incubator, and thus the success of the business incubator. They investigated how the sources of what they referred to as governmental policy resources (governmental support, funding, and tax policy), infrastructural resources (the location, business and technical services), and external support resources (collaboration with consulting and investment companies, universities, and other surrounding partners and organizations) might affect the integrated service capabilities (the basic services of business incubation including business support) and the operating and networking capabilities (network) of the business incubator. They concluded that the success of business incubators is highly dependent on the resources and capabilities of the operation, networking, and external support resources, but where more governmental policy resources are available, the business incubators are less likely to focus on high

levels of operation and networking resources. Interestingly, this research was based on a case study of one large business incubator in China, followed by a quantitative survey that was distributed to business incubation managers during a training event. Thus, the results are based on the perception not of the incubatees but of the business incubation managers. Still, Lin et al. (2012) did call for more research targeting the interaction between business incubators and the incubatees.

Bøllingtoft and Ulhøi (2005) discovered a bottom-up business incubation approach challenging the traditional top-down design in a group of entrepreneurs in their study that created their own physical business incubators with the purpose of supporting and providing networks among entrepreneurs. The emergence of this new business incubator phenomenon discovered by Bøllingtoft and Ulhøi (2005) highlights some significant points that might influence the more traditional top-down-designed business incubation programs. First, the entrepreneurs created and operated the business incubator from the bottom up by themselves, without any public support, and the traditional business incubation program was replaced by informal and collective consulting among the incubatees themselves, as all the incubatees were expected to contribute to the shared community of the business incubator. Second, Bøllingtoft and Ulhøi (2005) pointed out that researchers and practitioners of business incubators have discussed and created business incubators based on a traditional top-down planning approach, which focuses more on the business incubation program and the included services offered to the incubatees and differs significantly from the bottom-up approach, where the entrepreneurs focus on the social interaction and network among the incubatees in the business incubator.

In summary, it should be highlighted that the literature addressing the business support/coaching of entrepreneurs (one of the business incubation elements) seems rather underrepresented in the field. Only a few studies investigate this element in depth, in contrast to the increased focus one could expect on this element. Furthermore, some researchers have argued that the incubatees can provide this business support to themselves via more informal settings or from the bottom up, as argued by Bøllingtoft and Ulhøi (2005), thereby challenging the business support element of the business incubation process.

4.4 Focus on networking

In the research field of business incubators, it has repeatedly been found that entrepreneurs are interdependent on wide and useable networks. Allen and Rahman (1985) stated that business incubators can produce a positive environment for improving entrepreneurship by linking the entrepreneurs to more formal types of networks such as banks and government programs, as well as seed and venture capital organizations. The informal network consists of family, friends, and business associates (Birley, 1985), which can also mean other incubatees. The importance of networks and entrepreneurs does not seem to have changed over time, as Pena (2010) suggested that an increased and more focused use of networking possibilities inside and outside business incubators could help to increase the likelihood of success for entrepreneurs and start-up companies. Löfsten (2010) stated that from the perspective of the entrepreneur, business incubators provided opportunities to gain access to useful internal and external networks that can be of importance for the entrepreneur's performance and business activities.

Gullander (2006) divided the network element of business incubators into the network of other incubatees and networks with other actors, e.g., business incubation staff and supportive organizations associated with the business incubator. Networking is crucial for entrepreneurs, who use existing informal and formal networks and continuously expand their social-professional ties as a means of acquiring information and resources that will benefit their organization and their goals (Aldrich, 1999). Soetanto and Jack (2013) concluded that incubatees mainly use the internal network of the business incubator to access "intangible resources" (knowledge and information) via partnerships, which 54.8% of the incubatees engage in, whereas 43.5% of the incubatees use the internal network for project collaborations. In terms of the external network, the only significant finding was that 49% of incubatees made use of the nearby university for casual networking with researchers for the purpose of gaining information that could benefit their business. However, it is questionable whether these results are generalizable as the incubatees they investigated all were high technology–based companies and therefore maybe more in need of resources and research knowledge from a university than other types of entrepreneurial companies. However, Ebbers (2013) presented similar results, arguing that incubatees benefit

from possessing knowledge of potential partnerships from other incubatees, which could provide them with specified resources if needed.

Peters et al. (2004) defined networking within the business incubation terminology as offering the incubatees access to "managers, administrate, management, financial, legal, insurance consultants as well as to scientists, academics, prospective customers, either for a fee or free of charge" (p. 86). This statement projects an understanding that a network is something that the business incubator offers the incubatees. However, other research has clearly stressed the importance of the coproduction of networks and the importance of networking activities between tenants, business incubation managers, and graduates (Rice, 2002), as well as building networks within the business incubator that can activate a bottom-up network-based learning environment (Bøllingtoft & Ulhøi, 2005). Business incubators in a network context are likely to play a facilitating role because the great value for entrepreneurs is often hidden in the hazy daily interaction with business incubation managers and other staff that provide contacts, business advice, and sales leads for potential customers, which does not seem to happen via the more formal counseling sessions offered by business incubators (Oxford Research, 2008). As facilitators, business incubators act as "brokers," a term derived from social network theory, meaning that business incubators are mediators of social ties, linking entrepreneurs to potential partners, employees, or customers. This role is considered to be one of the more important value-adding functions of business incubators, and researchers have supposed that how the management of business incubators accomplishes this is a determinant factor of success for the business incubator and the entrepreneurs (Peters et al., 2004). Thus, it is understood that business incubators are important because they facilitate social capital and networking for the incubatees (Aslesic & Slavec, 2012).

An interesting finding related to the network discussion is contributed by Hansen et al. (2000), who discovered that although business incubation managers were aware of the importance of creating valuable network activities for the entrepreneurs and their companies, only 26% actually did so (see Figure 1). However, this has developed over time; according to Gstraunthaler (2010), 88% of business incubators offer some sort of network of business relationships to the incubatees. Furthermore, from Hansen et

al.'s (2000) Figure 1, we can also see that only 84, not all, of the business incubators investigated offered office facilities. This shows that "virtual" business incubators or business incubators "without walls" do exist, as introduced earlier. The figure also shows that there is a clear but small difference in the types of services different business incubators offer their clients.

Focusing on creating appropriate networking activities for business incubators and assisting the incubatees in creating and using entrepreneurial networks is, according to Tötterman and Sten (2005), a good idea; incubatees who have received more support in the creation of a solid business network are also more content with the other services offered by the business incubators. Scillitoe and Chakrabarti (2010) have stressed that the network is considered to be most beneficial if it consists of high-quality contacts as opposed to merely a large quantity, and business incubation managers should therefore focus on one entrepreneur/company and its specific needs at a time. However, this might be a practical challenge for business incubator managers; one study concluded that they spend most of their time on operational tasks in order to secure the future of the business incubator (Lewis, 2001). McAdam and Marlow (2008) have also stressed how business incubators can create connections to the incubatees from external networks outside of the business incubator. These connections can be to potential customers, investors, suppliers, and new knowledge from, e.g., universities.

Hughes et al. (2007), however, claimed that business incubators merely provide opportunities for value creation, and their success depends on how the incubatees use the existing network strategically. This notion is supported by McAdam and Marlow (2008), who argued that the incubatees have to be proactive in their networking activities in order to make proper use of the network possibilities offered by the business incubator. Furthermore, McAdam and Marlow (2008) highlighted that the professional network of the business incubator can provide a sort of credibility to the incubatees, projecting a positive image of the incubatees and their companies toward customers and potential partners outside of the business incubator. Furthermore, McAdam and Marlow's (2008) in-depth case studies of six entrepreneurial companies inside a university incubator in the United Kingdom showed that all of the cases claimed that it was important for them to be part of a network with peers that also

shared the joint entrepreneurial struggle. This was supported by their research, which showed that incubatees use the other entrepreneurs for support based on the fact that they might have faced the same challenges; it helps to legitimize their existence, and therefore the entrepreneurs become more persistent and committed to their entrepreneurial venture. This argument is also supported by Mubaraki and Busler (2013), who stated that business incubators provide psychological support to the incubatees, which increases their determination to pursue their entrepreneurial goals. Based on abundant research on the networking element of business incubators, Demirgil, Karaöz, Baptista, and Sungur (2011) set out to investigate whether there is a link between the effect of networking of incubatees and their companies' performance by looking only at the network ties of the incubatees inside of the business incubators. Their results indicated that it is hard to conclude that there is a significant difference between growing and nongrowing incubatees in relation to how well they are integrated into the network of the incubators.

Cooper, Hamel, and Connaughton (2012) followed the research stream of McAdam and Marlow (2007) by exploring networking inside of a business incubator but from a communication perspective. Like McAdam and Marlow (2008), Cooper et al. (2012) discovered that the proximity of the incubatees is of great importance in enhancing networking and trust among the incubatees and that the main and preferred communication method in the business incubator is face-to-face. Their findings also indicated that the business incubation manager plays an important role in facilitating the networking process by, e.g., introducing incubatees to each other, keeping the incubatees motivated to maintain the networks, and also eliminating hurdles to networking, e.g., time limitations, lack of information about the other incubatees, and lack of trust among the incubatees. Cooper et al. (2012) furthermore called for more research about the social support network, which they concluded to be very important in assisting incubatees in handling their stress level, especially during the initial entrepreneurial start-up phase; they also argued for a differentiated networking process determined by the incubatees' business life cycle because the incubatees have different needs later in the business incubation process.

In conclusion, it can be argued that much of the existing literature has focused on the network element of the business incubation program offered to the incubatees by the

business incubator, representing a top-down perspective. However, newer research has also indicated that it is up to the incubatees to be proactive during the business incubation process in order to get as much as possible out of the network possibilities that the business incubators facilitate. Furthermore, the incubatees should also contribute to the network and create their own entrepreneurial network, which signifies a bottom-up viewpoint. Thus, it can be argued that business incubators must create the right setting to provide the incubatees with the possibility of initiating a bottom-up network-oriented learning process.

4.5 Shift toward focus on the incubatees

The question still remains as to how the start-up companies are affected by these specific elements of the business incubators. Ahmad and Ingle (2011) have claimed that business incubators can contribute to the growth and development of entrepreneurial companies based on a number of support mechanisms usually not available to companies outside of business incubators. However, they also argued that it is difficult to measure how and what specific business incubation elements might benefit the development of the incubatees because there are always internal and external variables that influence the business incubation process and thus the perception of the incubatees. The difficulty in measuring the value in economic terms, though, does not indicate that business incubators do not produce value for the incubatees, and according to Ahmad and Ingle (2011), the evaluators of the business incubators should always be the incubatees (entrepreneurs) that participate in the business incubation program. As pointed out by Pena (2004), most research within the field of business incubation has focused on the business incubator itself, and thus Pena (2004) focused on the tenants and their companies, rather than on the incubator, by linking different business incubation services to the business endurance and survival rates of the entrepreneurs' companies.

Vanderstraeten and Matthyssens (2010) argued that business incubation performance research is shifting away from the established understanding of conducting performance-based studies that rely only on financial measures as researchers recognize the limitations of these types of studies in the context of business incubation. Few researchers have investigated how incubatees progress in business

incubators and thus provided a better picture of how business incubators experience the business incubation process. Meru and Struwig (2011) conducted such a study of incubatees in Kenya, investigating the perception of the incubatees in relation to the business incubations services provided to them. However, the study did not investigate how the incubatees actually perceived the influence of the different elements/services of the business incubator but merely focused on the importance and the quality of the different business incubation services; they concluded only that most of the business incubation services were important but did not meet incubatees' expectations. Meru and Struwig (2011) conducted a study of satisfaction in relation to how incubatees perceived the quality of different business incubation elements, but it can be argued that this was not a study of perceived influence, which this dissertation investigates. Gullander (2006) is another researcher that explored the perspective of the incubatees in relation to what they viewed as the most important elements of business incubation support. Firstly, he conducted a qualitative study of 18 incubatees, interviewing them about their opinion about the impact of the business incubator in relation to their development and the growth of their business. The results showed that the most important elements for the incubatees were location, image, business support, and network. However, the study showed that the incubatees did not make much use of the business support element, even though they rated the quality of the support as high when asked. By contrast, 61% of the incubatees made use of the network with other incubatees. In conclusion, Gullander (2006) argued that there seems to be a mismatch between what the incubatees claim to be of importance and what they actually use, which he suggested might be because the business incubators offer standardized services but the needs of the incubatees change over time. Voisey et al. (2006) also argued for the importance of considering incubatees' perspectives when designing studies that measure the performance of the business incubators although they also stated that more hard measures are needed. Thus, they introduced a conceptual framework that identifies different performance measures divided into hard and soft measures, as represented in Figure 2. Soft measures are defined by Voisey et al. (2006) as "benefits such as increased business knowledge and skills, more business awareness and increased client networking" (p. 465), whereas hard measures represent performance-based data such as growth in turnover, survival rate, and profitability. According to Voisey et al. (2006), soft

measures can be difficult to determine and quantify because they are subjective. Stephens and Onofrei (2012) created an updated version of the conceptual framework of performance measures of business incubators created by Voisey et al. (2006) by focusing only on the measures of the incubatees and furthermore dividing the business incubation process into three stages, namely preincubation, during incubation, and postincubation (see Figure 2). The model shows that different measurements are introduced and are relevant at different stages of the incubatees' business incubation process, underpinning the concepts of hard and soft measures of the incubatees' performance. According to Stephens and Onofrei (2012), both hard and soft measures can be measured by asking incubatees questions about both, as prior literature has done. However, whether this was the original notion of Voisey et al. (2006) is hard to determine; they simply laid out the framework but did not test it. One could rightfully assume that Voisey et al. (2006) intended the original hard measures from their model to be performance-based measures at a macrolevel, meaning that these numbers of growth are specific and drawn from different databases, not provided by incubatees.

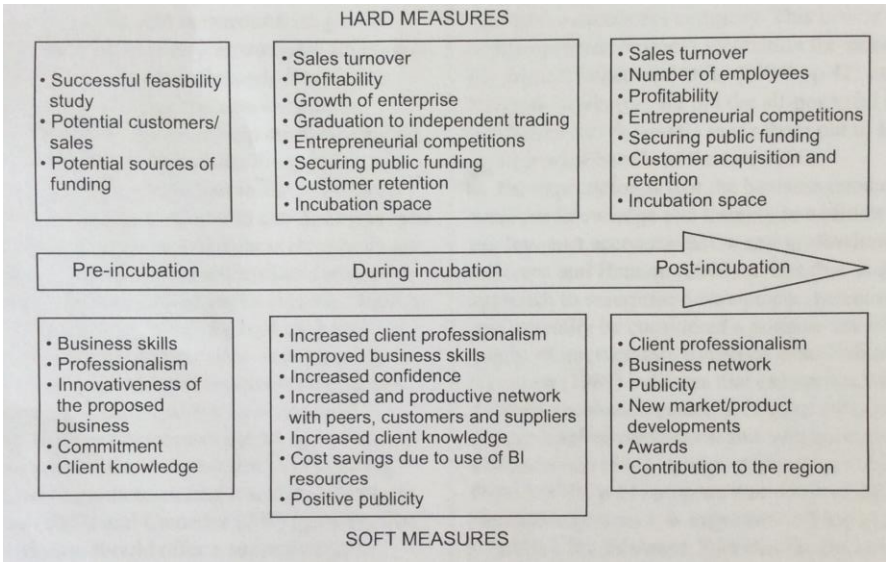

Figure 2. A conceptual framework of hard and soft measures for evaluation before, during, and after the incubation process (Stephens & Onofrei, 2012).

Regardless, from Stephens and Onofrei's (2012) study, it was clear that the most beneficial element for the incubatees was growth of their company, followed by

reduced reliance on business incubation support, which was also rated as the least important element for their business. Thus, Stephens and Onofrei (2012) highlighted that it is important to explain clearly to the incubatees what the role of the business incubation process is in order to eliminate gaps between the incubatees' expectations and the benefits of the business incubation process, which should be a long-term business development process that results in increased sales and profit for the incubatees. In relation to the soft measurements, the study showed that increased confidence in themselves and their business, increased networking with peers, and increased business knowledge of the incubatees were identified as being the most important benefit of the business incubation process. Increased confidence was also rated as the most important element in relation to their development, whereas increased networking with peers surprisingly was rated second to last. Despite the fact that it is difficult to measure soft benefits in quantitative ways, the incubatees highlighted that these benefits were very important for their development and thus also themselves. Noltes et al. (2013) also made use the soft and hard measures defined by Voisey et al. (2006) when they investigated performance measures of different types of business incubators by asking the business incubators to evaluate their own performance; thus both hard and soft measures are applied in their study, without asking incubatees or drawing on databases.

Aslesic and Slavec (2012) followed the development of the field by also focusing on the perspective of the incubatees, arguing that *"no previous research has investigated this influence in the environment of an incubator, although digging* into *what makes incubatees satisfied with incubators, which eventually makes incubatees to appreciate being in an incubator and to develop an intension to stay, would be of great value for incubators"* (p. 203). Thus, Aslesic and Slavec's (2012) study clearly considered the perspective of the incubatees in relation to business incubators, thereby providing the field with new perspectives on the evaluation of the business incubators' performance by more soft measures, or, as they called them, "intangible" measurements. Their study was based on a review of the literature after which different hypotheses were set forth and deductively tested on the incubatees using a Likert scale. The study investigated the satisfaction of the incubatees, the business incubators' influence on the incubatees. Accordingly, they firstly concluded that the incubatees' satisfaction with the business incubators was significantly related to the level of commitment and

trust the incubatees had in the business incubator and, secondly, that the proactiveness of the incubatees in relation to their exploitation of their social networks likely had a positive effect on their level of satisfaction. These are definitely interesting and relevant findings for both researchers and practitioners, but they do not provide much insight into how this influences the incubatees or how this might affect their entrepreneurial process. Meru and Struwig (2011) and Gullander (2006) also investigated what the incubatees considered to be of most importance for them and their entrepreneurial process, but neither of these studies explained how they are influenced. Likewise, Aslesic and Slavec (2012) investigated satisfaction and not influence, and, as argued in this dissertation, there is a great difference between studies of satisfaction and studies of influence.

Xu (2010) investigated the perception of the incubatees in relation to how they viewed the value of the business incubation services and the impact of the business incubation programs, which is, again, different from investigating perceived influences of the different business incubation elements. Furthermore, Xu (2010) also did not relate the findings to how the different business incubation services might influence the incubatees' perception and understanding of their entrepreneurial process and development. Xu (2010) reached his results by interviewing 61 Chinese incubatees and asking them to rate various business incubation elements. From here it was reported that 90% of the incubatees perceived the office facilities to be of significant importance, inexpensive and flexible space being the most valued service in relation to office facilities. Furthermore, the results also showed that business incubators help enhance the credibility and visibility of the incubatees. By contrast, the business incubation managers were rated as having less value for the incubatees, but the interaction with the business incubation managers in relation to network and contacts inside and outside of the business incubator did provide the incubatees with added sufficient value, which was also the case of the educational element of the business incubation programs. In terms of the network element, the majority of the incubatees made use of the network offered by the business incubators as well as the network with the other incubatees, which added sufficient value to the development of their entrepreneurial business. Furthermore, 50% of the incubatees also formed partnerships and hence conducted business together. When asked about the benefits of the overall business incubation program, 93% stated that their business image had

been improved by the business incubator, and 73% felt that the business incubator had helped them lower their costs of doing business. However, only approximately 50% stated that the business incubator had shortened the learning curve and increased their confidence. Finally, only 29 agreed that the business incubator had increased their entrepreneurial and business-related skills (Xu, 2010).

Based on the recent development of the business incubation field, we have learned that the field is accepting the importance of the perspective of the incubatees when searching for new knowledge of how they use the support elements provided by business incubators, which also means that in order to understand how business incubators influence incubatees, we have to explore the perspective of the entrepreneurs that use the business incubators. The relevance of this type of research focus is great, as the field shifts toward incubatees and their relationship to business incubation services (see Abduh et al., 2007; Dechang et al., 2010). Thus, it can be argued that the field can benefit considerably from conducting more in-depth research that investigates the microlevel of business incubators and how the entrepreneurs inside the business incubators are actually influenced and how they essentially develop based on the guidance they receive via the business incubator. This is also the opinion of Ahmad and Ingle (2013), who proposed that the research field should investigate the impact of the business incubation process and the processes that contribute to the success of entrepreneurial companies.

From the literature review, we can conclude that there is a need for bettering our understanding of how incubatees perceive being part of a business incubator as influencing their entrepreneurial process and development. Correspondingly, this dissertation furthers the emerging development of the research field of business incubation by investigating the business incubation concept from the perspective of the incubatees. This dissertation does not study satisfaction or value as prior studies have done; instead, it generates new knowledge by studying what elements in the business incubation process are perceived as most influential by incubatees in relation to their entrepreneurial process and development. Additionally, this dissertation also seeks explanations as to how incubatees perceive being part of a business incubator as influencing their entrepreneurial process and development, incorporating what we know about entrepreneurs and their development from the body of entrepreneurship

literature. This area is, to this author, overlooked in the existing business incubation literature as entrepreneurship theory in general is deprioritized in the business incubation field. In conclusion, it can be argued that the need for bettering our understanding of the incubatees, both empirically and theoretically, is strong, especially by exploring how the different parts of the business incubation process add value to the entrepreneurial process and development instead of measuring different quantitative performance and economic impact indicators that say little of how entrepreneurs actually develop. Accordingly, the field can also benefit from bettering its theoretical understanding of how entrepreneurs think, act, learn, and develop and from implementing this understanding into business incubation studies by using the existing and emerging theoretical knowledge base that can be gained from the entrepreneurship literature, which we discuss in the following chapter.

5. The entrepreneur

5.1 Defining the entrepreneur

Wennekers and Thurik (1999) have discussed the revival of entrepreneurship and entrepreneurs as a significant phenomenon of the 1980s and 1990s in light of evidence indicating that the focus of economic activity moved away from large companies in the 1970s and onto entrepreneurs and small companies. Elkjaer (1991) argued that the revival of the entrepreneur started in the 1970s and to some degree was based on a renewed focus on Schumpeter's view on how the entrepreneur is an individual who is willing to translate new ideas or inventions into successful innovation. Landström (2008) stressed the importance of the entrepreneur as someone who is needed in order to convert knowledge into economic growth by, e.g., combining research and development (R&D) outcomes with other elements of value. Thus, it can be argued that no innovation takes place without entrepreneurial activity. According to Rae (2007, p. 3), the entrepreneur is "*the person who acts in an enterprising way, and who identifies or creates and acts on an opportunity, for example by starting a new business venture.*" By "enterprising" Rae (2007, p. 3) meant that individuals use "*the skills, knowledge and personal attributes which are needed to apply creative ideas and innovations to practical situations*." Rae (2007, p. 40) furthermore claimed that the act of entrepreneurship performed by the entrepreneur is a process that is interconnected as the entrepreneur creates, recognizes, and acts on entrepreneurial opportunities by using innovation/creative thinking, decision making, and action. The dynamic task of exploring and innovating is considered a distinctive entrepreneurial trait (Casson, Yeung, Basu, & Waseson, 2006), and studies of "the entrepreneur" have been a central element within the scientific field of entrepreneurship. One of many discussion points of entrepreneurship focuses on entrepreneurs and why they are considered to be different from nonentrepreneurs, and investigating entrepreneurial personality traits (i.e., entrepreneurship is something one is born with) and entrepreneurial cognition (i.e., entrepreneurship can be learned) are considered to be two main approaches within the field of entrepreneurship (Keh, Foo, & Lim, 2002).

Entrepreneurial traits have been analyzed and identified by many researchers in the field (see Littunen, 2000; Caird, 1993; Korunka, Frank, Lueger, & Mugler, 2003). The central characteristics of entrepreneurs have been identified as risk-adverse/risk-taking propensity, a special/high need for achievement, internal locus of control, creativity/innovativeness, and a high level of proactiveness. Entrepreneurs often deviate from what are considered established norms of behavior (Leavy & McCarthy, 1998), and Koh (1996) identified entrepreneurial traits as being cause committed, having to be in control, having a utilitarian perspective of what is wrong and right, and finally, being fond of uncertainty and change. Dilts and Hackett (2004a) highlighted entrepreneurial confidence as a key factor; entrepreneurs might be associated with unreasonable levels of confidence regarding personal capabilities and success, since this is required when launching a company. Researching entrepreneurs based on personal characteristics has been criticized because personalities can change, especially when individuals are exposed to distress such as fighting for income survival, which is a natural element of the entrepreneurial lifestyle (Gartner, 1990). Furthermore, it has been difficult to find any significant correlation between entrepreneurial traits and entrepreneurial behavior, and Gartner was one of the first to question the focus on traits and characteristics of entrepreneurs by arguing that in order to understand the phenomenon of entrepreneurship, the field would have to focus on the processes of how organizations are created. As stated by Gartner (1988), "*We should think of entrepreneurs in regards to the role they play in enabling organizations to come into existence"* (p. 62). Rae (2007) claimed that research focusing on the entrepreneurial personality has not provided the research field with a central, specific entrepreneurial personality type of importance; this does not mean that the idea of an entrepreneurial personality should be neglected, but we cannot learn much about how entrepreneurs develop from this personality discussion. Instead, Rae (2007) argued, it would be more beneficial to consider entrepreneurial development as a social and cultural learning process that is practiced through interaction and engagement with others.

Another area of entrepreneurship that has gained recent attention is that of entrepreneurial cognition, which is a research area that strives to improve our understanding of entrepreneurial behavior and how entrepreneurs gather, process, and evaluate information in relation to the creation of an organization (Keh et al.,

2002). Mitchell, Busenitz, Bird, Gaglio, McMullen, Morse, and Smith (2007) claimed that the fundamental question of entrepreneurial cognition is "How do entrepreneurs think?" thereby placing the focus on individuals (entrepreneurs) and how they manage to create prosperity via identification and exploitation of market opportunities. In this regard, different complementary cognitional concepts have been identified as to how entrepreneurs manage to cope, think, and base their decision making in a context of uncertainty and change, namely *heuristics-based logic, perceived connections and alertness, entrepreneurial expertise, and effectuation* (Mitchell et al., 2007). Research on entrepreneurial cognition has in recent years accelerated and gained much attention within the field of entrepreneurship, and thus it is also discussed in depth later in this chapter. However, first we need to gain a better understanding of entrepreneurs and the entrepreneurial process that they engage in.

In Shane and Venkataranam's (2000) analysis of entrepreneurship as a research field, a conceptual framework is presented in which the entrepreneurial process consists of two processes, namely *discovery* and *exploitation* of entrepreneurial opportunity. Davidsson (2006, pp. 76-77) defines the two concepts as follows:

"Discovery refers to the conceptual side of venture development, from an initial idea to a fully developed business concept where many specific aspects of the operation are worked out in great detail".

"Exploitation refers to the action side of venture development. It is in the present context a neutral term, denoting the decision to act upon a perceived opportunity, and the behaviors that are undertaken to achieve its realization. . . . *Exploitation thus simply means the attempted realization, or implementation, of ideas".*

Furthermore, Davidsson (2006) clarified that the entrepreneurial process is based on these two stages, and that the entrepreneurial act plays out in between them. However, while Davidsson (2006) saw the processes of *discovery* and *exploitation* of entrepreneurial opportunity as more divided, Rae (2007) perceived these processes as more intertwined, arguing that entrepreneurship is a process where short-term opportunities can be discovered but where the entrepreneurial opportunities with the most potential are created instead of discovered. Accordingly, Rae (2005, p. 324) defined entrepreneurship as "*an interrelated processes of creating, recognizing and*

acting on opportunities, combining innovating, decision making and enaction." Following this understanding of the entrepreneurial process, Rae (2007) a few years later argued for what he referred to as opportunity-centered entrepreneurship as a learning process where the entrepreneur operates within a scene that is concentrated around four interlinked entrepreneurial themes. These themes are identified as follows:

- *Personal enterprise*: the individual aspect of the entrepreneurial process in relation to how individuals learn to operate in entrepreneurial ways and thus become entrepreneurs.
- *Creating and exploring opportunity*: how entrepreneurs can create, identify, and develop entrepreneurial opportunities via a process that Rae (2007) called opportunity exploration.
- *Planning to realize opportunity*: how the entrepreneur collects and generates information, which can be used to prepare a plan to exploit an entrepreneurial opportunity.
- *Acting on opportunity*: how the entrepreneur strives to implement a business plan using entrepreneurial skills and strategic considerations as well as learning from critical success factors and reasons for failure during the implementation and exploitation of the entrepreneurial opportunities stage of the entrepreneurial process.

From Rae's (2007) conception and understanding of entrepreneurship as an opportunity-centered process, it is clear that entrepreneurship is a process that can also be learned by individuals with no prior entrepreneurial experience, which is clarified by Rae (p. 213): "*Entrepreneurship is a path open to everyone, because the skills and approaches are capable of being learned*." This statement clearly frames what is happening within the field of entrepreneurship research; the discussion of entrepreneurial traits and personality has faded away, and attention has turned toward entrepreneurial learning and development. Entrepreneurial traits and personality are considered to be simply static phenomena within the field of entrepreneurship, which cannot be taught or learned. Therefore, it is not relevant to discuss or investigate entrepreneurial traits and personality in relation to how entrepreneurs can develop and be influenced, which is the focus of this dissertation

and the purpose of business incubators. In order to understand how entrepreneurs develop and how they can be influenced, we need to investigate other theoretical considerations of entrepreneurship. Based on our discussion so far, the investigation should focus on how entrepreneurs learn to manage, cope, think, and base their decision making in the context of uncertainty and change, which is considered characteristic of the entrepreneurial process. According to Rae (2006), the entrepreneurial learning process is shaped via the social, environmental, and economic milieu in which it unfolds, which could mean that the business incubation environment influences the entrepreneurial learning process. Supporting the thought that entrepreneurship is a learning process, one can argue that it is the entrepreneur's task and challenge to learn how to maneuver, balance, and manage the different phases of the entrepreneurial process with the end purpose of establishing, growing, and maintaining a profitable organization. Rae and Carswell (2000) argued that entrepreneurial learning is about how entrepreneurs build new meaning during the process of recognizing and executing on entrepreneurial opportunities and furthermore managing their company. Later Rae (2005) added "interacting socially" to this definition of entrepreneurial learning, thereby stressing the importance of understanding the entrepreneurial process as a learning process that is developed through social interaction with others, e.g., peers, customers, and other stakeholders. In a study of creative entrepreneurs, Rae (2012) emphasized that learning by doing via experience and action is very important when new or potential entrepreneurs have to learn how to use and transfer their skills in flexible ways. Rae (2007) went one step further from entrepreneurial learning and presented the concept *entrepreneurial act*, which is defined as "*imagining the possibility of 'what could be' and acting to make it happen. Entrepreneurial people create their new reality, taking responsibility for shaping future events*" (p. 48). During this entrepreneurial act, entrepreneurs encounter high uncertainty, both on a professional level and on a personal and emotional level. As entrepreneurs by definition operate in a process of high uncertainty, they have to rely on their own personal confidence and self-efficacy throughout the entrepreneurial process, as no one can predict the future. Thus, entrepreneurial self-belief and self-efficacy become fundamental elements in what Rae (2007) referred to as entrepreneurial behavior and performance. According to Rae (2007), entrepreneurial confidence is a behavioral and thought process wherein

entrepreneurs portray themselves in relation to their surroundings and the people around them, assessing whether or not they can change the existing reality. Self-efficacy is entrepreneurs' belief in themselves and certainty that they can accomplish tasks that are essential to them and their entrepreneurial process. Self-confidence and efficacy are, according to Rae (2007), behavioral elements that "*[grow and develop] through successful experience, social learning from others, positive feedback and reinforcement, and personal maturity"* (p. 48). This clearly emphasizes that entrepreneurs' self-confidence and efficacy can be developed and thus may also be influenced, which makes it an interesting element of the entrepreneurial learning and development discussion, especially in relation to how incubatees' self-confidence and self-efficacy might be influenced by business incubators. Hence, the area of self-confidence and efficacy in the entrepreneurial process and development deserves further attention, which is why the following section investigates the theoretical concept of entrepreneurial self-efficacy in depth.

5.2 Entrepreneurial self-efficacy

Entrepreneurial self-efficacy (ESE) originated from the general psychology research term "self-efficacy," which was coined by Albert Bandura to describe an individual's belief in his/her own personal abilities to achieve and realize a task or goal within a specific setting (Bandura, 1997). Wilson, Kickul, and Marlino (2007) stated that "*self-efficacy refers to an individual's self-confidence in specific tasks and situations*" (p. 389), a definition inspired by the work of Boyd and Vozikis (1994). Furthermore, Wilson et al. (2007) stated that self-efficacy has to be viewed within a certain context or domain, as an individual can possess a high level of self-efficacy in one domain or within a certain context but have low self-efficacy in others. Thus, the concept of ESE has been developed in order to discuss self-efficacy of entrepreneurs navigating within an entrepreneurial environment; it refers to entrepreneurs' confidence and belief in themselves (internal) within the environmental constraints and possibilities that they operate in (external) (Drnovsek, Wincent, & Cardon, 2010) and is shaped by the entrepreneurs' assortment of abilities, resources, and experience (Kasouf, Morrish, & Miles, 2013).

ESE is an interesting measurement of entrepreneurial development and performance in a business incubation context since, according to Baum and Locke (2004),

entrepreneurs with higher ESE have been shown to lead their companies to higher revenue and employee growth compared to entrepreneurs with lower ESE. This is supported by Hmieleski and Baron (2008), who stated that it seems evident that entrepreneurs with increased ESE perform better than entrepreneurs with lower ESE, and that this performance can be seen in more profitable and faster venture growth. According to Kasouf et al. (2013), ESE is necessary but not sufficient to ensure successful entrepreneurial progress, which means that a high level of ESE does not guarantee entrepreneurial success by itself. However, other researchers have argued that overconfidence originating from optimism can have negative effects on entrepreneurs, potentially leading to unnecessary risk taking that could ultimately endanger the venture (Lovallo & Kahneman, 2003). By contrast, Goel and Karri (2006) have proposed that entrepreneurs with a high level of ESE are more likely to overtrust stakeholders, which in this case is a positive attribute as trustworthiness increases entrepreneurs' chances of gaining access to resources, networks, and relationships with important partners that can benefit and influence the entrepreneurial company.

This dissertation relies on the assumption that increased ESE is considered to be an element that represents entrepreneurial development and vice versa. According to Zhao, Hills, and Seibert (2005), ESE is a conceptualization that can be used to forecast entrepreneurial progress through training and entrepreneurial education. As described by McGee, Peterson, Mueller, and Sequeira (2009), there are different ways of conceptualizing the concept of ESE, which they divided into unidimensional and multidimensional measures. Unidimensional indicate simple measures of ESE, e.g., asking the respondents a few questions concerning their certainty about launching an entrepreneurial venture. McGee et al. (2009) considered this approach to be a rather extreme measure of ESE; it is clear that they advocated a multidimensional approach where respondents are asked about many different entrepreneurial dimensions and qualifications that they consider to be important in the entrepreneurial process, e.g., managing risk, innovation, financiering, and marketing. McGee et al. (2009) also argued for investigating ESE based on individual dimensions rather than relying on a total or average score of ESE, as this makes it close to impossible to indicate which dimensions and qualifications have influenced the ESE the most.

ESE studies based on empirical findings have typically been conducted within educational environments, e.g., Wilson et al. (2007), who investigated the gender effect on ESE and entrepreneurial intention at high school level and among MBAs. Barbosa, Gerhardt, and Kickul (2007) researched how cognitive styles and risk preferences of different types of ESE and entrepreneurial intentions were related among 528 international entrepreneurial students from three different universities. However, several studies have also investigated ESE in entrepreneurs who had already launched their business. For example, Baum and Locke (2004) researched several entrepreneurial characteristics, including self-efficacy, in relation to venture growth among existing CEOs from over 800 architectural companies. Forbes (2005) studied entrepreneurs from 719 companies within Internet services and multimedia in order to clarify how their ESE was influenced by their venture's strategic decision making and found initial indications that ESE enhances a company's performance.

As seen above, the use of ESE as an entrepreneurial attribute in relation to entrepreneurial progression, development, and performance is an interesting element to investigate, both in an educational setting and from an entrepreneurial and venture growth perspective. The concept is relevant in many different settings and contexts, including business incubators. Furthermore, the above summary of the concept also shows that there are different ways of measuring ESE depending on the respondents and the purpose, with some researchers arguing for multidimensional approaches while others apply simpler unidimensional designs. The difference in perception among researchers does not make ESE less relevant as an element that entrepreneurs can enhance or develop during their social and cultural entrepreneurial process.

Besides the entrepreneurial personal attributes of ESE, other entrepreneurship concepts also deserve attention because they can provide us with an understanding of how entrepreneurs learn and develop in the context of uncertainty. As discovered via the definitional discussion of the entrepreneur, one of these theoretical concepts is referred to as entrepreneurial cognition. According to Mitchell et al. (2007), the different complementary cognitional concepts have been identified as heuristics-based logic, perceived connections and alertness, and entrepreneurial expertise and effectuation. The latter concept of entrepreneurial expertise and effectuation is probably one of the most influential concepts of newer entrepreneurship research

within the cognitional area, and since Sarasvathy first introduced the concept of effectuation, entrepreneurship scholars have given this line of thought much attention. As effectuation seems to be the most predominant theory of entrepreneurial cognition and learning, and as the other concepts seem to be complementary and even overlapping, in the following section this dissertation introduces the concepts of effectuation and causation as a frame of reference for entrepreneurial cognition and for exploring how entrepreneurs think and act during the entrepreneurial process.

5.3 Effectuation and causation

Effectual and causal logic differ in the way in which entrepreneurs who follow each type of logic base their decision making. Sarasvathy (2001) distinguished between the two in terms of means: choosing between means to create a particular effect (causation) and choosing between many possible effects from a specific set of means (effectuation).

Effectual logic is grounded in a learn-by-doing method where an entrepreneur looks at the available resources and create a business idea and model based on these. The business idea/models are then tested on stakeholders within the entrepreneur's network, after which they are adjusted based on feedback from the network. Additionally, the entrepreneur's network is used as a tool to acquire resources through partnerships. In contrast, causal logic is based on the assumption that decisions should be made by means of thorough analyses because the outcome of a decision can be forecasted. Sarasvathy (2001) suggested that the field of entrepreneurship should perhaps shift focus away from *"How do you build a successful firm?"* or *"How do you become a successful entrepreneur?"* to *"What types of ideas and opportunities should you as an entrepreneur pursue?"* and *"Given who you are, what you know, and whom you know, what types of economic and/or social artifacts can you, would you want to, and should you create?"* (p. 258).

In her 2003 article, Sarasvathy described three principles as the foundation of effectual logic and how they differ from a causal view.

-*Affordable loss rather than expected returns:* Effectuation strives to determine how much loss is affordable and concentrates on experimentation using many different

approaches/strategies with the available resources. Causation-oriented models emphasize the maximization of potential returns by selecting among top strategies.

-*Partners rather than competitive analysis:* Effectuation focuses on partnerships and early commitments from central stakeholders as a strategy to decrease uncertainty and entry barriers. This early commitment for stakeholders makes uncertainty irrelevant. By contrast, causal models of strategy and marketing promote comprehensive competitor analysis.

-*Leveraging contingencies rather than avoiding them:* Effectuation is best at controlling contingencies that might arise unexpectedly throughout time, whereas causal models might be more applicable if pre-existing knowledge and existing expertise is the foundation of competitive advantages.

In her 2008 book, Sarasvathy added additional elements, further describing how expert entrepreneurs apply effectuation logic:

-*Starting with means rather than ends:* Effectuators initiate their decision-making procedure within certain means, rather than focusing on a goal that needs to be reached (causal logic). This means that for effectuators, the entrepreneurial process occurs from the bottom up, and effectual decision making is based on who the entrepreneur is and what and whom the entrepreneur knows.

-*Ignoring competition and stressing partnerships:* Effectuators often try to select a strategic partner as a potential first customer, preferring to focus on establishing and building partnerships and network as a substitute for analyzing the market and competition.

-*Fabricating rather than finding a market:* A common theme discovered among interviews with expert entrepreneurs is that they preferred creating a new market, believing this had higher potential than approaching an existing market.

-*Unanticipated ends as opposed to preselected goals:* From Sarasvathy's studies, 27 interviewed entrepreneurs identified and created 18 market definitions for the same imaginary product, hence supporting the idea that uncertainty is preferred and seen as a controllable element instead of a predetermined market or goal.

The different elements and thoughts behind effectuation have been developed into a model (see Figure 3). The effectuation process model developed by Sarasvathy and Dew (2005) opposes the more traditional linear approaches to the entrepreneurial process (see Figure 4). Shane's (2003) model of the entrepreneurial process starts with the identification or discovery of opportunities, followed by a series of tasks pursuing the opportunity, thereby differing notably from how Sarasvathy and Dew (2005) viewed the entrepreneurial process. In Figure 3, we see how the effectuation process starts with entrepreneurs asking themselves questions in relation to who they are and what and who they know. Based on these questions, the entrepreneurs figure out what can be created from engaging with their network. It is also from their network that the entrepreneur seeks commitment from different stakeholders, and based on this outcome, the entrepreneurial process then turns to focus either on new means or new goals, as seen in Figure 3. Depending on the selection between these two routes, the entrepreneur initiates the same process again until an entrepreneurial opportunity is created.

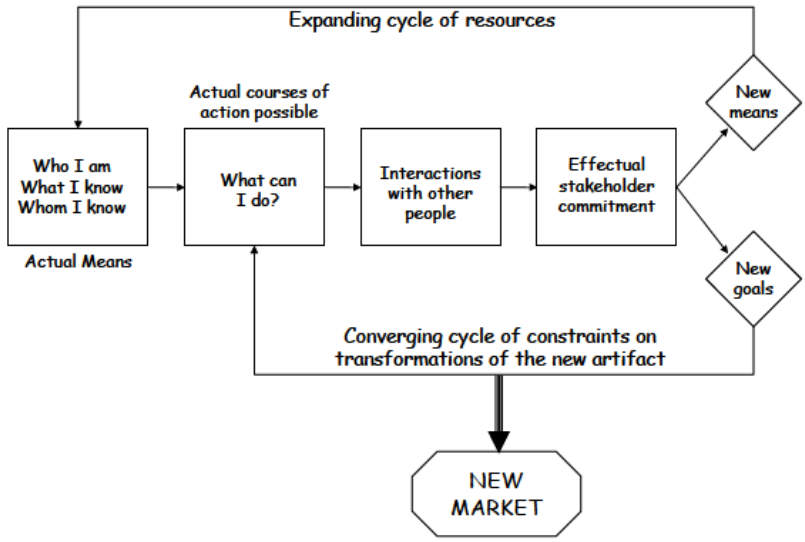

Figure 3. Dynamic model of the effectuation process (Sarasvathy & Dew, 2005).

Figure 4, from Shane (2003), illustrates how the entrepreneurial process starts with the existence of an entrepreneurial opportunity that is then discovered by the entrepreneur. Ones the entrepreneur has decided to exploit this entrepreneurial opportunity, resources are acquired and a strategy is formulated and executed. Lastly,

the entrepreneurial process ends with issues in relation to organizing and performance of the entrepreneurial venture.

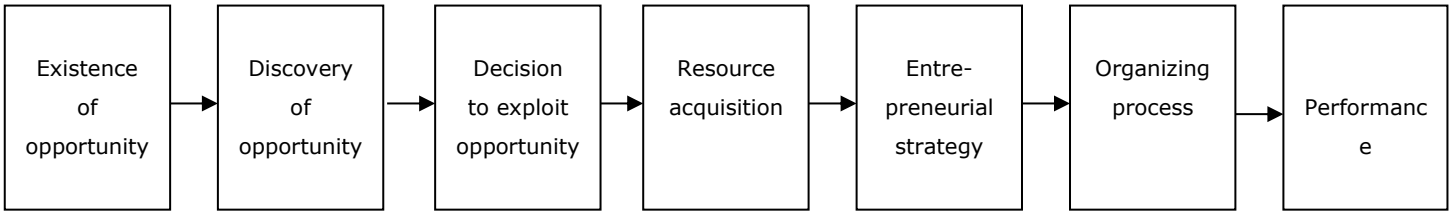

Figure 4. The direction of the entrepreneurial process (Shane, 2003).

Shane (2003) created his model based on a postulation that entrepreneurial activity is directional and methodical, although the possibility of feedback loops is also recognized. However, it is clearly stated that the discovery of opportunities can only occur if opportunities exist. Furthermore, the decision to pursue the identified opportunity has to be made before the entrepreneur can assemble resources. Hence, the directional model and thoughts of the entrepreneurial process are much more static and each part is interdependent on the other, whereas the effectuation approach sees the entrepreneurial process as more iterative and dynamic. Furthermore, effectuation also stresses the importance of how the entrepreneurial process develops and changes via the interaction with the entrepreneur's network, including potential partners, business contacts, and other entrepreneurs, in which a learning and development process occurs. This is very much aligned with how Rae (2007) perceived the entrepreneurial process; he stressed that entrepreneurs rely on constructive interaction with other people in order to be successful and that a central element of the entrepreneurial process and development is based on the entrepreneur's capability of interacting and collaborating with other individuals with the purpose of creating a successful company. The importance of entrepreneurial network, which is stressed in both Sarasvathy's effectuation concept and Rae's (2007) understanding of the entrepreneurial process as a social and cultural process, differs significantly from the concept of causation, which does not consider the importance of entrepreneurial network or interaction but instead relies on a business-planning paradigm in which the outcome of a decision can be forecasted via thorough analysis. Furthermore, Rae and Sarasvathy also shared the notion that significant potential entrepreneurial opportunities are created and not discovered, Sarasvathy (2008)

arguing that expert entrepreneurs who prefer effectual logic believe in creating, rather than identifying, new markets. In similar stream, Rae (2007) claimed that short-term entrepreneurial opportunities can be discovered but that the most promising entrepreneurial opportunities are instead created.

Operationalizing measures of effectuation and causation has been discussed in the entrepreneurship literature as being a challenge, and much of the prior empirical research regarding effectuation and causation has been carried out qualitatively. Thus, only few studies have been conducting based on quantitative measures. In Perry, Chandler, and Markova's (2012) paper, two specific quantitative studies, namely Chandler, DeTienne, McKelvie, and Mumford (2011) and Wiltbank, Read, Dew, and Sarasvathy (2009), were highlighted. Chandler et al. (2011) presented a comprehensive framework for measuring causation and effectuation quantitatively using a 5-point Likert scale; their study used a questionnaire consisting of 20 items targeted at measuring whether entrepreneurs preferred effectual or causal logic when they launched their company. Six of these items are included below in order to show how Chandler et al. managed to operationalize the concepts of effectuation and causation into survey questions that are understandable and ratable for entrepreneurs and respondents.

- We designed and planned business strategies (causation).
- We researched and selected target markets and did meaningful competitive analysis (causation).
- We analyzed long-run opportunities and selected what we thought would provide the best return (causation).
- We have allowed the business to evolve as opportunities have emerged (effectuation).
- We experimented with different products and/or business models (effectuation).
- We used a substantial number of agreements with customers, suppliers, and other organizations and people to reduce the amount of uncertainty (effectuation).

These 6 items do not represent all of the aspects of effectuation and causation; the matter of expected returns versus affordable loss is also addressed in the other 14 items, as Chandler et al.'s (2011) purpose was to cover all aspects of the theoretical

concepts. Wiltbank et al. (2009), by contrast, investigated only one element of effectuation, or subconstruct, as termed by Perry et al. (2012), namely control, when exploring how business angel investors might emphasize control or prediction when investing funding in start-up companies. Because they investigated only control and did not consider all the theoretical aspects of effectuation and causation, they explain effectuation as a process where people "are working on things within their control, working to expand the zone of things they can materially control, obviating the need to predict the future" (Wiltbank et al., 2009, p. 117).

Discussing the concepts of causation and effectuation in simplified and understandable terms has the advantage of providing a better understanding of the theoretical concept, which allows a broader audience to decode the essence of the theory (Fischer, 2012). Perry et al. (2012) furthermore advised researchers of effectuation and causation to account for causal measures separately but not as contrasted opposites of effectual measures, because even though the concepts differ in their meaning, they do not represent opposite ends of a scale. Accordingly, Fischer (2012) also described the difference between causation and effectuation in a simple manner, stating that causation represents a traditional, classic, and linear perspective of an entrepreneurial process based on a planning and predetermined goal-oriented understanding, whereas effectuation represents a newer paradigm in which the entrepreneurial process is uncertain, dynamic, interactive, and thereby different from causation. However, this simplification also comes at a price; according to Fischer (2012), there is always the risk of losing the level of abstraction of the theoretical concepts of effectuation and causation when striving to make theoretical concepts more accessible and comprehensible. However, even Sarasvathy's own work has been criticized as her argumentation for the difference between effectuation and causation is, according to Kraaijenbrink (2008), oversimplified:

"I*rrespective of whether an entrepreneurial process is means-driven or ends-driven, is based on predictability or controllability, focuses on expected return or affordable loss, aims at existing or new products and markets, is based on competition or cooperation, or is linear or cyclical, the human action involved is always situated, corporeal, and social*." (p. 8).

Duening (2010) explained effectuation and causation, based on Read and Sarasvathy's (2005) contribution, in relation to how educators traditionally teach entrepreneurship by focusing on market analysis and business planning (causal knowledge) whereas expert entrepreneurs rely on effectuation via "*an action, feedback, new action approach to venture development*" (p. 15). This characterization is also a simplified way of explaining the abstract concepts of effectuation and causation, which means that this simplification can also be applied to other works as long as researchers are aware of this simplification and can defend it.

Even though it is argued that effectuation is a method applied by expert entrepreneurs, as Sarasvathy called them, it is important to stress that both effectual and causal logic can be applied at different stages during the entrepreneurial process by different entrepreneurs. This is concluded by Bergendahl (2009), who showed that neither of the investigated entrepreneurs in her study followed the causation or the effectuation process completely. The entrepreneurs operated somewhere in between the two processes throughout the investigated period, and certain critical events and factors influenced the path of either the effectuation or causation process. The entrepreneurs investigated in Bergendahl's (2009) study can be considered novice entrepreneurs, as they were students connected to a university business incubator. It is therefore possible that the results could have been different with a sample of more experienced entrepreneurs. These questionable implications call for the need to classify entrepreneurs in order to identify whether the different logics of effectuation and causation are applied in the entrepreneurial process differently, and whether different classifications of entrepreneurs in general learn and develop differently during the entrepreneurial process. However, before classification of entrepreneurs is introduced, it seems imperative to summarize and relate the different theoretical concepts from this chapter with each other in order to create a common theoretical foundation for the dissertation.

From the theoretical discussion, the concepts of effectuation and causation and ESE were identified as elements of significant relevance for understanding how entrepreneurs can differ in logic and level of self-efficacy. These theoretical elements are also interesting within a business incubation context, as these elements can be influenced, learned, and developed by entrepreneurs during the entrepreneurial

process. When we relate the different theoretical concepts to each other, it becomes obvious that they can influence each other as the entrepreneur navigates throughout the entrepreneurial process. This is particularly true for effectuation and ESE, as the more the entrepreneur learns about being an entrepreneur, the more the entrepreneur can increase his/her level of ESE, depending on how he/she experiences the social and cultural entrepreneurial learning process. The argument is that the effectuation process is considered a bottom-up learning–by-doing process where the entrepreneur gains experience, knowledge, and insight about the entrepreneurial process from interaction with his/her network, and thus the learning process occurs within networks of knowledge exchange. The entrepreneur gains knowledge simply through interaction with potential partners, customers, and other entrepreneurs, which could lead to an increased level of ESE as the more the entrepreneur learns and experiences about how to navigate in the entrepreneurial process, the more confident the entrepreneur becomes that he/she is able to make an entrepreneurial venture happen. Hence, it is important for entrepreneurs to learn *how* to learn and navigate the entrepreneurial process. Therefore, effectuation and the use of entrepreneurial networks are closely interlinked, as the effectuation learning process occurs via interaction with the entrepreneur's network, and the more the entrepreneur learns, the more the entrepreneur is likely to increase his/her own level of commitment to the venture and thus level of ESE. Thus, it is evident that the entrepreneurial process is a social and cultural learning process practiced through interaction and engagement with others, and that this process can be learned and influenced, as argued by Rae (2007).

By contrast, the causation process is based on an analytical and planning paradigm where interaction with networks of entrepreneurs and partners is de-emphasized in the entrepreneurial process, as the entrepreneurs mainly learn and base their decision making on what information they can collect and analyze, and not from the social and cultural learning that comes from interaction with others, e.g., entrepreneurs. This is not to say that ESE cannot be increased via a causal learning process; however, because the entrepreneur is a person that *acts* in an enterprising way (Rae, 2007), the entrepreneurial process is best acquired via learning by doing, interaction, and enacting. Thus, it can be argued that ESE can be increased more quickly by applying effectuation logic, as learning here occurs via interaction, which is also how the

entrepreneurial process plays out. However, ESE, as argued earlier, is also likely to be experienced differently by different types of entrepreneurs, just like effectual and causal logic. This brings us back to the classification of entrepreneurs, which is dealt with in the following section, where different categories of entrepreneurs are discussed.

5.4 Classifying the entrepreneur

Researchers of entrepreneurship have classified entrepreneurs into different categories based mainly on their entrepreneurial experience and track record: *habitual, serial, portfolio, expert, novice*, and *nascent* entrepreneurs. Additionally, *immigrant, ethnic, social,* and *necessity* entrepreneurs are other types of entrepreneurs and areas of entrepreneurship research.

This dissertation uses the "classification of entrepreneurs" as a structured way to investigate entrepreneurs in relation to the research focus; hence, limitations become obvious. Therefore, the focus of this discussion is on experienced and novice entrepreneurs, even though other types of entrepreneurs might also exist in the business incubators.

Taplin (2005) divided entrepreneurs into three general types. Nascent entrepreneurs are considering becoming entrepreneurs. Novice entrepreneurs have launched a business without any prior experience of entrepreneurship. Habitual entrepreneurs have launched or bought several businesses consecutively (serial entrepreneurs) or at the same time (portfolio entrepreneurs). Nascent entrepreneurs are not included in this study as the chosen case business incubator accepts into the program only entrepreneurs who have already decided to launch a business.

Dew, Read, Sarasvathy, and Wiltbank (2009) have found that there is a clear difference in the decision-making logic that expert (habitual) and novice entrepreneurs apply when solving start-up-related challenges. Novice entrepreneurs in Dew et al.'s (2009) study of 37 MBA students applied target-segmentation techniques based on the predictive information that was available, and used a textbook approach when deciding how to enter markets. By contrast, expert entrepreneurs chose not to apply a predictive approach and instead focused on working with the elements of the assignment they could control, even though they

had to change the original goal of the start-up. Similar results have been confirmed by Politis (2008), who compared habitual and novice entrepreneurs in terms of start-up experience and its relation to effectual thinking. Politis's study suggested that previous start-up experience may be an important foundation for how habitual entrepreneurs gradually develop a preference for effectual decision making. The study also showed that habitual entrepreneurs demonstrate greater preference for effectual logic when applying informal marketing methods in investigating needs and interest in their products and services. In this regard, it can be discussed whether novice entrepreneurs can initiate their entrepreneurial process and development by applying effectual logic, as novice entrepreneurs by definition have not experienced the interactive social entrepreneurial process before and thus have no choice other than to rely on a causal approach. Furthermore, novice entrepreneurs have little or no entrepreneurial network that they can learn from and interact with when they engage in their entrepreneurial endeavors for the first time, which is a focal point in the effectual entrepreneurial approach. Thus, it is likely that novice entrepreneurs choose a causal process out of necessity, as they have not learned effectual logic yet.

Westhead, Ucbasaran, and Wright (2005) compared experienced entrepreneurs with novice entrepreneurs and found a difference in their behavior; novice entrepreneurs were more likely to acknowledge the importance of external advice for their companies' further development. The experienced entrepreneurs demonstrated higher confidence in their companies' performance, with a larger percentage claiming that their profit performance was better than their competitors'. Furthermore, Westhead et al. (2005) argued that the difference in behavior between these two groups should be considered when policy makers design new entrepreneurship programs. Westhead, Ucbasaran, and Wright (2003) have recommended that policy makers transfer resources away from novice entrepreneurs who are not evolving and target them toward portfolio (experienced) entrepreneurs with a higher potential for creating more jobs. Furthermore, they also argued that there is a need to encourage novice entrepreneurs to learn from the best business practices of habitual (experienced) entrepreneurs, instead of providing all entrepreneurs with the same support regardless of their resources and capabilities.

In conclusion, it is essential to note that newer entrepreneurship research has stressed the differences in what types of entrepreneurs apply effectual or causal logic and when they do so during the course of solving challenges related to the social and cultural entrepreneurial process. This is evident in how experienced entrepreneurs use effectual logic more than novice entrepreneurs, who rely on causal logic simply because they have not learned how to interact with and use entrepreneurial networks, thus sticking to the business planning approach they know. Additionally, there are differences between experienced and novice entrepreneurs in how they value the importance of external advice in their entrepreneurial process, as well as in their level of confidence in their own and their companies' performance. Hence, it is imperative to acknowledge these differences when designing research that strives to understand entrepreneurs better.

6. The Growth Factories – a business incubation initiative

The empirical data for this dissertation was collected by the researcher after following the business incubation program "the Growth Factories," which is located within the region of Zealand, Denmark, for a three-year period. The Growth Factories was chosen as the focus of investigation for several reasons. Firstly, as mentioned in the introduction, this PhD dissertation has partly been funded by the Danish Council for Technology and Innovation and a regional business link center, Business Link Zealand, so the case was predetermined and it was possible for the researcher to gain full access (which is challenging for any researcher) to a large business incubation program, namely the Growth Factories, launched by Business Link Zealand. Secondly, as the Growth Factories is considered a large business incubation program, it was possible for the researcher to apply the selected research strategy of first analyzing case entrepreneurs qualitatively and then investigating these findings quantitatively on a larger isolated group of incubatees going through the same business incubation program, thereby ensuring the validity of the final results, which would have been difficult if the quantitative data had been collected via several different business incubators with dissimilar business incubation programs and thus different business incubation elements. Thirdly, the business incubation program at the Growth Factories was ideal for the research purpose of this dissertation because it matches the proposed definition of business incubators and furthermore contains clearly identified business incubation program elements. This made it possible to investigate what elements of a business incubation program the incubatees perceived as influential in their entrepreneurial process and development.

By following a specific business incubation program, it was possible to identify useable case entrepreneurs inside the business incubators and to distribute a survey to all of the incubatees at the Growth Factories, as well as to become acquainted with the organization and project team behind the Growth Factories. Thus, the following chapter introduces the Growth Factories and the organization behind it based on document studies and the researcher's own learning experiences from following the Growth Factories.

6.1 The organization behind the Growth Factories

The Growth Factories is an EU-financed business incubation initiative initiated by Business Link Zealand, a regional business link organization; therefore, a brief introduction to this organization is presented.

Business Link Zealand was founded in 2007 as part of a governmental initiative with the purpose of gearing the nation of Denmark toward the challenges of a globalized market economy. Business Link Zealand is one of five regional business link organizations with the purpose of providing guidance for growth entrepreneurs and growth businesses that share a vision of further developing their company by, e.g., cultivating new markets, inventing new products, employing more people, or exporting more products to new or existing markets. The five regional business link organizations cooperate with private advisors such as accountants, lawyers, and banks, as well as a large number of public actors. The business link organizations are owned by Local Government Denmark, though partly financed by the Danish government.

Business Link Zealand's target group is growth entrepreneurs and growth companies. This focus was specially selected by the Danish Business Authority as this target group is considered to possess a high potential for generating economic growth and jobs for the nation of Denmark. Specifically, this target group can be divided into three company categories, namely A, B, and C companies.

- A companies have 5 or more employees and ambitions of reaching annual growth rates of 20% for a minimum of 3 years (in terms of either turnover including export or number of employees).
- B companies have fewer than 5 employees and ambitions of reaching annual turnover including export of a minimum of 10 million DKK or 10 employees within 3 years.
- C companies are people/entrepreneurs with ambitions of establishing a growth company (see A and B).

Guiding growth entrepreneurs and growth companies has been the core area of business for Business Link Zealand from the start. However, in recent years, additional activities have been added to their business portfolio, and different

business-friendly projects have been launched in order to improve and change the structural setup for entrepreneurs and companies in the region of Zealand in an effort to generate a regional business-friendly environment, thereby enhancing the chances of survival and growth of companies on a regional level. The Growth Factories is one of these initiatives.

6.2 The Growth Factories

The Growth Factories business incubation initiative was launched in the beginning of 2010 based on a pilot project of a business incubator launched during 2009 by Business Link Zealand. The business incubation initiative became a reality when it was approved for funding by the EU, which injected 13.5 million DKK, and another 13.5 million was injected via cofinancing in terms of cash and working hours from local partners such as municipalities, business councils, a local serial entrepreneur, and Roskilde University. The project team of the Growth Factories consists of three regional business incubation managers, who are part-time local business incubation managers at each of the business incubators as depicted in the organizational chart (Figure 5). Additionally, an industrial PhD fellow (author of this dissertation) has been part of the project team. The three regional business incubation managers each serve a key account function for three or four of the individual business incubators and, in collaboration with the local business incubation managers, are responsible for ensuring that the individual business incubators are operating optimally and that the incubatees participate and receive the needed support offered via the business incubation program. One of the differences between the regional and local business incubation managers is that the regional managers are employed by Business Link Zealand, whereas the local managers are employed either by the municipality or the business authority of the municipality that the business incubator is located in. Furthermore, the regional and local managers also have different areas of responsibility. The regional managers are responsible for the overall implementation and financial management of the business incubator initiative, including recruiting entrepreneurs to the business incubation program and reporting the project's progress to policy makers and partners. Therefore, each regional business incubation manager

has different areas of responsibility, besides the key account obligations to individual business incubators.

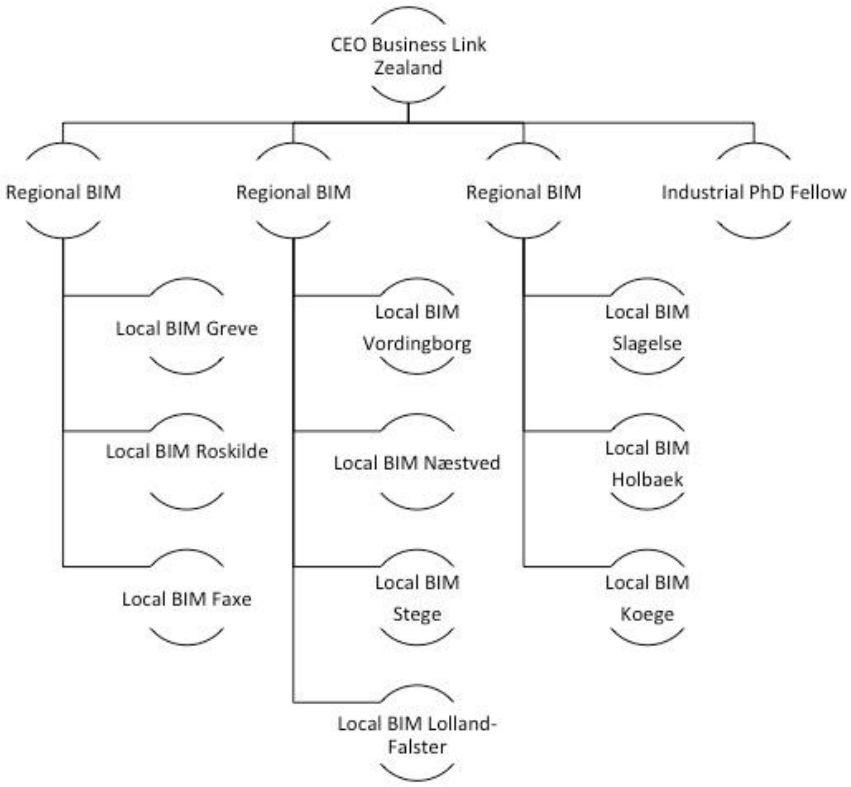

Figure 5. Organizational chart – the Growth Factories

One regional business incubation manager is responsible for the overall business incubation program and financial management of all of the Growth Factories, whereas another regional business incubation manager is responsible for sales and marketing for all the business incubators. The last regional business incubation manager is responsible for the decor of all the business incubators, as well as the implementation of the formal and informal network elements of the business incubation program, addressed later in this section. The local business incubation managers are mainly responsible for the practical day-to-day operations of their business incubators. Furthermore, the local business incubation managers are also responsible for arranging local network activities for the incubatees at their specific business incubators. The local network activities are often organized in collaboration with the regional manager responsible for the overall implementation of the formal and informal network elements of the business incubation program. However, as the local

managers are at the business incubators on a daily basis, it is also their task to create, build, and maintain an informal network and positive atmosphere within the business incubator that fosters and encourages the incubatees to network, share knowledge, and in general create value for each other. Finally, the local managers also support and guide the incubatees during their business incubation and entrepreneurial process, as much as this is possible within their competence level and within their part-time position. In this regard, it is important to note that the local managers also have other work responsibilities besides the business incubator, as they are typically employed by the local business authority.

Using Aernoudt's typology (see Table 1) of different types of business incubators, the Growth Factories initiative can be classified as a combination of mixed incubator and economic development incubator as its objective is both to create start-up companies and generate increased employment in the region of Zealand and to improve the general business environment of the region. Thus, the business incubation program is open to all sectors and industries. The 10 business incubators (excluding the pilot business incubator in Vordingborg) that are part of the Growth Factories were all to be launched within a three-year period; however, due to delays during the first year of operations, the financing period was prolonged. The business incubators were introduced in pools of three as the EU evaluated the progression of the overall business incubation initiative after each pool before granting permission to launch the next round of business incubators. Pool 1 was released upon project start, and pool 2 was approved 1 year later at the end of 2010. Finally, Pool 3 was released at the start of 2012. Due to this approach, only 7 of the 11 business incubators were operating when the qualitative empirical data (semistructured interviews) for this dissertation were collected. The remaining 4 business incubators had not been publicly announced at that time, as funding from the EU was not released till the start of 2012. However, all of the business incubators were operational when the survey was distributed. As mentioned earlier, part of the objective of the Growth Factories initiative is to link local and regional business-friendly authorities within the region of Zealand, and thus the different Growth Factories have been spread throughout the region as depicted on the map below (see Figure 6).

Figure 6. Map of the Growth Factories scattered across the region of Zealand, Denmark (2011).

All 11 business incubators share the same business incubation program/infrastructure, content, and process (introduced in the next section of this chapter), and they are all located near other business-friendly initiatives or the local business authority. However, the size and partners of the individual Growth Factories are different, and thus each Growth Factory is introduced in order to provide an overview of the different business incubators.

The Growth Factory in Vordingborg was created as a pilot business incubator and was launched by Business Link Zealand for the purpose of testing the business incubation concept and program that later formed the foundation for the other 10 Growth Factories in the region. The Growth Factory business incubator was opened in May 2009; it is still operating with room for 15 incubatees and is located on the ground floor of Business Link Zealand headquarters. The Growth Factory in Vordingborg is considered a mixed incubator using Aernoudt's typology; it is open to entrepreneurs

and companies from all sectors and industries. The local business incubator manager is employed by Business Link Zealand, where she is the receptionist for the Business Link headquarters.

The Growth Factory in Stege was the first business incubator to open when pool 1 was released and the EU approved the overall project for financing. The business incubator in Stege opened in the start of May 2010 and is the smallest of all the Growth Factories, with room for six companies. The small size of this business incubator is due to its location on the small island of Moen, where the demand for office space and entrepreneurship support is limited. Furthermore, the Growth Factory in Stege was cofinanced by a local serial entrepreneur who wanted to create a business incubator targeting social entrepreneurs, thus additionally limiting the size of the Growth Factory. The position of the local business incubation manager at Stege is occupied by the serial entrepreneur himself and his personal assistant.

The Growth Factory in Næstved was opened in the start of November in 2010 as part of the first pool of Growth Factories. The establishment of the business incubator in Næstved was cofinanced by the municipality of Næstved and the local business authority. The local business authority of Næstved is in charge of managing the daily operation of the Growth Factory, and hence one of the local trade consultants was appointed as the local business incubation manager. The Growth Factory in Næstved was placed in the same building as an office hotel that was managed by another business-friendly organization in Næstved, which after some time closed down, after which a private company took over the facilities of the office hotel. There is room for 20 incubatees from all sectors and industries at the mixed business incubator in Næstved.

The Growth Factory in Greve was meant to open during 2010; however, owing to fire regulation issues (a new fire exit for the business incubator had to be built), the opening was postponed to June 2011. As in Næstved, the Growth Factory in Greve is located as part of another office hotel that was established there several years ago. Furthermore, the Growth Factory in Greve is cofinanced by the municipality of Greve, and the local business authority in Greve is also in charge of the daily operations. However, owing to financial restraints resulting from a different cofinancing agreement than in Næstved, the local business incubation manager in Greve is also

the receptionist of the office hotel that Greve's business authority runs, and thus her time is rather limited, although there is space for 20 incubatees as in Næstved. The Growth Factory in Greve is also a mixed business incubator open to all sectors and industries.

The Growth Factory in Roskilde was opened in January 2011 as part of pool 2. The Growth Factory in Roskilde is one of the few that has a fixed theme, which means that the incubatees can join this business incubator only if they are categorized as creative businesses or operating within the experience economy. This particular theme for the Growth Factory in Roskilde was selected due to its location inside another type of office community called Musicon that hosts and supports only creative entrepreneurs and organizations. Roskilde Festival is an example of an organization that has been at Musicon for several years. The municipality of Roskilde is the cofounder of the Growth Factory in Roskilde, and one of the employees from the secretariat of Musicon is the local business incubation manager. Due to the thematic focus, there is room for only 15 incubatees in Roskilde.

The Growth Factory in Holbæk was launched in February 2011 and is the largest business incubator of all the Growth Factories, with room for 44 incubatees from all industries, which makes it a mixed business incubator. For the launch of the business incubator in Holbæk, two storage buildings owned by the municipality of Holbæk were renovated. This was done so that Holbæk's local business authority could also be at the same location as the Growth Factory in order to provide a professional business-friendly environment and entrepreneurship center where the incubatees and other local entrepreneurs could go for support and advice. The Growth Factory is cofinanced by the municipality of Holbæk, which has sourced out the daily operation and maintenance of the business incubator to the local business authority. A new employee was hired by the local business authority as the local business incubation manager. However, this person is also working for the business authority on other tasks unrelated to the Growth Factory in Holbæk.

The Growth Factory in Slagelse was opened in April 2011 as part of pool 2, which was released some months earlier. The cofinancer of the business incubator in Slagelse is the municipality of Slagelse, and, as with the Growth Factory in Holbæk, an old building in Slagelse was renovated and turned into a business incubator. The local

business authority also relocated to the same building as the Growth Factory as part of an overall initiative from the municipality of Slagelse to create one entrance for guidance and support for entrepreneurs and companies in Slagelse. As in Holbæk, the local trade council also hired a new employee as the local business incubation manager. There is room for 20 incubatees at the business incubator in Slagelse. Originally a medical theme was introduced for the Growth Factory, as a large hospital will be built in Slagelse; however, so far there have not been many incubatees with a medical focus, and thus the business incubator is more a mixed incubator open for entrepreneurs from all industries and sectors.

The Growth Factory in Ringsted was opened in February 2012 as part of the third and last pool of Growth Factories. The cofinancer is the municipality of Ringsted, and the local business authority is the operational partner and also maintains the role of local business incubator. However, as the Growth Factory in Ringsted has room for only 12 incubatees, the local business incubation manager, who is also a business development manager at the business authority, has only a few hours to dedicate to the role of local business incubator council. The business incubator in Ringsted is open to all types of entrepreneurs within all industries and is furthermore located in the same building as local office hotel, which is called the Creative Cadaster.

The Growth Factory in Faxe was also opened in February 2012 at the same time as the Growth Factory in Ringsted. As with most of the Growth Factories, the cofinancer is the municipality of Faxe, and the local business authority, Business Faxe, is the operational partner. As with the Growth Factories in Slagelse and Holbæk, a new employee was hired as the local business incubation manager; she is mostly at the Growth Factory, even though she is employed by Business Faxe, whose office is in another part of the city. However, the Growth Factory in Faxe is in the same building as the town hall of the municipality of Faxe. The business incubator in Faxe is for entrepreneurs from all sectors and industries and has room for 20 incubatees.

*The Growth Factory on Lolland-Falste*r is at two different locations, and both were opened in June 2012. The Growth Factories are located in each of the municipalities on Lolland-Falster as both of the municipalities are cofinancers. Both business incubators have room for 15 incubatees and are open for entrepreneurs within all sectors and industries. One of the Growth Factories is located in the municipality of

Guldborgsund, the other in the municipality of Lolland. The two municipalities have appointed the local business authority, called Business Lolland-Falster and representing both of the municipalities, as the operational partner that also upholds the role of the local business incubator manager for both of the Growth Factories on Lolland-Falster. In practice, this means that there are two different business incubator managers connected to the Growth Factories, which are both mixed business incubators.

The Growth Factory in Køge was also opened in June 2012 and is in the same building as an office hotel. The location was partly chosen in order to place the Growth Factory in a special industrial area of Køge where many other local companies are. This industrial area is known as the White City. The office facilities of the Growth factory in Køge were newly renovated with room for 20 incubatees from all industries and sectors. The local business authority of Køge has also moved into the same facilities as the Growth Factory and is in charge of the day-to-day maintenance of the business incubators; one of their employees also serves as the local business incubation manager. Overall, the cofinancer of the Growth Factory in Køge is the municipality of Køge.

Regarding the 11 Growth Factories, it is clear that many of the individual business incubators are similar in terms of size, financial setup, and location in relation to other local business-friendly initiatives. However, it is also clear that some of the business incubators differ significantly from others, especially in terms of size – e.g., the business incubator in Holbæk has room for 44 incubatees while the business incubator in Stege has room for only 6 incubatees. Furthermore, only a few of the business incubators are limited to a specific industry, e.g., the business incubator in Roskilde, which accepts incubatees only from creative industries, as well as the business incubator in Slagelse, which targets incubatees within medical-related industries. Despite these differences, all of the 11 business incubators share the same business incubation program, which is to some degree the essence of business incubator initiatives because it is via the business incubation program that the incubatees are meant to be supported, guided, and developed during their entrepreneurial process and development. The following section introduces and discusses the different elements of the business incubation program of the Growth Factories.

6.3 The business incubation program

Besides offering flexible office space for the incubatees, the Growth Factory concept consists of a business incubation program that the incubatees can participate in up to 3 years. The incubatees pay between 1,250 and 5,000 DKK per month, depending on how much office space they need. When the incubatees lease office space at the Growth Factories, they automatically become part of the business incubation program without paying extra. During this business incubation program, the incubatees have to participate in some of the following business incubation elements: business support from business consultants from Business Link Zealand or mentors from Connect Denmark (a partner in the Growth Factories), educational courses developed by Roskilde University, and formal/informal networks created via the Growth Factories. The overall business incubation process of the Growth Factories is depicted in Figure 7 below. In order to get a better understanding of the business incubation program, each of the business incubation elements is introduced and explained separately.

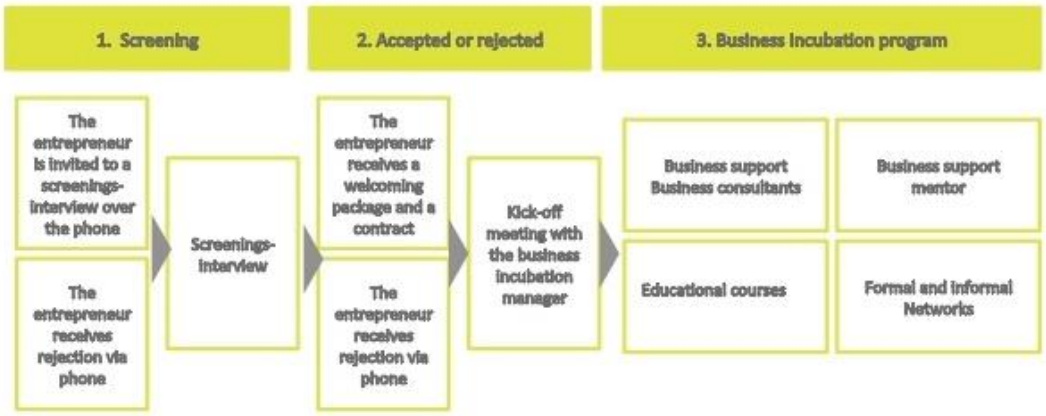

Figure 7. Growth Factory process created by Business Link Zealand.

Business support from the business consultants typically starts with an analysis of the state of the incubatee's business based on a business development tool that the business consultants use. This tool focus on four fundamental areas of any business, namely business concept (business idea, market position, product, and customer portfolio), customer relations (network, marketing and sales, and overall communication strategy), organization (ownership and board of directors, employees, partnership, legal issues, and business processes), and finally operations

(management accounting, financing, IT systems, facilities, and production/project management). The incubatee's business-relevant issues and challenges are then discussed with the business consultants.

Business support from the mentor is very similar to the business support process that the incubatees have with the business consultants. However, the mentors do not use a specific business development tool, and they are furthermore not employed by Business Link Zealand as the business consultants are. They are volunteer members of Connect Denmark, a private nonprofit organization with an established network of experienced businesspeople who assist and guide entrepreneurs and companies with a high growth potential on a volunteer basis. Thus, the mentors for the business incubation program are experienced businesspeople and entrepreneurs that provide the incubatees with business support based on their own professional experiences and knowledge.

The educational courses are developed and executed by Roskilde University based on its experience teaching entrepreneurship, business, and management. The educational courses are designed and coordinated in collaboration with one of the regional business incubation managers. The educational courses target the following educational areas: strategy and management, financial management, personalized communication, and marketing and sales. In total, an educational course consists of 10–12 hours of teaching taught in three sessions, and only around 20 incubatees are accepted per course. The educational courses are organized so that the incubatees can work with their own businesses in relation to the educational theme being taught. This provides the incubatees with new knowledge but also concretely supports the incubatees in creating action plans, business plans, management accounting, and product improvement.

Formal and informal networks of the business incubation program are the formal structured networks organized by one of the regional business incubation managers and the more informal networks that occur among the incubatees at the business incubators by themselves or initiated by the regional or local business incubation managers. As mentioned, one of the regional business incubation managers is responsible for creating structured formal networks that benefit the incubatees. This has been done by establishing following three concrete networks:

- *Sales and marketing:* This network is for incubatees that experience sales and marketing challenges in their entrepreneurial process. The regional business incubation manager coordinates different meet-ups for the group where different themes within the area are discussed.

- *Clean-tech network:* This network is for incubatees who operate within clean-tech industries. The regional business incubation manager has arranged for a sequence of company visits where the network group visits larger clean-tech companies in the region of Zealand and learns from their experiences.

- *Expert network:* This network is for all incubatees that operate a consultancy-based company. The network has been established as a medium where the incubatees can form partnerships and gain insight into what competencies other incubatees possess. Furthermore, the expert network also provides the business consultants with knowledge of the incubatees' areas of expertise, which can be communicated further to potential new customers. The network is centered on a software app that contains the abovementioned information about the incubatees.

The informal networks in the business incubation program are the more naturally emerging networks that exist among the incubatees at the business incubators. The networks are established by the incubatees themselves; however, they can also be initiated by the regional and local business incubation managers organizing different professional/social events and informational meetings at the business incubators. Furthermore, incubatees from one business incubator can use the other business incubators around the region for, e.g., client meetings or networking purposes with the other incubatees.

Before entrepreneurs are accepted into the business incubator program and thus given office space at one of the 11 Growth Factories around the region of Zealand, they have to go through a screening interview. Screening the incubatees is necessary in order to ensure that the entrepreneurs have growth potential and can therefore live up to the objectives of the business incubation initiative, which are to (a) increase the survival rate of the incubatees to 80% compared to 50% outside of the business incubators, and (b) increase growth for the incubatees in terms of 20% higher revenue or number of employees and/or 40% increase in export among the

incubatees compared to a control group. The screening process consists of a screening interview conducted by one of the regional business incubation managers based on a screening manual that the incubatees fill out prior to the screening interview; sometimes the screening interviews are conducted first and the incubatees fill out the manual afterward. The local business incubation managers also participate in the screening interview when possible. Either way, the screening interview is based on the screening manual, which covers the following areas:

- *Business foundation:* business model, elevator pitch, customers, partners, products/services, sales and marketing strategy, budgets, available financial resources, and current revenue
- *Growth ambitions:* expected revenue, export, and number of employees in 3 years, general outlook for the company in 3 years, and biggest challenges for growth
- *Personal ambitions:* motivation for becoming an entrepreneur, description of the incubatee's personality, collaborative competencies, expected contribution to the business incubator's social environment, and general expectations of participation in the business incubation program

In conclusion, the screening interview consists of a range of questions with the purpose of determining whether a potential entrepreneur has a viable business idea/concept, possesses the right social competences for collaborating and networking with other entrepreneurs, and finally, is ambitious enough to enter the Growth Factories.

7. Methodology and research design

7.1 Introduction

In empirical research a number of choices have to be made as to what is to be studied and how these studies are to be conducted. (Wiklund, 1998, p. 73)

This chapter discusses the methodological choices made regarding the research questions set forth in chapter 3. In scientific research, it is essential to clarify which philosophy of science the author has chosen to approach the field (ontological platform). It is also necessary to determine methods for understanding the field (epistemological platform) when collecting empirical data. Hence, this chapter starts from the chosen underlined scientific philosophical perspective and discusses the overall research design and the applied methods.

7.2 Scientific philosophy – critical realism

This section discusses the scientific philosophical approach applied throughout the research process, namely critical realism. The scientific philosophical considerations are presented to provide a frame of reference for understanding how the research produces the knowledge that is observed and processed throughout the dissertation.

The foundation of the dissertation is the researcher's view of reality as something that exists independently of the observations and interpretations that are presented in this dissertation; within critical realist ontology, reality exists regardless of whether it is observed. It is acknowledged that the events, phenomena, and observations presented are to some degree determined by subjective interpretations. By applying a critical realistic approach, it is possible to explore a subjective insight of phenomena, such as the entrepreneurial process and development and business incubation–related events, and to extract central observations into a discussion of a more general objective reality.

According to Bryman and Bell (2003), critical realism identifies the authenticity of a natural process and the events and discourses of the social world that are connected to the process. Furthermore, it is only possible to improve, change, and understand the social world if the structures that create these events and discourses are known. From an ontological perspective, Jespersen (2009) has stated that critical realism

views reality and objects from three levels – the empirical, actual, and deep levels – and that it is important for researchers to be aware of the three different ontological levels and their interconnected constellation. From a critical realism perspective, a field of study can be compared to an iceberg; only a small part of the iceberg can be observed, while the rest is hidden below the sea (Fuglsang & Olsen, 2009).

The empirical level is considered to be the domain in which observations are carried out and empirical data are collected, and can be referred to as the top of the iceberg. In critical realism, observations, facts, and data are theory laden, both implicitly and explicitly, and this affects the empirical level (Van De Ven, 2007). The actual level consists of phenomena and events, which exist regardless of whether they are observed. Furthermore, on this level it is considered to be empirically possible to generate experience about the field of research (Buch-Hansen & Nielsen, 2005). Seen from a critical realist perspective, reality is much more complex than what we experience; reality is therefore different from the actual and discovered world and is experienced differently based on one's position and given context. A standpoint for critical realists is therefore that it is not possible to discover everything empirically, and that a field of research and reality can be experienced differently.

The deep level involves structures and mechanisms that are not directly observable and that, under certain circumstances, support and cause events and phenomena within the actual level (Buch-Hansen & Nielsen, 2005). Structures and mechanisms can create or modify already created phenomena, and in the critical realistic ontology, mechanisms are influenced by other mechanisms depending on present contextual conditions (Buch-Hansen & Nielsen, 2005). Thus, critical realists consider the structures and mechanisms that construct events and generate phenomena to be the primary study object for researchers (Buch-Hansen & Nielsen, 2005). In relation to the three different levels, Jespersen (2009) has argued that the overall scientific challenge is to interconnect the three different levels; this interconnection is a precondition for understanding the casual relations of a field of study, which in this dissertation is how being part of a business incubator might influence the incubatees' perception of their entrepreneurial process and development. The empirical data collection process for this dissertation occurs in the empirical and actual level, depicted in Figure 8, which provides an overview of the data collection process and

the interrelationship between the different elements and processes of investigation of this dissertation. By contrast, the deep level, which is not observable, is approached through discussions of entrepreneurship and business incubation theories and learned experiences from the empirical and actual level.

Critical realists reach conclusions via retroduction, an approach seen as an alternative or supplement to the more traditionally applied scientific methods of deduction and induction (Buch-Hansen & Nielsen, 2005). Retroduction is closely related to abduction, in which inductive and deductive research strategies can be used jointly; instead of seeing them as contradistinctions, critical realists argue that they should be applied and combined (Jespersen, 2009). According to Buch-Hansen and Nielsen (2005), the use of retroduction often implies that the research process starts with a phenomenon or a given act of interest, after which the search for conditions of cause begins in order to figure out how this phenomenon/act could happen. This also means that critical realism emphasizes empirical experimentation; however, a generalization of the empirical experimental outcome is not possible, as reality from a critical realist's point view is to be considered as an open system consisting of underlying dependent constructions (Van de Ven, 2007).

By using the perspective of critical realism in this dissertation, the forthcoming research design drew on abduction by first introducing a deductive approach via a theoretical review of business incubators and the entrepreneur. Thereafter, an inductive approach was carried out based on semistructured interviews and document studies, with the purpose of uncovering different layers of the business incubation phenomenon and how it influences incubatees and their entrepreneurial process and development. After that, an deductive method was applied again when the qualitative findings were related to the entrepreneurial theoretical framework in order to detect theoretical elements of importance that deserved to be investigated further in a subsequent survey, which was distributed to a larger number of incubatees and again inductively explored how incubatees and their entrepreneurial process and development are influenced by business incubators and the different elements of the business incubation program. Finally, the mechanisms and structures that were activated during the business incubation and incubatee process are discussed.

7.3 Research design

In order to address the research questions and purpose, this dissertation firstly introduces a qualitative research approach followed by a quantitative approach.

For both the qualitative and quantitative approach, incubatees from the Growth Factories business incubator initiative were the subjects of investigation. In this way it was possible to gain a qualitative understanding of the incubatees, which led to identifying elements of perceived influence that should be investigated quantitatively within the whole population of the incubatees from the Growth Factories, thereby ensuring that results were representative of the population of the Growth Factories. Accordingly, the research strategy of this dissertation was to uncover which elements of the business incubation process are perceived as most influential by incubatees using both qualitative and quantitative investigation. In the qualitative study, it was also possible to investigate how incubatees perceived being part of a business incubator as influencing their entrepreneurial process and development and thereby identify qualitative findings that could be reflected in the entrepreneurship literature. These findings were then investigated further quantitatively. This procedure was intended to generate a solid theoretical understanding of the incubatees and their entrepreneurial process and development, which could assist us in formulating a set of propositions that could form the basis of the survey distributed to the whole population of incubatees from the Growth Factories.

Qualitative studies in combination with surveys are, according to Petticrew and Roberts's (2003) typology of evidence (see Appendix 2), a method that can create an understanding of processes as it is "likely to have crucial lessons for those wanting to understand the process of implementing an intervention" (Petticrew & Roberts, 2003, p. 528). An intervention or program is seen as a process of complex activities that produce an outcome that can be evaluated, and by including both qualitative and quantitative data in a research design, it is possible to explore both *what* and *how* of a case study (see Appendix 3) (Yin, 1993, p. 101). The typology of evidence was initially developed for health care decision makers; nevertheless, it can be applied to other areas of research as it focuses on how different research methods can be used to answer different research questions (Petticrew & Roberts, 2003).

The combination of qualitative studies and surveys has been widely applied within the literature on business incubators. For example, Mian (1997), in his study of University Technology Business Incubator (UTBI), conducted interviews with facility staff, managers, and state and local officials from a business incubator initiative. The interviews were complemented with mail surveys sent out to 87 of UTBI's companies. Rice (2002) collected data using comprehensive surveys and in-depth interviews with open-ended questions of 32 entrepreneurs participating in business incubation programs and 8 business incubation managers. Soetanto and Jack (2013) investigated how incubatees used the internal and external networks of one business incubator based on questionnaire answers from 62 respondents and seven post-survey interviews. Löwegren (2003) applied a case study approach of four NTBFs divided into small and large companies. These case studies were followed by a survey (based on the case studies) of 158 companies from 15 Swedish science parks. Ebbers (2013) collected 101 completed questionnaires from four different business incubators in his research on incubatees and their networking behavior, and Meru and Struwig (2011) base their study on answers from 124 incubatee companies.

This dissertation drew on some of the abovementioned experiences as both interviews and a survey were included in the research design. Additionally, document studies were conducted in relation to the Growth Factory and the selected case entrepreneurs and their companies. The qualitative data collection process was divided into two bordering periods, which made it possible for the researcher to see whether the incubatees from the first data collection period perceived being part of a business incubator differently at the second data collection point, and thus whether the perceived influence in the incubatees' entrepreneurial process and development develops over time spend in the business incubator. For the qualitative inductive research approach, interviews of four different case entrepreneurs from the Growth Factories were conducted twice 6 months apart, after which the recordings of the interviews were listened through and written into a case. Each case was written based on the two interviews, before and after, and then analyzed. Based on qualitative findings from these cases, a set of propositions was set forth from which a survey was created and distributed to all the incubatees located at the Growth Factories. The qualitative empirical data was collected over a 6-month period from February to August 2012, and the survey was designed and distributed to all incubatees in

December 2012. This particular period in time was selected because by then, the Growth Factories was to have entered an operational phase with around 150 incubatees in the program, and thus it would be possible to obtain enough answers from respondents to conduct a quantitative analysis. Figure 8 displays how the empirical data collection phase is divided into periods in order to create different points of analysis, making it possible to compare and analyze the different stages and thereby see how the different elements of the Growth Factory business incubation program were perceived as having influenced the incubatees' entrepreneurial process and development over a specific period of time.

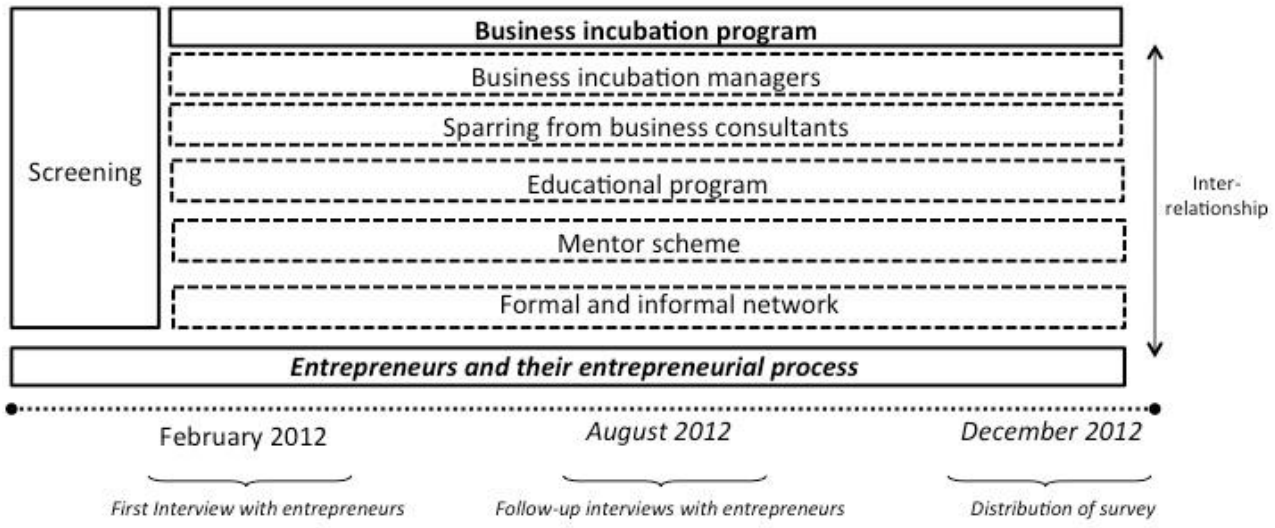

Figure 8. Overview of the data collection process.

7.4 Case studies

In order to understand and analyze how the incubatees' perceived that their entrepreneurial process and development might have been influenced by business incubators, case studies of four incubatees were conducted.

Case studies are in-depth studies of how people act and interact with others within their own boundaries. According to Maaløe (2002), the case researcher is reliant on the cases and the tasks undertaken in the presence of the researcher. This means that the researcher is unable to control for influence of the social environment of the

group of people being investigated. Nevertheless, the researcher must be aware that his/her presence might constitute an element of influence (Maaløe, 2002).

Robert K. Yin is considered the most quoted researcher in academia in regard to literature on case studies, and it seems reasonable to claim that all authors who touch upon this area have, in one way or another, established their knowledge base from thoughts originating from Yin. Yin (1984) has stated that a case study is an empirical exploration that seeks to investigate a concomitant phenomenon when the interlink between context and occurrence is not self-evident to the researcher. This is much aligned with the scientific philosophy of critical realism, which emphasizes that an empirical phenomenon consists of different layers, not all of which are directly observable. Earlier in this chapter, this was supported by Jespersen (2009), who stated that critical realism views reality from three levels – the empirical, actual, and deep levels. Yin (1984) has also emphasized that the observation of the empirical object has to happen within the limitations of the phenomenon's own existence. This view is supported by Easton (2010), who argued that the main gain of applying case studies is that it offers a way of understanding a phenomenon comprehensively and in depth. Maaløe (2002) stated that the essence of case studies is that there are social circumstances and certain events in the empirical field that are discoverable only if the researcher tracks the subjects of investigation closely, observing what they do and how they associate with peers and people in their own environment. If the abovementioned circumstances are considered to be related to the research objectives, Maaløe (2002) has claimed, then case research is a necessity.

Both Yin (1984) and Easton (2010) have stressed the use of case studies as a method for up-close investigation of specific areas of interest within a given context; they emphasized that in order to explore something profoundly, it may be preferable to apply multiple methods of investigation. This is also a conclusion of Maaløe (2002), who related how a series of observations conducted on hospitalized people uncovered a pattern among the patients and their behavior in a number of situations, which was then framed into a determined category in order to label and understand this particular behavioral phenomenon. However, by adding interviews to the observational data, the patients elaborated on their behavior, thereby changing the initial proposed notions of the phenomenon being investigated. Rendtorff (2007)

argued that in order to live up to the increasing scientific standards within social science, case studies have to use different methods simultaneously, such as document studies, interviews, and participant observations. According to Easton (2010), case studies built on critical realism are specifically suited for researching rather clearly constrained but complex phenomena such as interorganizational relationships and less suited for studying individual behavior, though this can also be done. This might be because critical realism generates contextual findings, which can explain and uncover a phenomenon or development at given time and in a given context but might produce different results at another point in time, making generalization of the findings difficult. With regard to this dissertation, case studies built on critical realism should be an appropriate approach as the individuals studied are entrepreneurs within a constrained environment of business incubators at a given time, which to some degree could be seen as being an interorganizational context as the selected case entrepreneurs interact with peers, business support consultants, business incubation managers, etc. within the business incubators. Maaløe (2002) has referred to this type of case study as "embedded multi" (originating from Yin, 1984), as several case units are studies across time with a special focus on encased fields.

In general, the use of qualitative methods has gained recognition in entrepreneurship research, and the case study method has contributed to this development (Perren & Ram, 2004). According to Perren and Ram (2004), case studies in entrepreneurship have been either situated around a milieu of social actors or focused on the individual entrepreneur. The two different approaches are used as boundaries delineating the research focus of a study. Along those lines, this dissertation operates across these boundaries as the focus is on the entrepreneur (individual level) and how he/she is influenced by business incubators (milieu).

7.4.1 Selection of cases

Selection as well as identification of a number of applicable cases for analysis is difficult in any study, thus the following section recounts the selection process of the incubatees in the four case studies. Based on previous business incubation case studies, it is hard to identify one similar approach or a preferred number of cases for researching entrepreneurs and business incubators. For this dissertation, the case studies were to be used to identify elements of entrepreneurial influence (based on

the entrepreneurial theoretical knowledge) that were relevant to explore further via a survey distributed to the whole population of incubatees at the Growth Factories, hence supplementing the qualitative methods with the quantitative benefits of the survey. Thus four cases were found to be sufficient, especially as the cases were followed and interviewed twice over a 6-month period. If we look to the business incubation literature to identify other studies based on case research, we find that Löwegren (2003) used four cases for her dissertation of NTBFs in science parks based on a selection process of different industries and different company sizes. Aaboen (2007) conducted a case study of one business incubator in search of network ties among three business incubation business developers and eight founders of NTBFs using 11 semistructured interviews. Bigliardi, Dormio, Nosella, and Petroni (2006) based their study of evaluation of science parks' performance in Italy on four different science parks, and Voisey et al. (2006) examined an individual case study of one business incubation project by interviewing 12 entrepreneurs. Thus, there seems to be no preferred number of cases for business incubation research.

Regarding selecting cases for qualitative research, Eisenhardt (1989) has highlighted two main sampling techniques. *Theoretical sampling* is, as the name indicates, a procedure that is chosen for theoretical reasons rather than, e.g., statistical purposes. The point of theoretical sampling is to select cases that can reproduce or extend the selected theoretical considerations relevant for the study. *Statistical sampling* is the other sampling technique and often relies on random selection of cases from a defined population with the purpose of collecting statistical verification of different variables of the population. Barratt, Choi, and Li (2011) declared that cases also can be selected based on what they refer to as polar extreme types of cases, selected for contrast and thus representing the extremes of a population. Furthermore, Barratt et al. (2011) also emphasized the possibility of selecting prominent cases from a population in order to create results for best practices and benchmarking reasons. Accordingly, the selection of sampling techniques should be aligned with the purpose and objective of the research and therefore the case studies. The purpose of introducing case studies in this dissertation is to explore incubatees and how being part of a business incubator influences the incubatees' perception of their entrepreneurial process and development, which then should provide us with a better understanding of what elements in the business incubation process are perceived as most influential. Thus, it

should be possible to extract some common feature from the case studies that can then be further investigated, verified, or dismissed by surveying the whole population of incubatees. Furthermore, the purpose of the dissertation is largely theory driven, meaning that the researcher looked to the theoretical entrepreneurship literature to gain a better understanding of business incubators but also of the incubatees, and thus the selection of cases should also be a reflection of the theoretical knowledge that was gained through the theoretical frameworks from this dissertation. Hence, the case sampling technique for the case studies was largely inspired by theoretical sampling. Since the incubatees and their entrepreneurial process and development were to be explained by theoretical explanations, the selected cases also needed to be as representative of the studied population as possible, which led to inspiration from a statistical sampling technique, although not random sampling. Accordingly, the following section explains how the four cases were selected using a mainly theoretical but statistical-inspired sampling technique.

Using Aernoudt's (2004) typology of business incubation (Table 1), the Growth Factories is overall classified as a combination of mixed incubator and economic development incubator as its objective is to create start-ups as well as regional development, thereby involving all sectors and industries. This means that the selected entrepreneurs could represent a mix of industries. As the largest group of incubatees (44%) operated within the line of business categorized as liberal services[1] and information technology[2] (19%), this also became a case selection criterion as it seemed most representative to select cases from each of these industry groups. See Figure 9 for the lines of businesses based on the population from the Growth Factories.

[1] Refers to entrepreneurs that sell their knowledge, often as consultancy services.
[2] Refers to development and sales of products/services associated with information technology.

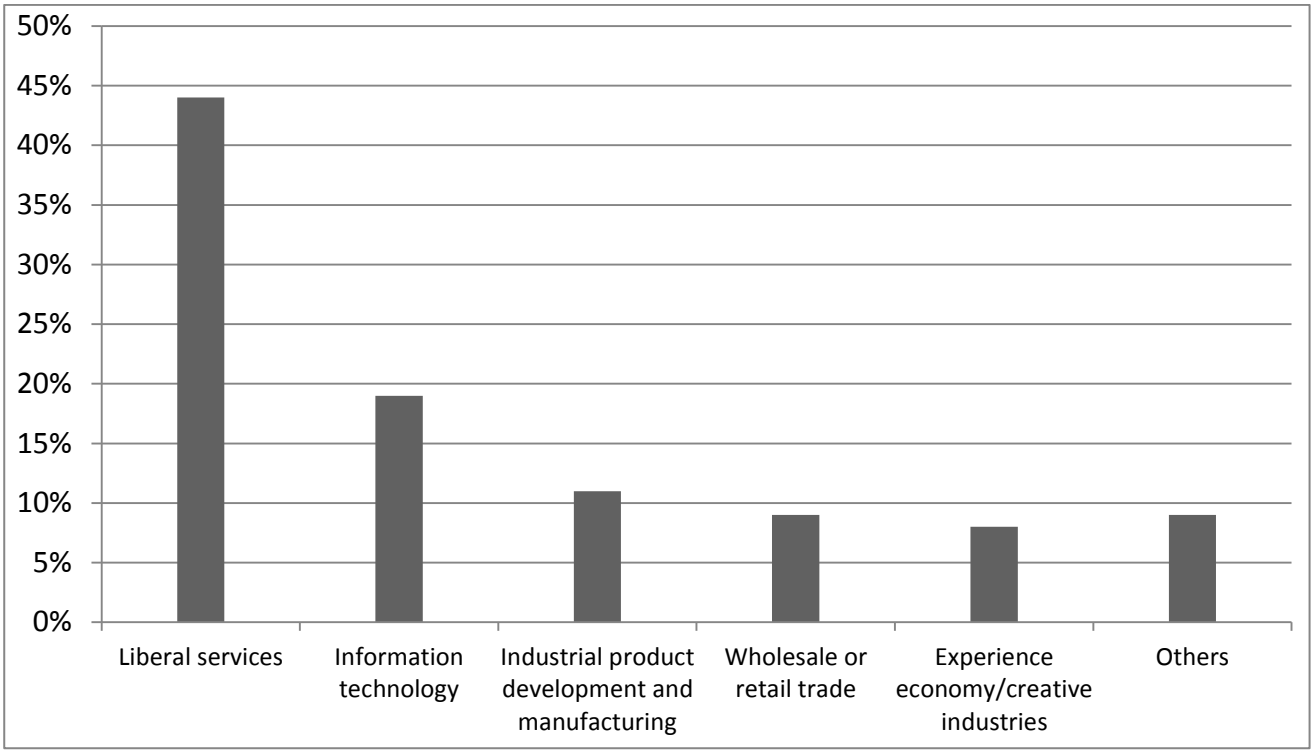

Figure 9. Population of the Growth Factories (line of business).

As depicted in Figure 10, 63% of the total population of incubatees had an organizational size of only one employee, which indicates that most of the incubatees were also the founders/entrepreneurs of the companies. Thus, as the vast majority of the incubatees and their companies were managed by only one entrepreneur, and as this dissertation focuses on the entrepreneurs and their entrepreneurial process and development, the case incubatees should also be the founding entrepreneurs of the companies located at the Growth Factories; thus, this also became a case selection criterion.

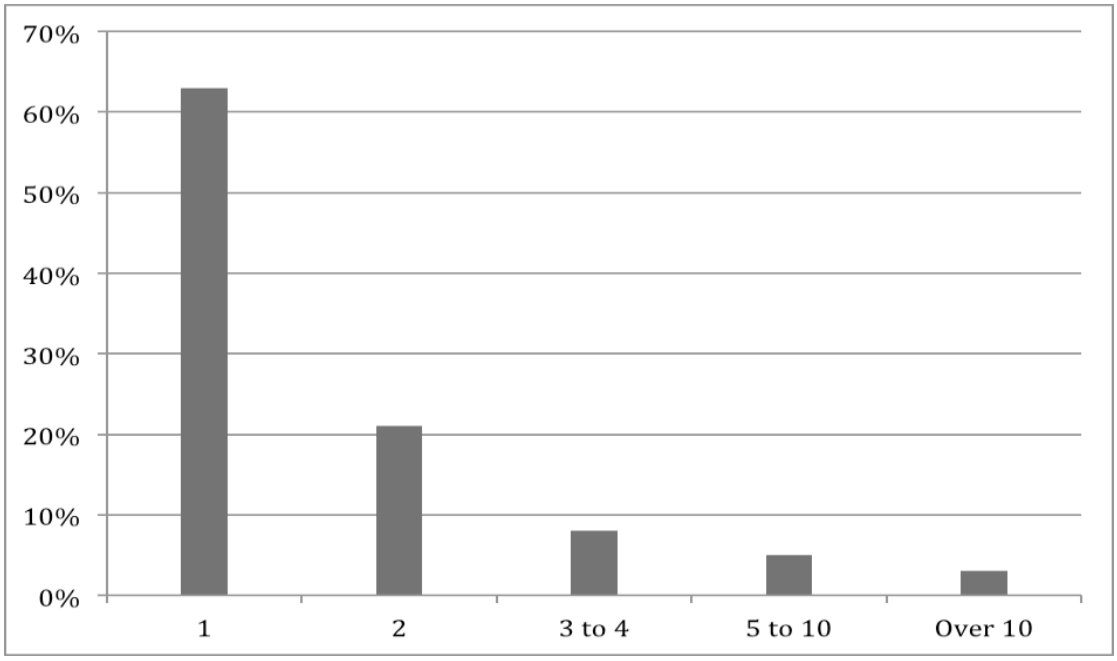

Figure 10. Population of the Growth Factories (organizational size).

As pointed out in the literature review, survival rates for entrepreneurial companies are often considered to be around 40–50%; hence there was a possibility that some of the chosen case companies would close down during the data collection process. In this situation, a new case entrepreneur from the same business incubator would not be included in the study, as this would simply be representative of the risky and insecure environment entrepreneurs operate in.

Despite the fact that the different Growth Factories share the same infrastructure, the different locations differ in size and have different business incubation managers. Consequently, in order to investigate whether the incubatees from the different business incubators were representative of the whole population or whether there were any significant differences, perhaps due to different regional business incubators, selecting cases from different business incubators also became a selection criterion.

In order to investigate how incubatees perceive the influence of business incubators, the selected case entrepreneurs must have participated in the business program for some time, otherwise they would not have encountered the different support elements the business incubation program offers. Consequently, it became a case selection criterion that the selected incubatees for the case studies had to have been situated at

one of the business incubators for a minimum of 6 months so that they had used the services offered.

As identified earlier, in the review of the entrepreneur, there is a difference in how entrepreneurs think and act based on previous entrepreneurial experiences (novice/experienced entrepreneurs); thus this dissertation selected two experienced and two novice entrepreneurs as cases in order to investigate whether entrepreneurial experience is a significant element that needs to be investigated further in relation to the whole population of the Growth Factories. Furthermore, as the population of incubatees consisted of 60% novice and 40% experienced entrepreneurs, this selection criterion seemed rational.

In summary, the following selection criteria were applied to select the four case studies:

1. Cases must represent both liberal services and information technology in terms of line of business.
2. Cases must be managed by only one entrepreneur (the subject of the case).
3. Cases must be from different business incubators.
4. Cases must have been situated at the business incubators for at least 6 months.
5. Cases must include both novice and experienced entrepreneurs.

Based on these case selection criteria, the following incubatees were selected for the case studies (see Table 4). As only six of the business incubators were operational and consolidated when the cases were selected and the selected case studies had to meet the selection criteria, two of the cases were situated at the same business incubator in Holbæk, which is also the largest of all the business incubators, with room for 44 incubatees. The other incubators have room for around 20 incubatees.

ID	Entrepreneur	Entrepreneurial Type	Industry	Business incubator	Research Method
#1	Troels	Novice	IT	Næstved	Document studies and interviews
#2	Ziya	Experienced	Consultancy services	Greve	Document studies and interviews
#3	Sean	Experienced	IT	Holbaek	Document studies and interviews
#4	Heidi	Novice	Consultancy services	Holbaek	Document studies and interviews

Table 4. Selected cases.

The case studies were created using interviews and document studies. These methods are introduced below before the analytical approach of the collected qualitative data is discussed.

7.4.2 Interviews

As shown in Table 4, semistructured qualitative interviews were carried out with the selected case entrepreneurs from the Growth Factories. Semistructured interviewing is an approach where the researcher/interviewer has a series of general questions following an interview schedule or interview guide; however, the interviewer can change the sequence of questions depending on the specific interview and can also ask further questions in order to obtain relevant responses that might be of particular interest for the respondent (Bryman & Bell, 2003). This interview form is based on predetermined flexible themes, hence giving the researcher a less firm structure that makes it possible to explore new themes during the interview (Kristensen, 2007).

Semistructured interviewing can be used to provide researchers with an understanding of processes by asking participants to reflect on the path leading to or after an event (Bryman & Bell, 2003). This interview approach was chosen because some interview structure is needed when collecting data that should be comparable across different cases. One should be aware that when using semistructured interviews, the collected data are considered to be value loaded and thus demanding for the researcher to analyze (Ghauri & Grønhaug, 2005).

The interview guide included topics and themes that were identified through document studies, and the interviews also explored elements from the business incubation literature. These elements included:

- The overall business incubation program
- The screening process of the entrepreneur
- The influence of the business support consultants and mentors
- The use and access of formal and informal networks through the business incubator
- The role of the business incubation managers
- The influence of the educational courses
- The entrepreneur's development within the business incubator

The conducted interviews were recorded, written as cases, and afterward analyzed. As part of the appendix section, audio material of the eight case interviews has been attached as documentation for the case studies. All of the interviews were conducted on site at the business incubators, and each interview lasted for about an hour.

7.4.3 Document studies

According to Lynggaard (2010), document studies is one of the most frequently applied research techniques within social science, and it is almost impossible to imagine empirical research that does not draw on document studies. Lynggaard (2010) broadly defined documents as language that is presented in a text, including everything from policy papers, expert reports, and minutes of meetings to news articles and company newsletters. Document studies can be methodologically applied in different ways depending on the research focus and can also be used as a main research methodology where documents are systematically analyzed, e.g., over time using specific collection techniques (Lynggaard, 2010). For this dissertation, document studies were used to produce background information related to the chosen cases and their companies. Additionally, document studies played a central role in describing the business incubation program and its vital support elements. Documents identified for use in understanding the Growth Factories include an EU application that the business incubation program has been built upon and that has furthermore funded half of the project. In addition, documents related to external communication material (including

the Growth Factories website[3]) targeting external stakeholders – e.g., customers, partners, politicians – are included.

For the cases, document studies were concentrated around their companies and business ideas. This could include business plans, sales and marketing material, product/service catalogues, websites, information from the screening process, etc. The background information gained from the document studies was used when conducting the interviews and writing the cases.

7.4.4 Presentation of the qualitative data

Based on the collected empirical findings from the interviews and document studies of the four incubatees, this chapter explains how the data are presented in terms of four case studies, which later are the subject of analysis.

In order to investigate how business incubators and the different elements of a business incubation program might influence the perception of incubatees and their entrepreneurial process and development, separate case studies were conducted of four incubatees from the Growth Factories. The case studies were based on eight semistructured interviews conducted with the selected incubatees in combination with document studies. Incubatees were interviewed 2 times with a 6-month interval in order to track any differences in their perception of their entrepreneurial process and development due to the influence of the business incubator over time. The semistructured interview form was based on predetermined flexible themes that gave the researcher the opportunity to explore new themes during the interview (Kristensen, 2007). The interviews concentrated on how the Growth Factories and its business incubation process/program (see Figure 11) might have influenced the perception of the case incubatees based on the screening process, business incubation program, and the regional and local business incubation managers.

[3] www.vaekstfabrikkerne.dk

Figure 11. Business incubation process of the Growth Factories.

Once all of the interviews were conducted, the researcher listened through the interviews and wrote up each one as a long descriptive case. This approach was chosen in order to detect whether any differences in the case incubatees' perception occurred over time. Once the first draft of each case was written, the two cases for each incubatee (first and second interview) were compared and rewritten into one case using the overall themes from the interview in the following structure:

- Introduction to the case incubatee
- The screening process experience
- The overall experience of participating in the Growth Factories
- The perceived influence of the business incubation program
- The incubatees' perception of how they have developed within the business incubator

Finally, all of the cases concluded with a summary of the findings from the case. The chosen case presentation approach made it possible to compare similarities and dissimilarities among the cases, as the abovementioned procedure highlighted and documented any notable differences, changes, and similarities in the perception of the case incubatees and their entrepreneurial process and development based on the interviews.

7.4.5 Analysis of the qualitative data

The main advantage of applying case studies is that they offer a way of understanding a phenomenon comprehensively (Easton, 2010). In order to investigate a potential

influence of the business incubation program, an *explanatory embedded multiple* case study approach as described by Maaløe (2002), originating from Yin (1984), was adopted. This study is *explanatory* because it seeks to understand and explore how business incubators might influence the perception of incubatees in relation to their entrepreneurial process and development, and *embedded* and *multiple* as this dissertation studies several case units with a special focus on encased fields that reflect the situation of entrepreneurs within the constrained environment of business incubators. In terms of the analysis of case studies, Yin (1993) presented two general strategies: one that examines the empirical data in relation to theories, and one that focuses on the description of a case. For this dissertation, the first strategy was selected in order to get a comprehensive theoretical understanding of how the incubatees (entrepreneurs) experienced and perceived the influence of participating in the business incubation program in terms of their own entrepreneurial process and development. In order to find a strategy of analysis that could position the case study findings toward relevant theories, this dissertation looked to Ridder, Hoon, and McCandless Baluch (2012) and their reflections on how case study findings and evidence can be compared with existing theory in different ways for different purposes. Ridder et al. (2012) divided the positioning of case study findings with regard to theory into seeking complementarities or seeking dissimilarities. Seeking complementarities refers to comparing case study findings with the theoretical considerations of the focus areas of research, whereas seeking dissimilarities means that case study findings are compared and analyzed with theoretical concepts from other fields of research not necessarily related to the focus of the study. According to Ridder et al. (2012), there are three different strategies of analyzing and positioning case study findings toward theory: synergistic, antagonistic, and pluralistic positioning.

Synergistic positioning is defined as analytical approach where the empirical findings from case studies are compared to theories from the same academic field as the study, making it possible to establish how the empirical findings might match existing theories (Ridder et al., 2012). According to Rousseau, Manning, and Denyer (2008), seeking complementarities between present theories and new empirical findings can assist the researcher in exploiting existing tested knowledge, allowing the researcher to unfold detected empirical phenomena in detail and in a structured way against

already tested and proven theories from the same field. Thus, this analytical approach is labeled synergistic as the purpose is to compare empirical data with existing theory from the same area of research.

Ridder et al. (2012) described antagonistic positioning as comparing empirical case findings to theoretical considerations and concepts that are not related to the specific academic field, however in the nearness of. This means that the researcher has to possess a wider understanding of theoretical concepts outside of the field of study. An example of this could be is analyzing case study findings from an entrepreneurial field of study with theoretical considerations from the academic domain of management studies. Thus, this approach is mostly applied when the purpose of research is to demonstrate that the findings can be used to adjust already proven theories by combining findings from different domains of research with each other. By applying theories from outside of the theoretical frame of the field, the researcher can create a new understanding of existing theoretical perceptions by adding the case findings to different academic areas, and thus contribute new knowledge in this way (Ridder et al., 2012).

The third form of positioning is called pluralistic positioning and refers to an analytical approach that highlights a complete difference between the empirical studies and the chosen theoretical framework. Thus the researcher has to look for theoretical concepts in academic territories that are very different from the area of study (Ridder et al., 2012). An example of this is using theories from psychology to investigate how entrepreneurs experience their own development. By comparing distant academic arenas, researchers can identify differences in the dissimilar areas and thus use these differences to introduce new arguments for new theoretical concepts.

For this dissertation, it was decided to seek complementarities between existing entrepreneurship theory and the case study findings as the purpose of the qualitative research was to enter into a dialog with existing theoretical literature and thus learn whether any of the empirical findings were reflected in current entrepreneurship research and warranted further investigation. By seeking complementarities and also applying a synergistic positioning analysis approach in this dissertation, it was possible to demonstrate whether the incubatees' *perception* of how they had developed and been influenced could be reflected in the existing entrepreneurship theory, thereby

determining whether the empirical findings could be explained by what we already know from previous studies and theories about how entrepreneurs *actually* develop and are influenced. From this analysis it was then possible to create a set of solid propositions based on both empirical and theoretical considerations that were investigated on the whole population of the Growth Factories.

Concretely this means that the case studies were analyzed based on the theoretical framework presented in chapter 4, in which the entrepreneur and the entrepreneurial process and development were investigated based on what we have learned from the academic literature. As described earlier, each case was written using the same themes, which made it possible to produce comparable summative findings from each case that could be positioned against the same theoretical framework. Thus, in practice this means that the summative findings from each case study could be mapped out based on the cases' perception of the influence of the business incubation process and the development of their own entrepreneurial process at the business incubator. When these findings were mapped out, it was possible to compare the case study findings and from there initiate the analysis. The analysis was conducted by positioning and comparing the mapped-out case study findings with the theoretical considerations related to how prior research understands and explains entrepreneurs and their entrepreneurial process and development. This was done by first comparing and positioning the theoretical understanding gained from this dissertation of how the entrepreneur and the entrepreneurial process are understood. Second and third, the same procedure of analysis was conducted based on the theoretical concepts of entrepreneurial self-efficacy and effectuation/causation, which were also discussed earlier in this dissertation. Accordingly, three theoretical entrepreneurial perspectives drove the analysis of the case study findings using the synergistic positioning technique. When the analysis was completed, the conclusive results were then correlated with our existing knowledge base created during the dissertation, from which a set of propositions was formulated and used to create the survey distributed to the total population of the Growth Factories. The analytical process and framework explained above is also presented in Figure 12.

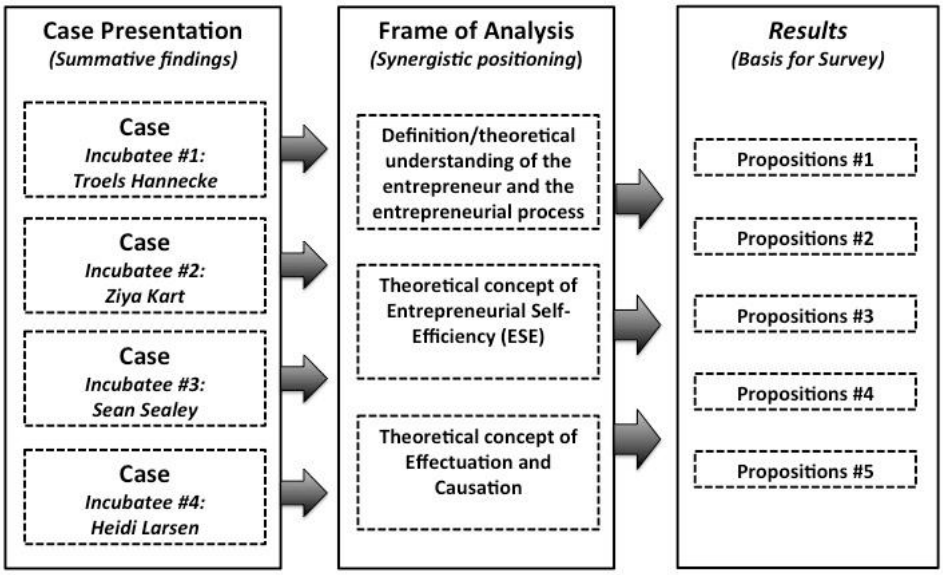

Figure 12. Analytical process and framework.

In order to estimate the level of internal consistency between the case study findings and the survey results, the survey answers/results of the four case incubatees are presented and discussed prior to the presentation of the overall survey results.

7.5 Survey

The use of qualitative interviews supported the survey design by focusing the content of the questionnaire on elements of substantial interest identified from the empirical data, relying also on the literature on business incubators and entrepreneurship, thereby framing the overall thematic focus on how business incubators influence the entrepreneurial process and development. The purpose of the surveys was to investigate, in a larger sample of incubatees, predetermined assumptions and findings identified from the empirical case findings in combination with the theoretical framework of entrepreneurship and business incubation. Furthermore, a survey was considered to be beneficial for this dissertation as the purpose of the study was to investigate how entrepreneurs are influenced by business incubators, and it is therefore important to reach a larger population of incubatees in order to produce solid scientific conclusions. This is aligned with Easterby-Smith, Thorpe, and Lowe (2002), who claimed that "*the main purpose of a survey is to obtain information from, or about a defined set of people, or population*" (p. 135).

According to Bryman and Bell (2003), knowledge obtained from qualitative interview data is very useful in the design of self-completed questionnaires consisting of closed-ended questions. The use of closed-ended questions is considered to be easier for the researcher to statistically analyze and compare (Neuman, 1997). Such an approach is used when conducting large-scale surveys as it is perceived to be quicker and less complicated for the respondents, thereby ensuring a high response rate (Neuman, 1997). A high response rate is needed for this study as there is a rather limited selection of entrepreneurs participating in the Growth Factories who can be included in this study (maximum 160 entrepreneurs).

Ensuring a high enough response rate is always challenging because different quantitative studies and researchers argue for different population sizes and numbers of respondents, as well as response rates. These different standpoints obviously depend on the design and the purpose of the survey, as well as the scientific philosophical viewpoint of the researcher. Löwegren (2003) had 158 NTBFs from a population of 413 respond, which is satisfactory, based on other studies within the same field of research. Studdard (2006) tested hypotheses of how entrepreneurial companies interacted with business incubation managers based on 52 firms using a regression analysis and a 6-point Likert scale. Scillitoe and Chakrabarti (2010) sent their web-based survey to a population of 527 founders, resulting in 42 valid responses. From these examples we can conclude that there is a large difference in the number of accepted responses, and that collecting data via surveys of entrepreneurs often results in low response rates (Dennis, 2003). However, for this dissertation, high response rates were expected due to the fact that the researcher was often present in the business incubators and the entrepreneurs were well aware of the research being conducted and therefore might have been more interested and motivated to fill out the questionnaires compared to other entrepreneurs in other studies who are given surveys that they cannot relate to.

The overall survey design was inspired by and to some degree adapted from Löwegren (2003); therefore the design of the survey was based on two sections. One consisted of more normative information of the respondents; the incubatees were mapped based on the location of the various Growth Factories, how long the incubatees had been participating in the business incubation program, when the

incubatees' companies were established, and their educational background and line of business. This normative section consisted of questions with multiple responses in order to get specific data that could be compared with the second part of the survey.

The second part of the survey focused on the entrepreneurs and their development in the business incubators, and how they perceived the business incubation program as having influenced the development of their entrepreneurial process and development. This second part of the survey consisted of closed questions, which are considered to be an advantage as they can be precoded, making the data processing less complicated (Bryman & Bell, 2003). For this a 5-point Likert scale was introduced. The coding was based on a Likert scale of 1–5 that was precoded and linked to different answers depending on the question. Likert scale items are interpreted as intervals, which allows for the calculation of means and standard deviations, and hence simple comparisons can be carried out (which is appropriate for this study) without any major statistical problems (Johnson & Creech, 1983; Zumbo & Zimmerman, 1993).

On a conclusive note, when using and designing surveys, the researcher should be aware that several circumstances might have an impact on the respondents and how they react and answer the questions set forth, for example, the sender/sponsor of the survey, the researcher's request to the respondent regarding participation in the study, and the format of the questionnaire (Ghauri & Grønhaug, 2005). An online electronic survey tool/software was used here as this is considered to be a solid way of obtaining large samples of data, as well as presenting and analyzing the data in a convenient manner (Evans & Mathur, 2005). A variety of web survey software is available (e.g., surveymonkey.com, enalyzer.dk, questionpro.com). For this dissertation, enalyzer.dk was chosen. The presentation and analysis of the quantitative survey results are dealt with in chapter 11.

7.6 Methodological challenges and considerations

As with most research, there were some challenges due to the research design and chosen methods. These challenges and consideration are addressed in this section.

7.6.1 Operationalizing of theoretical concepts

As this dissertation is largely theory driven, since the empirical findings are related to both theoretical considerations based on business incubation and entrepreneurship literature, this also means that challenges of transferring, analyzing, and operationalizing different theoretical concepts occurred. These challenges are addressed in this section, starting with entrepreneurship theory, after which we turn to the business incubation literature.

Based on the discussion of entrepreneurship in chapter 5, it was this researcher's belief that operationalizing and analyzing the theoretical understanding of the entrepreneurial process and the concept of entrepreneurial self-efficacy (ESE) in relation to the empirical data should not be that challenging as these theoretical concepts could easily be mirrored in the qualitative case studies and furthermore transferred into operational questions that could be answered via a survey. For example, in relation to the questionnaire, ESE was rather easily operationalized into questions where respondents rated their level of commitment and belief in themselves as entrepreneurs, just as the concept of entrepreneurial network was easily understood both in qualitative and quantitative settings. On the other hand, operationalizing the theoretical concepts of effectuation and causation was much more complicated, as these concepts are considered to be quite abstract and complex phenomenon.

As mentioned in chapter 5, operationalizing measures of effectuation and causation for quantitative purposes has only been done few times (Perry et al., 2012). When discussing the entrepreneurship literature in section 5.3 only 6 of Chandler et al.'s, (2011) 20 operationalized questions were introduced, in order to simply the concepts. Other authors have also simplified the abstract concepts of effectuation and causation for empirical purposes; for example, Wiltbank et al. (2009) investigated only the element of control from effectuation theory. Likewise, this dissertation uses a simplification of the concepts, even though this might mean that the theoretical abstraction level can be lost, as argued by Fischer (2012). Hence, for the purpose of this dissertation and its analysis, the explanation of effectuation and causation introduced by Fischer (2012) is employed: causation represents a traditional, classic, and linear perspective of the entrepreneurial process based on a planning and

predetermined goal-oriented perspective whereas effectuation represents an entrepreneurial process that is uncertain, dynamic, and interactive. Based on this definitional understanding and the six operationalized measures introduced by Chandler et al., (2011), this dissertation strives to analyze and explain the theoretical concepts of causation and effectuation based on an understanding that effectuation represents a learning-by-doing process that stresses the importance of partnerships and collaborations whereas causation supports an entrepreneurial process that relies on business planning, predetermined outcomes, and comprehensive market research. Thus, in terms of operationalizing this understanding, the survey, which is introduced and discussed in chapter 11, was inspired by Chandler et al.'s (2011) prior work.

The simplified understanding of effectuation and causation is used as this dissertation also investigates other theoretical aspects in relation to the entrepreneurial process, and thus the researcher thought it best to limit the answers and likewise the measures of the different theoretical elements in order to be able to explore and discuss a broader perspective of incubatees' perceptions based on theoretical consideration. It is basically the researcher's conviction that an overcomplicated set of measures of effectuation and causation would endanger the overall purpose of the dissertation as well as the quality and quantity of the collected empirical date, as effectuation and causation is only part of an area that can be used to analyze the entrepreneurial process of the incubatees.

In terms of making the overall concept of business incubation and the individual elements of the business program understandable and operational for the survey, the case studies indicated that there did not seem to be a difference between the perception of the researcher and the case incubatees in this manner. This is not surprising as all of the incubatees had been through a screening process where the different elements of the business incubation program were explained, and furthermore, they had also encountered the different elements during their business incubation process. Therefore, the incubatees were expected to be familiar with the different elements. Furthermore, as the Growth Factories is considered to live up to a best practice business incubation design, the researchers did not have any problems in mirroring the different elements of the business incubation program in the literature, which made the design of both the interview guide and questionnaire less

challenging. Furthermore, by only focusing on soft measures (see Voisey et al., 2006; Stephens & Onofrei, 2012) during the interviews and in the survey, it was also possible to reduce methodological challenges in this relation. Hence, from this researcher's perspective, one of the main methodological challenges lay in operationalizing the theoretical concepts from the entrepreneurship literature into questions that could measure how being part of a business incubator might influence the incubatees' perception of their entrepreneurial process and development both empirically and theoretically.

7.6.2 Trustworthiness and dependability of results

In order to ensure the validity and trustworthiness of the two empirical studies used in this dissertation, the different aspects and challenges in relation to both the qualitative and quantitative methods are addressed in this section. Firstly, the quality, trustworthiness, and transparency of the qualitative case studies are discussed based on Lincoln and Guba's (1985) naturalistic methods and techniques for establishing trustworthiness via discussing credibility, transferability, dependability, and confirmability of the qualitative empirical process. Afterward, the validity and reliability of the quantitative study is examined.

Credibility

Firstly, in order to ensure that proper credibility (internal validity) was reached in the qualitative study and thus the case study findings, it was decided to use a technique that Lincoln and Guba (1985) have referred to as *prolonged engagement* by which the researcher invests enough time in the field to learn and understand the culture of the field and furthermore to build trust among the population studied. This made it possible for the researcher to understand the context of the business incubators and the interaction the incubatees have with the different actors and elements of the business incubation program. Gaining access to the business incubators was not a challenge as the research was partly funded by the business link organization behind the Growth Factories. Thus the incubatees were also fully aware of the researcher's position and the purpose of the research, which initially built trust. Accordingly, the researcher was situated at the different business incubators and passively observed the different elements of the business incubation program for almost a year before the

case incubatees were selected and interviews conducted. Accordingly, the incubatees and the researcher had created trust and credibility prior to conducting the interviews. One of the challenges of prolonged engagement is that the researcher can become a *native,* which can affect the focus of the study. Secondly, it was decided to apply what Lincoln and Guba (1985, p. 305) have termed *triangulation mode* to ensure the credibility of the qualitative findings by testing and comparing the case study findings with the quantitative survey results of the chosen cases. This internal consistency test determined the quality of the cases findings as we knew whether they could be mirrored in their survey answers and thus verified. Lastly, in order to enhance the credibility of the qualitative case studies, a third method was applied, which Lincoln and Guba (1985) referred to as *member checks.* This was carried out by sending the finished case study descriptions to the interviewed case incubatees, thereby giving them the opportunity to comment on and correct the case studies and thus validate the findings, which enhanced the credibility of the qualitative findings. The comments and feedback from the cases can be forwarded to the reader upon request.

Transferability

As argued by Lincoln and Guba (1985), transferability is very difficult for qualitative researcher to prove because, they argued, the *"naturalist can only set out working hypotheses together with a description of the time and context in which they were found to hold. Whether they hold in some other context or even in the same context at some other time, is an empirical issue"* (p. 316). Accordingly, the researcher can only provide a thorough description of the research process, which then can help another interested researcher transfer of the results. This is aligned with prior arguments presented in this dissertation by Van De Ven (2007), who argued that generalization of empirical experimental outcomes is impossible, seeing as critical realists view reality as an open system consisting of underlying dependent constructions. This means that from a critical realist perspective, reality is much more complex than what we experience; it is experienced differently based on one's position and given context, and thus a field of research and reality can be experienced differently. This makes generalization difficult as case studies based on critical realism are best used to explain a phenomenon or development at a specific time and in a specific context and may produce different results at another point in time.

Lincoln and Guba (1985) also referred to transferability as a form of secondary evaluation of the credibility level. Thus, the presentation of the level of credibility introduced in the prior section should be enough to determine the level of transferability of the study. Additionally, the case study process in terms of context, presentation, and analysis is described in detail in the dissertation, and based on this, it should be possible for external researchers to test the transferability of the findings. This is also aligned with this dissertation's scientific philosophy, namely critical realism, which holds that it is possible to explore a subjective insight of phenomena, such as the entrepreneurial process and development and business incubation–related elements, and then to extract central observations into a discussion of a more general objective reality, and in this sense, an empirical reality can be experienced differently based on one's (the researcher's) position and context. This also means that from a critical realist's point of view, a field of research and reality can be experienced differently. Thus, this scientific philosophy should be considered when discussing transferability of the dissertation's results.

Dependability and confirmability

In order to establish the dependability and confirmability of the case study findings, which were based on interviews and document studies for this dissertation, Lincoln and Guba (1985) have suggested that qualitative researchers conduct a confirmability audit, a term inspired by traditional accounting audits conducted in companies. According to Lincoln and Guba (1985), a single audit can be used to estimate both dependability and confirmability of the qualitative study. Hence, inspired by the audit perspective of Lincoln and Guba (1985), a peer researcher from Copenhagen School of Business was asked to listen through the eight interviews and, based on the description of the data collection process and the four written cases, determine the trustworthiness (dependability and confirmability) of the qualitative study. The auditor report is in Appendix 4.

Validity and reliability

Because the presentation of the survey results is based on aggregate answers from all of the population and thus all of the different business incubators, there might be a variation between the different business incubators, which has to be made visible for

readers to evaluate the validity and reliability of the results. Thus in section 10.4 the raw empirical data from the survey results in relation to the distribution of answers from the different business incubators are introduced and discussed.

To ensure high validity of the quantitative empirical results, it was essential to test the survey questions thoroughly prior to distributing them to the respondents. This was especially needed as the questionnaire was designed to explore theoretical concepts from the entrepreneurship literature as well as elements of the business incubation program. As explained earlier in this chapter, one of the main challenges in relation to the survey design was the operationalizing of both entrepreneurship and business incubation concepts and formulating measureable questions that the respondents would understand. Therefore, after the survey was designed and the questions formulated, the survey was tested by sending the survey to two senior researchers and two project managers from the business incubators for review, a process inspired by Meru and Struwig (2011), thereby ensuring both that the theoretical concepts of the survey design were tested by other, more experienced researchers and that the practical understanding of the business incubation program and the incubatees was verified with practitioners from the Growth Factories.

The survey design and questions were discussed, revised, and evaluated with the researchers and project managers twice in order to ensure that the questions would be understood by the incubatees and measure what they were supposed to. Afterward, the survey was tested on five incubatees (from the Growth Factories). The respondents were first telephoned and asked if they would participate and note whether there were any questions they did not understand. The respondents were also asked to note down any comments they might have in relation to the survey. After completing the survey, the respondents received a follow-up telephone call by the researcher and the survey was discussed based on their comments and feedback. The researcher also asked the respondents about the questions related to effectuation and causation and whether they thought the questions represented two different approaches to entrepreneurship. As there were no significant comments or critique regarding the survey from the respondents, it was concluded that the survey design was solid and reliable.

7.7 Using subjective measures

As this dissertation investigates the perception of incubatees and how they believe the business incubation program might have influenced their entrepreneurial process, it seems imperative to address the challenges related to this methodological approach. Thus, the purpose of this section is to discuss the different challenges and issues that can interfere with the empirical results and what to consider when drawing conclusions based on empirical data created from subjective measures, such as entrepreneurs' own perception.

In order to address these issues, we turn to McMullan, Chrisman, and Vesper (2001), who discussed the different challenges that researchers might face when using subjective measures of effectiveness when evaluating entrepreneurial support programs. In their study the authors investigated three levels of measures – subjective, objective, and attribution measures – in two groups of entrepreneurs. First, they investigated a group of nascent entrepreneurs, i.e., individuals that had not started their company yet but had participated in course-based evening classes about entrepreneurship. Second, they investigated a group of already established entrepreneurs that had been through an entrepreneurship support program at their local business development center. In this discussion we relate to the results based on the latter group of entrepreneurs, as both the program and the participating entrepreneurs are most similar to the population and the support program of the Growth Factories.

The subjective measures were measured based on the entrepreneurs' rating of four different elements: first, whether the overall entrepreneurship support services were beneficial; second, their willingness to recommend the services to others; third, an evaluation of the knowledge and experience of the consultant that had assisted them in their development; and finally, the importance of the entrepreneurship support services to the strategic development of their businesses. The entrepreneurs were asked to provide the researchers objective data on their company sales and employment. The attribution measures were based on subjective acknowledgment measures as the entrepreneurs were asked to evaluate their company's development in terms of sales, employment, and financing as an outcome of participating in the

entrepreneurship program, i.e., to what extent the support program could be credited for their development.

In terms of the subjective measures, McMullan et al. (2001) discovered that despite the fact that the overall entrepreneurship program was generally measured to be well received based on the different subjective indicators, the entrepreneurs overwhelmingly indicated that they would recommend the program to others, which indicates that there is a difference in how the respondents answered and rated different elements. Thus, researchers have to be aware of these differences in relation to subjective measures. Furthermore, when drawing conclusions from attribution measures, McMullan et al. (2001) argued, it is important that researchers be aware that even though respondents are asked to estimate the benefit of the program or different elements of it in relation to how they have affected their business and development (outcome based), it is likely that these questions actually measure entrepreneurs' feelings about the support they have received, a measure of satisfaction rather that outcome and effect.

The objective measures have not been included in this dissertation for several reasons, also mentioned by McMullan et al. (2001). Firstly, the self-selection of the entrepreneurs to the support programs causes a selection bias that makes it hard to determine the true impact of the participants' performance in comparison with entrepreneurs that have not received similar entrepreneurship support. This is also a big issue within the business incubation literature, which is also why this dissertation does not use a control group, as discussed in the next section. Secondly, McMullan et al. (2001) also questioned the time aspect of measuring the objective performance of the participating entrepreneurs and their subjective and attribution measure answers, as something might happened (which we cannot know) in the periods between the entrepreneurs' being in contact with the support program and their filling out the questionnaire and the researchers' measuring the objective performance data. This time issue is related not only to the objective measures; there can likewise be a significant time difference between the collection of empirical data and the use of the entrepreneurship support program, and knowledge and insight can be lost by the respondents over time. Accordingly, this issue related to time difference is also something that can affect this dissertation and the collected empirical results. Lastly

and most importantly, the reason why this dissertation does not measure objective performance of the incubatees is because the purpose of the research, and thus one of the contributions to the field of business incubation, is to investigate how being part of a business incubator influences the incubatees' perception of their entrepreneurial process and development, not their company performance (even though these are intertwined). Thus, the focus of the dissertation is more theory driven and seeks to understanding the perceived development of the incubatees on a microlevel based on entrepreneurship knowledge. This focus was chosen in response to emerging trends and development in the research field of business incubation that seem to suggest that the field will benefit more not from performance-based research (Vanderstraeten & Matthyssens, 2010) but from research on the perspective of the incubatees (Ahmad & Ingle, 2011).

7.8 Control groups

When a research objective is related to a program such as business incubators, which target entrepreneurs with the purpose of changing and improving these individuals and their businesses, it can be expected that some researchers will consider whether a control group should be included in the research design. Thus, this closing section of the methodological chapter is dedicated to this particular discussion.

Identifying suitable control groups of entrepreneurs outside of business incubators has proven to be quite a challenge for the research field of business incubation. One of the main obstacles is that incubatees have been through a screening procedure with the aim of selecting the entrepreneurs with the greatest potential. This screening process creates a relevant question of bias that makes controlled studies of entrepreneurs and companies in a business incubation context quite challenging. Sherman and Chapell (1998) proposed a solution to this challenge, arguing for the use of control groups consisting of companies that did not make it through the screening process. However, this approach has not gained wide acceptance. Searching outside of the business incubation literature, Pawson and Tilley (1997) referred to a technique they call the "waiting list" by which a control group can consist of people who have signed up for an experiment but were not accepted due to a full program. Applying the waiting list

approach ensures that the motivation of the participants in both the experimental group and the control group is equally high and consequently eliminates the general bias present in most experimental research designs. However, this control group discussion is only relevant when research is based on a traditional experimental design with a corresponding research focus and scientific philosophy.

As introduced earlier, critical realism has been chosen as the philosophical fundament for explaining how data and knowledge are produced for this dissertation. Thus, it would not make sense to include a control group in the research design, as control groups originate from traditional experimental designs, which seem linked to a more positivistic philosophy. From a critical realistic perspective, it makes more sense to lean on the thoughts of critical evaluation that have been formed by Pawson and Tilley (1997). Critical evaluation is an approach designed to evaluate programs and interventions based on principles from critical realism.

Pawson and Tilley (1997) introduced their critical evaluation approach, based on a somewhat critical attack on traditional evaluations techniques, by declaring a number of weaknesses in the classic experimental design. Firstly, when launching programs or interventions, individuals of these programs are met with choices and decision making, and it is the actions of these cognitive processes that at the end guide the program toward success or failure. Furthermore, the success or failure of a program also depends on the individuals' liabilities, capacities, and willingness to change, which differ among individuals (Pawson & Tilley, 1997). In conclusion, Pawson and Tilley (1997) claimed that experimental evaluation ignores or treats these underlining processes wrongly as input, output, or puzzling variables, whereas critical evaluation is interested in understanding and discovering the mechanism and regularities that trigger a certain outcome.

The discussion of control groups, experimental designs, and realistic evaluation was introduced to explain why a control group was omitted from the dissertation's research design. The fact is that a control group seems irrelevant for the overall purpose of the study and the chosen scientific philosophy.

8. Four case of incubatees

8.1 Incubatee #1: Troels Hannecke

8.1.1 Introduction to Troels

Entrepreneurial status: Novice entrepreneur
Working experience: 7 years in tele- and network communication
Education: Graduated from the local technical college in Næstved
Company: Supeo
Industry focus: IT with a special focus on electronic systems for trains
Growth Factory: Næstved

Troels had been at the Growth Factories for around six months when the first interview was conducted. His motivation for moving into the business incubator in Næstved was that he wanted to take his company to the next level. It was important for him to move his company away from the home office and into a professional environment, thereby getting away from practical everyday tasks that one experiences when one's office is located at one's home address. Furthermore, it was also important for him to become part of a professional work atmosphere among other entrepreneurs and to learn more about entrepreneurship and how to manage a business, as these fundamentals were not taught at the technical college he attended.

8.1.2 The screening process

At the screening interview, Troels told the business incubator's managers about his company and plan for the future. He did not receive a screening manual (interview guide) prior to the interview, but the business incubation manager ran through the screening manual during the meeting. The screening interview focused mostly on Troels's ambitions as an entrepreneur. It is his belief that the business incubation managers mainly wanted to ensure that he possessed sincere growth ambitions and that Supeo could realize its growth plans. The level of ambition was measured in terms of future expectations of sales, export, and number of employees. At the interview, the business incubation manager focused equally on growth ambitions and Troels's personal competences as an entrepreneur. After the interview, the business incubation manager informed him that he would be a good candidate for the Growth

Factory in Næstved, and that he could become part of the business incubator if he wanted to. Shortly thereafter, he moved in earlier that he originally had planned as there was an educational course that he wanted to participate in. According to Troels, the Growth Factories can make incubatees seem more serious and trustworthy as they have been through a screening process before accepted into the business incubator.

8.1.3 The overall Growth Factory experience

Overall Troels is rather satisfied with the business incubation program at the Growth Factories; however, he has been disappointed with regard to the network element of the business incubation program. The incubatees do not cooperate with each other significantly, counter to his high expectations when entering the Growth Factory in Næstved. From his point of view, it is up to the incubatees themselves to create useful professional networks that are beneficial for their entrepreneurial process and development. Nevertheless, he is disappointed at how little interaction there is between the incubatees at the business incubator in Næstved, and even during normal working days the entrepreneurs do not interact much with each other. The incubatees do communicate and discuss entrepreneurial or company-related challenges and progress; however, they have not started to form the collaborations and partnerships that he was hoping for.

One of the best elements of the Growth Factories has been the presentability of the office facilities, which is of great importance for new start-up companies. Troels uses the business incubator for business meetings with current and potential customers, and the presentable office facilities provide him with credibility, which is much needed for a novice entrepreneur.

8.1.4 The business incubation program

Since Troels entered the Growth Factory in Næstved, he has been using the business incubation managers in different ways. As the local business incubation manager is employed by the local business authorities, Troels often uses her knowledge about the local business community. The business incubation manager also often provides him with useful business contacts within Næstved. Thus for him, the business incubation managers are very useful for professional contacts and networking purposes in

general. He has predominantly been in contact with the local business incubation manager, but also relatively often with the regional business incubation manager who operates as the regional key account manager for the business incubator in Næstved. As he is a novice entrepreneur, he views the business incubation managers as professionals who can provide him with a better understanding of the entrepreneurial process, as well as assist him with business development when needed. In case the business incubation managers cannot help Troels themselves, they often know someone else – e.g., one of the business consultants – who can. The business incubation managers are not used as resources for strategic development of his company, Supeo; for this, he turns to the business consultants.

When the first interview was conducted, Troels had only held few meetings with his business consultant due to lack of time on Troels's behalf. At these meetings, he and the business consultant jointly analyzed his challenges based on a business development tool that the business consultant introduced. Additionally, they discussed his business plan and goals for the future. From the sessions with the business consultant, he has gained insight about himself and his company, which he did not consider of importance previously. Concretely, they discussed everything from what type of business entity Supeo should be registered as, and the legal implications for him as an entrepreneur, to what type of products Supeo should produce and market in the future. The meetings mostly covered strategic challenges, followed by identifying practical tasks that should be solved in order to create progress.

Troels and the business consultant have also discussed when it would be realistic to hire his first employee, which he considers to be a major milestone as an entrepreneur. Overall, he is confident that the business consultants can help him further develop as an entrepreneur, and the sessions also force him to take his business even more seriously. Occasionally, he needs someone to push him in the right direction, which is possible via the business incubator, and for Troels it is not enough to have only an accountant as external advisor.

Six months into the business incubation program, Troels and his business consultant were discussing the possibility, introduced by the business consultant, of creating a board of advisors for Supeo. Troels believes that an advisory board would be able to assist him in strategic decision making and provide recommendations as to in which

direction Supeo should head. During his entrepreneurial process, it is very important for him to receive feedback and advice as this forces him to continuously improve.

As part of the business incubation program, Troels has participated in the educational course about economy and accounting, which was useful for an entrepreneur like him with no prior business education. He believes that it is important to gain new knowledge as an entrepreneur that can support him in his entrepreneurial process. The educational course in economy and accounting was taught at a metalevel, and he recalls that some of the other incubatees were disappointed about this approach as they were expecting practical advice about accounting rules, etc. However, from his perspective, this sort of knowledge should be obtained from the incubatees' accountants. For him the course instructors were neither too academic nor too practical in their dissemination, but other incubatees considered the course instructors to be too academic in their lectures. He has been able to apply knowledge from the course content in the further development of Supeo, and thus he has also signed up for additional educational causes. One element that he believes is missing from the educational course catalogue is a selection of a few educational courses that focus on practical elements of the entrepreneurial process and development, thus allowing the incubatees to take courses at different levels.

For Troels, the educational courses are also part of the networking aspect of the business incubation program, as this is a great venue to meet other incubatees. In this regard, he would like to have a database where the competences of different incubatees are displayed as this would make it easier to collaborate with other incubatees. He has not made use of the different business incubators around the region physically; however, he is planning to use the Growth Factory on Lolland, as his biggest customer is in that area.

8.1.5 Troels's entrepreneurial development within the business incubator

After having been at the business incubator for 6 months, Troels believes that he has developed as an entrepreneur from participating in the Growth Factories. His development within the business incubator as an entrepreneur has mainly manifested in an improved understanding of how to conduct business with other companies and a better understanding for business in general. In terms of new customers, the business

incubation process at the Growth Factories has not yet paid off, but he has made several propositions to new customers in collaboration with other incubatees. Troels views this as a positive sign that he and his company are evolving.

As Troels has been at the business incubator for only 6 months, he finds it a bit too early to conclude whether or not the network at the Growth Factories has influenced his development as an entrepreneur. Nonetheless, he still believes that he can sense a difference in his entrepreneurial development as he has presented his company to many new potential partners and customers via the Growth Factories. Thus, his experience is that he constantly encounters new business opportunities via the Growth Factories. He states that it is hard to know how he would have developed as an entrepreneur if he had not been part of a business incubation program, but he believes that it would had been much harder to develop his company to its current stage, where after 6 months at the business incubator, he is considering hiring Supeo's first employee. Thus, he views the business incubation program as having accelerated his entrepreneurial process and development.

As mentioned earlier, Troels considers hiring his first employee to be an entrepreneurial milestone, which prior to entering the business incubator, he did not expect to reach for a few years. However, during his time at the Growth Factories, this milestone has moved much closer. According to him, part of the reason is that the Growth Factories emphasize the importance of employment and how this can help the incubatees to grow their companies. Hence, he has been provided with much information about this area, which has made it more realistic and feasible for him to hire his first employee. In this regard, he has become more ambitious and confident as an entrepreneur since entering the Growth Factories, partly because he is surrounded by other determined incubatees who continuously provide him with new input and knowledge.

At the follow-up interview conducted with Troels 12 months into the business incubation program, he has started to hire interns as part of a new expansion strategy launched in collaboration with his business consultant. During the previous 6 months, Troels has consulted much more with his business consultant compared to the first 6 months in the business incubator, and this collaboration has been very beneficial for his further entrepreneurial development since he values receiving feedback from an

objective advisor. When Troels looks back at his knowledge base from when he entered the business incubator in Næstved 12 months ago, he sees a significant development as he has also evolved and become more professional by getting a good accountant and outsourcing several administrative tasks. The latter is something that other incubatees in Næstved have advised him about. In general, he has learned much about entrepreneurship and business-related matters from the other incubatees over the last 6 months as the local network at the business incubator in Næstved has improved a lot. Additionally, the incubatees in Næstved now often share knowledge about sales, marketing, and websites, which did not happen 6 months ago. At the educational courses about sales and marketing, he met other incubatees from different Growth Factories, e.g., a LEAN expert from the business incubator in Ringsted, which he plans to implement at some stage. Furthermore, he has also been approached by incubatees from other business incubators in the region who want to create partnerships. Initially, he and the business consultant started their consulting process by focusing on practical matters and challenges, but 6 months later, they are focusing more on strategic considerations, and they have been discussing how Troels can approach an international market.

One year into the business incubation program, Troels feels even more confident about being an entrepreneur than 6 months ago. He has believed in Supeo ever since he launched the company; however, he has become more relaxed and confident in himself. In conclusion, he is pleased that he moved into the business incubator in Næstved, and he is unsure whether Supeo would have survived if he had still been working at the home office or at some other office community without a business incubation program. He bases this on the many critical incidents he has experienced within the last year where it was crucial that he got professional advice and guidance from the business incubation staff and the incubatees.

8.1.6 Summative findings from the case

Troels experienced the screening interview as being well balanced, where the business incubation manager asked equally about his prior professional experience and know-how, business idea/foundation, and personal ambitions for himself and his company. According to him, the Growth Factories allow incubatees to seem more serious and

trustworthy as they have been through a screening process before accepted into the business incubator.

For Troels, the most beneficial and influential element of the business incubation program has been being surrounded by other incubatees with growth ambitions as they all share many of the same challenges. The network of the business incubator has in general has been valuable for him; he has also made use of the local business incubation manager's professional network, and thus the local business incubator manager has influenced him as an entrepreneur. He has gained valuable insight about his entrepreneurial process and his company, Supeo, from working with his business consultant, insight that he did not consider important prior to entering the business incubator. The business support process focused on his strategic challenges and on identifying practical tasks that should be solved in order to create progress in his entrepreneurial process. Furthermore, the business consultant process has also made him more committed to himself and his company, Supeo, which has made him consider hiring employees and looking into international markets much earlier than expected. In his experience, the educational courses were taught at a metalevel, which he considers beneficial as he has no prior business education; however, he also considers practical-based educational courses to be relevant for his entrepreneurial process, something that he feels is lacking in the current educational courses.

During the first 6 months at the business incubator, Troels's entrepreneurial process and development progressed faster than he had expected. Furthermore, he became more ambitious and confident after entering the business incubator in Næstved, as he was encircled by other determined entrepreneurs who continuously provided him with new input and knowledge. Twelve months into the business incubation program, he had started to hire interns, and he feels more confident about being an entrepreneur than 6 months ago, especially since during the last 6 months, he has made much more use of the business consultant. This collaboration has been very beneficial for his further entrepreneurial development as he values external advice and feedback. He also receives feedback from other incubatees in Næstved since the network there has improved significantly over time, which tells us that it takes time to create a valuable entrepreneurial network from the bottom up. He is unsure whether his company, Supeo, and he as an entrepreneur would have survived without support

from the business incubator, and without the Growth Factories, he believes, it would have been harder for him to develop his company to its current stage. Thus, he is confident that the business incubation program has had a positive influence on his entrepreneurial process and development.

8.2 Incubatee #2: Ziya Kart

8.2.1 Introduction to Ziya

Entrepreneurial status: Experienced entrepreneur

Working experience:	Started several companies and worked in a medium-sized engineering consultancy company
Education:	Graduated as construction engineer from university
Company:	Kart Engineering
Industry focus:	Consultancy services within construction engineering
Growth Factory:	Greve

Ziya saw the Growth Factories a good way of moving forward with his business. He had been located at the Growth Factories for 6 months when the first interview took place. Originally, he was just looking for a place to work and maybe a shared office with another entrepreneur, but once he realized what the Growth Factories were all about, his motivation for joining the business incubator in Greve was clear. He wanted to be part of a professional entrepreneurial environment where it was possible to get some sort of business support.

8.2.2 Screening process

At the screening interview Ziya talked about his company, himself, and his vision for the future. He instantly noticed that the business incubation manager believed in him as an entrepreneur with growth potential, as well as in his future plans for the business. For him it seemed quite easy to get through the screening interview, and according to him, excelling at the interview, getting recognition from the business incubation managers, and being good enough for a business incubation program such as the Growth Factories increased his confidence as an entrepreneur. At the screening interview, there were only a few questions that he could not answer, but that did not turn out to be an issue in relation to acceptance into the business incubation program. At the screening interview, he and the business incubation manager spent a lot of time discussing his entrepreneurial vision for Kart Engineering and focusing on what he as an entrepreneur wanted to experience and achieve based on his own personal goals. Furthermore, at the screening interview, they also spent a lot of time

discussing what he had done prior to his current entrepreneurial career. No surprises occurred at the screening interview as he had received a copy of the screening manual prior to the interview, so he was well prepared for the questions the business incubation manager asked. According to him, his involvement in the Growth Factories has helped him evolve as an entrepreneur, starting from when he was informed about his acceptance into the Growth Factories.

8.2.3 The Growth Factory experience

The business incubation environment in Greve is very motivating for Ziya, as the other incubatees around him all share a common motivation to succeed within their businesses, as well as a high level of achievement for wanting to create something with their companies. This creates a network-oriented atmosphere that he considered to be very relevant for him as an entrepreneur as this creates new opportunities for his business. However, he had expected to establish partnerships with other incubatees from, e.g., participating in the educational courses of the business incubation program, but according to him, the educational courses are conducted fairly fast, not leaving much time for detailed follow-up, and therefore there is not much time set aside for group work among the incubatees, which he believes would help the incubatees get to know each other and their areas of expertise better. In this regard, he also thinks that the educational modules should last a whole week as the incubatees then would get a chance to apply the knowledge they have learned to their own businesses. But for him, this element of the business incubation program have been very disappointing, and overall the educational modules of the Growth Factories program have not been that useful for him, as he believes that he already possesses many of the skills needed to run a business. For example, he believes that if you have a good relationship with your accountant, then you do not need to have in-depth knowledge of managerial financing and accountancy. However, he also thinks that the educational course in economics and accountancy might be more essential for other incubatees if they have no knowledge or experience within this area of running a business.

8.2.4 The business incubation program

For Ziya the most important person at the Growth Factory in Greve is the local business incubator manager. The local business incubation manager provides the incubatees with confidence, as she works hard to make the entrepreneurs believe in themselves and convince them that they can make things happen if they want to. The local business incubation manager is a very energetic and kind person who improves the environment of the business incubator as she is always willing to help out. The local business incubation manager also functions as a good facilitator of networks, as well as assisting with practical challenges such as printing business cards, etc. This sort of service shows the incubatees that there is support available nearby at the business incubator in Greve. He does not think that the local business incubation manager has much experience within business development and entrepreneurship, but she is very helpful with day-to-day challenges. In terms of the regional business incubation managers and their skills, it can be hard to figure out specifically what they can help with, and therefore the regional business incubation managers have not been used that much by him, even though he has the impression that they have a broad network that could be useful for the incubatees. He believes that the regional business incubation managers are quite busy, so it is not always possible to get help from them right away, which he as an entrepreneur often needs. According to him, he has always perceived his business consultant to be the most important person when it comes to the business incubation program.

Since the first meeting with his business consultant, Ziya has received solid advice and guidance concerning the current state of his business but also in terms of which direction he should focus on for the future. According to him, his business consultant was the one that really got the ball rolling for him by providing him with practical advice and suggestions as to whom he should contact for the benefit of his business, which also included potential new customers. The business consultant made him realize the importance of expanding and working with his personal and professional network. By learning how to use his network, he quickly realized how existing and new customers could refer him to other customers, and that made a difference for his entrepreneurial process. By engaging in professional construction and engineering networks with over 300 other companies, he had a feeling of being part of something big, which made his company seem bigger than it really was. Before engaging in these large networks, he saw himself as an entrepreneur, but afterward he portrayed

himself as a small company. The Growth Factories have helped him create that image and self-perception.

Ziya has one issue with the consultants as the incubatees have to schedule an appointment with the business consultant a few days in advance, and that waiting time can be crucial for an entrepreneur who needs help immediately. An entrepreneur often needs consulting and advice on the spot or over the phone, and hence at the first interview, he was interested in getting a mentor connected to his business as a supplement to the business consultant. Ziya's meetings with the business consultant have clearly made a difference for him, and at every meeting they cover different elements of his business and entrepreneurial progress. Together they have worked on improving his business idea, his elevator pitch, and his focus on sales, as well as bidding on different targets of new projects. One of the things that he remembers from his first meeting with the business consultant was that they spent a lot of time discussing his professional personality, motivation, stamina, and reason for starting Kart Engineering. Finally, the business consultant asked him where he would be in 5 years' time. To this question, he replied that if he had five employees in 5 years, then he would be satisfied as he would be running a solid business. He was also asked about what kind of car he was driving. He believes these questions were asked to provide the business consultant with knowledge of how realistic he was as an entrepreneur, and whether he also set realistic goals for himself and his business. The focus on realism has taken up much space in the sessions as the business consultant wants him to be realistic in terms of his possibilities as an entrepreneur and how he can exploit the tools and resources that are available to him. At the sessions, they have also discussed what he could offer his customers and how he could become more visible to the customers within his current financial constraints, and he and the business consultant agreed that he would need to build up a network of contacts. So far the incubation process has been a valuable process for him, where he as an entrepreneur has had to learn how to make his company grow step by step, and as mentioned earlier, he and the business consultant have been working a lot on improving his professional network as well as how to use his existing network, a mind-set and an approach toward entrepreneurship he did not apply prior to entering the business incubator.

Even though Ziya focuses on the importance of applying his social and professional network as part of his entrepreneurial process (which he has learned via the sessions with his business consultant), he has not yet made use of the other business incubators for networking purposes. When he needed a new website, his business consultant suggested that he contact one of the other incubatees, but it turned out that the incubatee was not that excited about helping him, so they did not establish a business agreement. For him, this is an example of how there is not much collaboration among the incubatees at the Growth Factories, which is a shame from his point of view, and hopefully this will change since the incubatees could make more money if they worked more together. Regardless of this, the network-oriented atmosphere at the business incubator still seems to be relevant for him as an entrepreneur.

8.2.5 Ziya's entrepreneurial development within the business incubator

During his first 6 months at the Growth Factories, Ziya has become more dedicated toward his business as his level of ambition has become more evident during his time at the business incubators in Greve (though it always has been high). This development happened over the first 6 months at the business incubator, where he has learned in particular how to set goals for himself and his business and create how-to plans of achieving his goals. This positive development has also increased his self-confidence and his belief in himself as an entrepreneur; however, he states that it is hard to know what would have happened outside of the Growth Factories and whether he would have developed in the same way. Nevertheless, he seems to think that the Growth Factories and the dialog with the business incubation staff and other incubatees definitely have changed something in his entrepreneurial development for the better. The willingness to succeed with his entrepreneurial career would still have been present without the Growth Factories, but according to him, the timeline and entrepreneurial development have accelerated significantly via the Growth Factories. The most important element of this progress has been the environment and atmosphere at the Growth Factories, which makes entrepreneurs feel like a company instead of a one-man band. Additionally, the networking possibilities and the business consultants are also considered very valuable for his entrepreneurial development.

At the follow-up interview with Ziya 6 months after the first interview, he has been at the business incubator in Greve for 1 year, and he still feels that he as an entrepreneur and his company are evolving. The collaborations and partnerships with different companies and entrepreneurs from his professional network are especially paying off, and this is an area on which he has been focusing as part of the business consultant process. At the time of the second interview, he was starting the mentor process, and at their last meeting, the mentor had assigned several tasks to him, e.g., developing a promotion pamphlet targeting housing associations. The mentor and Ziya have also been discussing whether Kart Engineering should grow by hiring employees or establishing stronger business partnerships. Despite this new collaboration with the mentor, he still keeps in contact with his business consultant, and he calls him from time to time while also using some of the other business consultants for advice and guidance when they are present at the Growth Factory in Greve.

When reflecting on his first year at the business incubator, Ziya believes that he has become stronger mentally as he has been able to survive the first year with his company, Kart Engineering. Since the first interview, he has been given a key to the business incubator in Næstved as he has been using it for business meetings. Hence, the possibility of using the different Growth Factories around the region is something that he has started to take advantage of. This possibility, which is part of the business incubation program, has been valuable for his entrepreneurial development as it makes his company seem more professional since he can have meetings with customers and partners around the region. Overall, he believes that the Growth Factories have become better at receiving and guiding the incubatees through the program, but he also stresses that it is still up to the entrepreneurs themselves to make sure that the business incubation program is beneficial for their needs, intentions, and ambitions, which represents a bottom-up perspective.

8.2.6 Summative findings from case

Ziya found the screening interview to be just as he had expected, as it was centered on his prior professional experience and know-how and his current business foundation and goals/plans for Kart Engineering. Furthermore, he believes that acceptance into the business incubator can boost entrepreneurs' self-confidence.

For him the most beneficial element of the business incubation process has been the network-oriented atmosphere at the business incubator as well as the office space. However, he has also been disappointed about the network element as there has not been enough collaboration among the incubatees, although he still considers the network element to be relevant for him as an entrepreneur. He has experienced that the business consultant has influenced his entrepreneurial development significantly, as he has received solid advice and guidance concerning the current and future state of his business, and furthermore, the business consultant has also taught him to understand the value of networking with potential partners and provided him with contacts and customer leads via his own network. The business consultant has also taught him to be realistic in terms of his possibilities as an entrepreneur and how he best can exploit the tools and resources available to him.

For Ziya the educational courses of the business incubation program have not been satisfying, mainly because they are conducted too fast, leaving little time for detailed follow-up and networking with other incubatees. He often uses the local business incubation manager in Greve, especially for practical business-related challenges. Furthermore, he also experiences that the local business incubation manager in Greve provides the incubatees with confidence and faith in themselves. He stresses that it is up to the entrepreneurs themselves to make sure that the business incubation program is beneficial for their needs, intentions, and ambitions from the bottom up.

Ziya's development within the first 6 months in the business incubator boosted his self-confidence as an entrepreneur. Furthermore, his timeline and entrepreneurial growth process have accelerated significantly due to the business incubation program, and the atmosphere at the business incubator in Greve has made him feel like a company instead of a one-man band. Twelve months into the business incubation program, he has increased his collaborations and partnerships substantially outside of the business incubator, and his focused networking strategy – a process that was initiated by the business consultants – has paid off. During the first 12 months at the business incubator, he has learned how to navigate in the market as an entrepreneur, which over time has made him more confident as an entrepreneur.

8.3 Incubatee #3: Sean Sealey

8.3.1 Introduction to Sean

Entrepreneurial status:	Experienced entrepreneur
Working experience:	Launched several companies and has always been an entrepreneur
Education:	Higher university business degree
Company:	E-moms
Industry focus:	IT – online accounting system for SMEs
Growth Factory:	Holbæk

Sean's motivation for joining the Growth Factories was that he likes the idea of business incubations in general, and also that the business incubation program offers educational knowledge via the educational courses, as he thinks it is important to gain new knowledge continuously as an entrepreneur. Furthermore, knowledge sharing and dissemination among the business incubation staff and the other incubatees is what Sean believes makes the business incubator concept different from traditional office hotels.

8.3.2 The screening process

Sean cannot remember anything about the screening process, and thus it is not possible to detect how this element of the business incubation process has influenced him, which could also mean that the screening process has not influenced his entrepreneurial process and development at all. He states that he started his current companies without any extensive business planning or budgeting; however, he has applied a differentiated entrepreneurial strategy in which he works on E-moms while being active in other minor IT-related entrepreneurial projects as a way to generate a personal income.

8.3.3 The Growth Factory experience

For Sean the best part of the business incubation program has been the office environment and being surrounded by other likeminded entrepreneurs. During his time at the business incubator in Holbæk, he has developed close professional

relationships with other incubatees, and he has experienced how the incubatees understand each other's ways of thinking as they share many of the same challenges. The relationship with other incubatees is important for him for professional purposes, but also for existential reasons as it is of great importance for him to be around peers, which indicates that for him the social environment of the business incubator is significant in his entrepreneurial process.

8.3.4 The business incubation program

During Sean's time at the business incubator, he has been in contact with the business incubation managers several times. The presence of the local business incubation manager at the Growth Factory in Holbæk has, according to Sean, been an especially essential part of creating a good atmosphere at the business incubator. The local business incubation manager is considered to be a problem solver among the incubatees in Holbæk. Furthermore, the local business incubation manager is also considered to be a facilitator of contacts for the whole business incubator. Everything seems to work on the practical level in the business incubator, and that is the most important thing for Sean. The regional business incubation managers are not present at the business incubator in Holbæk that often. He sees them only once a week when the regional key account business incubator manager is visiting Holbæk and at special events or educational courses. In terms of assisting him with his progress as an entrepreneur, Sean does not use the business incubation managers for this purpose. Nevertheless, one of the regional business incubations managers has helped him with arranging a new business support consultant, which should help him with attracting funding for E-moms. Thus, he uses the business incubation managers for indirect support, and he furthermore believes that the business incubation managers can support him in his entrepreneurial process, but that it can be hard to identify what skills and competences the different business incubation managers possess. Additionally, he is confident that it would benefit the incubatees more if the business incubation managers knew more about the individual incubatees and their challenges, which implies that he perceives the business incubation process from a top-down perspective.

At the first interview (after 10 months in the business incubation program), Sean is in the process of acquiring a new business consultant, as the prior consultant did not

make much difference for his development as an entrepreneur. Sean recalls that he had held only three meetings with his business consult and most of these meetings were a waste of time. Sean believes that maybe he should have focused on getting a mentor instead of the business consultant from the beginning of the business incubation program. However, he was afraid that a mentor would tell him to focus only on E-moms and stop all other entrepreneurial projects. Such a mentor would just become a guilty conscience for him, instead of someone he could turn to for advice and guidance.

From the start of the business incubation program, Sean has had high expectations for the business consultants, as he thought they would have in-depth knowledge of the challenges that he and E-moms was facing and the business consultant would help him solve these challenges. However, according to Sean, the business consultants operate only reactively, which means that they can support the incubatees only if the entrepreneurs provide the business consultants with concrete information about their challenges and progress. This approach is not useful for an entrepreneur like Sean, as he needs a business consultant to push him forward. This means that he and the business consultant have different approaches to how best to support entrepreneurs like Sean, which could indicate a difference in entrepreneurial logic. But he also understands that the business consultants cannot carry out specific tasks and solve challenges for the incubatees as it is up to the incubatees themselves from the bottom up to make sure that they advance. He sees himself as a business developer and IT developer, and thus he does not need advice from business consultants in these areas. His first business consultant specialized in business development, and he recalls that at one of their meetings, they exchanged knowledge about a new credit card reader that had been developed for smart phones, though he had expected that they would focus on his current challenges instead.

Sean has participated in three of the educational courses. Two of these were beneficial and useful for him as an entrepreneur. At some of the educational courses, he has been present only a few times, as he was running E-moms by himself and therefore needed to take care of customers and maintenance of the online platform. Nevertheless, he prioritizes attendance at the educational courses when possible. Both the content and teaching of the educational courses have been relevant and

interesting for entrepreneurs. However, he recalls that one of the instructors was very bad, and this was something the incubatees discussed afterward. Additionally, it has been very valuable for him to meet other incubatees from the different Growth Factories as the incubatees belong to the same family. He especially remembers one educational course about personal resources that was very useful for the incubatees, and all of the incubatees had left the course energized and with intentions of creating more joint ventures and collaborations among their companies, but once they got back to their daily routines and business, none of the intentions were realized.

In terms of the content of the educational courses, it has to some degree been brush-up knowledge for Sean as the educational courses covered knowledge that he had previously gained from the business school. Hence, he has not been introduced to any new ground-breaking concepts that could have changed his entrepreneurial process and development significantly. On the other hand, he did not except this, so for him the level of the educational courses was acceptable. The course content was fairly academically based, which he enjoyed as he appreciates being taken out of his daily action-based routines and being challenged intellectually. As he has founded companies previously, he feels confident about the action-based elements of the entrepreneurial process, and thus he did not believe a course instructor could teach him anything on this matter.

Besides the network and office facilities, the educational courses were one of the reasons Sean decided to move into the Growth Factory in Holbæk. With an online business like E-moms, he could easily have worked from home, and in terms of networking with other entrepreneurs, he could have attained that at a traditional office hotel. But the educational courses as well as the business incubation idea were very appealing to him and his development as an entrepreneur. He has not made much use of the network element of the business incubation program, but he converses daily with the other incubatees at the business incubator in Holbæk. The incubatees often discuss entrepreneurial and business-related challenges, but he mostly interacts with the other incubatees for social reasons.

Sean is an entrepreneur who works strategically on improving his network, but he considers most of the incubatees to be part of his social network rather than his professional network. He mostly communicates with the incubatees who are located

on the same floor as himself or with incubatees who are operating within the same industry or area as E-moms. Other incubatees are considered to be colleagues. He does not care about what happens at the other Growth Factories around the region of Zealand, and he has little time to participate in networks with entrepreneurs who are physically located far away from the business incubator in Holbæk. He believes that using the other business incubators in the region could be useful for incubatees who spend a lot of time on the road visiting customers. In his case, this is not needed as E-moms operates online. Thus, the regional network throughout the different business incubators does not add any value to his entrepreneurial process.

Overall, Sean would prefer the Growth Factory business incubation program to be designed and based on a more normative approach toward entrepreneurship, where the business incubation staff directly tells the incubatees what sort of challenges they should focus on in order to advance. Furthermore, the business incubation manager should ensure that the incubatees really want to evolve via follow-up meetings that measure the incubatees' progress. This sort of progress was what he experienced when he changed business consultants later in the business incubation process, an approach and push that he would like to have experienced from the start of the business incubation program. According to him, many entrepreneurs need this push by a professional person whom they respect and who has entrepreneurial experience. Furthermore, he suggests that business consultants should be teamed up with the incubatees based on their personality and motivation, which could be determined at the screening interview.

8.3.5 Sean's entrepreneurial development within the business incubator

At the time of the first interview, Sean had been at the Growth Factory in Holbæk for 10 months. During his time at the business incubator, Sean believes, his company E-moms has progressed, but he does not think that he as an entrepreneur has developed much. Ten months into the business incubation program, Sean does expect to succeed with E-moms as he has made an agreement with a new business consultant who specializes in financing entrepreneurial companies, which Sean has high expectations for. He and his partner want to analyze E-moms thoroughly in collaboration with the business consultant and create a new strategy for E-moms based on the analysis.

After 20 months in the business incubator in Holbæk and 6 months after the first interview was conducted, Sean's company was sold. During the sales process of E-moms, Sean relied on advice from his accountant and did not seek advice or support from the business incubator in this regard. Six months ago, Sean had just started a process with a new business consultant as part of a plan to generate additional funding to accelerate E-moms' growth, a comprehensive process where the business consultant had provided Sean with many Excel documents that he had to fill out with budget and financial key performance indicators. This was a very intensive process for him, when he also had to focus on the daily operations of the company, and he considered the many different tasks that were assigned by the business consultant to be a bit unnecessary. However, the business consultant claimed that this was needed in order to convince banks and investors that Sean was a professional entrepreneur. Nevertheless, the consulting process with the business consultant was all in all remunerative, and the business consultant was also very proactive in trying to support Sean and his partner. However, Sean simply did not have the energy needed to follow through on the process.

In conclusion, Sean has not developed much as an entrepreneur within the last 20 months at the business incubator in Holbæk, but he has gotten a larger network and a better understanding for the local entrepreneurial environment in Holbæk.

8.3.6 Summative findings from the case

Sean started E-moms without any extensive business planning or budgeting, but he applied a differentiated entrepreneurial strategy. One of the regional business incubation managers supported Sean in the funding process by linking him up with an expert business support consultant who was to guide Sean through the funding process. Furthermore, Sean believes that the regional business incubation managers could support him in his entrepreneurial progress, but he has had a hard time figuring out what competences the different regional business incubation managers possess. In terms of the local business incubation manager, Sean is satisfied as long as the local business incubation manager makes sure that the business incubator is operating smoothly.

Sean has been very disappointed in regard to the business consultants, as he has learned that they operate only reactively, which was not beneficial for his entrepreneurial process. Furthermore, the processes with the business consultants are too demanding for the incubatees, according to him, as the business consultant wanted updated business plans and information, which was too much of a far-reaching process for entrepreneurs, many of these tasks were unnecessary, and the process seemed too immense for Sean.

For Sean the educational courses have been brush-up courses of knowledge that he gained at the business school. Nevertheless, he still considers the content of the courses to be relevant for his entrepreneurial process, and he enjoys being taken out of his daily action-based routines and challenged intellectually. In terms of the network with other incubatees, he interacts mostly with the other incubatees in Holbæk for social reasons, as he already has a wide professional network within his industry. Nevertheless, he still claims that he has increased the size of his network and also gained a better understanding for the local entrepreneurial environment in Holbæk, although it has not influenced his entrepreneurial process.

Twenty months into the business incubation program, Sean's company E-moms was sold. Sean does not feel that he has developed as an entrepreneur during his time at the business incubator in Holbæk.

8.4 Incubatee #4: Heidi Larsen

8.4.1 Introduction to Heidi

Entrepreneurial status:	Novice entrepreneur
Working experience:	Professional career within sourcing and product development
Education:	Shorter higher educational degree
Company:	Plus 7
Industry focus:	Consultancy services within sourcing and procurement
Growth Factory:	Holbæk

Heidi's motivation for moving into the business incubator was, first, that she did not believe that she could create the same social and professional network from a home office, even though she easily could run the business from home. Second, as a novice entrepreneur, she had many practical questions related to starting up her business, so she considered it to be easier to obtain knowledge about these practical matters through the business incubation managers instead of collecting this type of information herself. Finally, it was very important for her to work among other creative entrepreneurs as creativity is an important part of the entrepreneurial process for her and she is a strong believer that creativity can best be fostered through interaction with peers and not by oneself in a home office.

8.4.2 The screening process

Prior to the screening interview, Heidi had to fill out a screening manual containing information about her business and her entrepreneurial profile. She had completed the screening thoroughly as she was expecting a hard interview where she would have to convince the business incubation managers that her business idea and entrepreneurial skills lived up to the standard of the business incubator. However, she was quite surprised when the screening interview went smoothly and most of the interview was concentrated on how companies conduct business in China, instead of on her business plan. The business incubation managers did ask about her professional experiences and competences, but most of the screening interview was about China. Thus, she was quite surprised as to how easy it was to be accepted into the business incubator; she had expected a much more demanding process since her

perception of the Growth Factories was that only the best entrepreneurs could join them. At the screening interview, she noticed that the business incubation managers emphasized the importance of the incubatees actively participating in the business incubation program. This was positive for her as she considers herself to be very active both professionally and socially, and thus she expected the other incubatees to be the same. However, when she moved into the business incubator, she realized that many of the other incubatees were not as active as she was expecting. From the screening interview, she also recalls that they discussed her company goals and where she saw herself in 2 and 3 years. Additionally, the business incubation managers focused on her personal competences rather than whether her business idea and concept were sustainable in the long run. In conclusion, she had expected much more critical questions about her business plan.

8.4.3 The Growth Factory experience

In general, Heidi speaks highly of the Growth Factories, and she believes that novice entrepreneurs such as herself are interested in gaining as much information as possible related to the entrepreneurial process. Thus, she has signed up for all of the educational modules offered at the business incubation program because she believes that there are many different areas of the entrepreneurial process and development that novice entrepreneurs need to learn, e.g., marketing, accounting, legal issues, or hiring employees. Knowledge of some of these issues can be gained via the business incubation program at the Growth Factories, but proactive entrepreneurs like Heidi also need to gain knowledge outside of the business incubator, e.g., through professional networks of other entrepreneurs.

Overall Heidi is very satisfied with the business incubation program at the Growth Factories. According to her there is room for improvements, but it greatly depends on the goal of the business incubation initiative and the incubatees as some entrepreneurs just make things happen by themselves with the possibilities that are within their reach, whereas others need more guidance from the business incubator in order to develop their company.

According to Heidi, the best element of the Growth Factory business incubation has been how different entrepreneurs are gathered together at the same office facility.

She strongly believes in the concept of having entrepreneurs working at the same physical location since for her the value of business incubators is found in bringing entrepreneurs together. New perspectives from other entrepreneurs are very valuable for an entrepreneur like Heidi because it can be challenging to assess and evaluate one's own business and progress objectively. Thus, she argues, entrepreneurs need others to challenge their point of view in order to evolve, which happens at a business incubator.

8.4.4 The business incubation program

During the time Heidi has been at the Growth Factory business incubator, she has not made that much use of the regional business incubation managers. However, there have been a few occasions where the regional business incubation managers have helped her with concrete challenges. For example, one of the business incubation managers arranged for Heidi to give a presentation about sourcing at an entrepreneurship conference. This was very valuable for her for marketing purposes. Furthermore, she has had much contact with the local business incubation manager who is connected to the Growth Factory in Holbæk. According to Heidi, the local business incubation manager always goes the extra mile for the incubatees in Holbæk and always strives to solve all kinds of problems for them. Heidi has also made much use of the local business incubation manager's marketing and PR experience, and as an expert within souring and procurement, she has helped Heidi with developing and implementing Plus 7's marketing and communication strategy. Additionally, Heidi has also made use of the local manager's professional network as the manager previously worked within public relations. Hence, the local business incubation manager was willing to share her press contacts with Heidi and also assisted her in distributing her PR material.

As soon as Heidi started at the Growth Factory in Holbæk, she was teamed up with one of the business consultants as part of the business incubation program. For her, the business support was not that valuable for her entrepreneurial process and development. The business consultant was very encouraging and excelled at telling her how well she was performing, but she was expecting more critical questions about her business and her entrepreneurial progress since this is how she learns how to improve her business and herself as an entrepreneur. After a few sessions with the

business consultant, Heidi transferred from the business consultant to a mentor instead. From the start, the mentor was focused on organizing as well as providing structure in Heidi's business. Furthermore, the mentor made Heidi make a list of her potential new customers and make qualified budget assumptions based on realistic sales projections. Overall, the mentor made her focus much more on budgets and realistic sales projections and also taught her how these key figures can be used to generate an overview of her company's progress. The implementation of continuous sales projections has been a way of pushing her as an entrepreneur into reaching higher goals and therefore growth in her business. According to her, implementing sales projections and budgeting in her entrepreneurial process motivated her to perform better since she has a high need for achievement and especially for reaching goals that were given to her. Her mentor is also part of Plus 7's advisory board, and besides advisory board meetings, Heidi and her mentor meet once a month for what they call business review meetings. At these meetings, they follow up on last month's activities and evaluate how Heidi has performed and how well she expects to perform in terms of sales for the upcoming month. The review meetings are conducted in order to make sure that she continuously progresses.

Heidi has actively participated in the educational courses that are offered through the business incubator. Her experiences with the educational courses have been both good and bad. In particular, one of the educational courses about creativity and innovation was very useful for her as the incubatees were provided with some practical training tools that they also could use after the educational courses ended. The educational course in marketing and sales was very disappointing, especially because the course instructor did not seem to understand the basics of marketing. The educational course about personal resources and development of these was satisfactory for Heidi. However, there were no new learning objectives that she could use in practice afterward. Nevertheless, it was beneficial to meet other incubatees at the course. In conclusion, it has been a mixed experience for her in terms of the quality and relevance of the different educational courses. She has applied some of the tools and knowledge gained from the educational courses in her entrepreneurial process and development. The educational course about creativity and innovation in particular provided her with tools that she has made use of often when generating new ideas for products or services for her company.

In Heidi's opinion, the course instructors within a business incubation program should focus on practical knowledge and tools that the incubatees can apply in their daily entrepreneurial process. She prefers hands-on training, which can be applied, tested, and implemented in her entrepreneurial process and development immediately. However, the educational topics that the educational courses cover were all relevant for the incubatees and the entrepreneurial challenges one meets as an entrepreneur.

Part of the Growth Factory business incubation program is that the incubatees can use the different business incubators across the region of Zealand, a networking possibility that Heidi has not made use of. Nevertheless, she has contacted other incubatees across the different business incubators, whom she contacts for advice and consulting every now and then. Furthermore, she is also in the process of collaborating with another incubatee, a collaboration that should generate more business for Heidi and the other incubatee. She met the incubatee at one of the educational courses organized by the Growth Factories, where she has also experienced other incubatees approaching her about advice and guidance within sourcing and manufacturing.

If Heidi had not been located at the Growth Factories, she believes, her entrepreneurial process would have progressed differently. She might have achieved the same goals, but definitely within a later time frame. Without the Growth Factories she would not have had as many other entrepreneurs and different coaches around her, all of whom have indirectly pushed her and motivated her forward. She would have been just as ambitious without the Growth Factories, but she would not have reached her goals as quickly. In her case, the network of other incubatees has proven to be the most beneficial part of the business incubation program, and especially the consulting that she has received through this network.

8.4.5 Heidi's entrepreneurial development within the business incubator

During the first 10 months Heidi has participated in the business incubation program, she has developed and progress remarkably as an entrepreneurs. However, as she is a novice entrepreneur, she has no prior entrepreneurial career to compare with. By definition entrepreneurs have to show initiative, and if incubatees choose not to use the different offerings at the business incubator, then they will likely get little out of the business incubation program. Heidi is an example of an incubatee that has used

many of the business incubation services considerably, and she therefore retains the conviction that she has gotten much out of the business incubation program. She has particularly expanded her professional network via the Growth Factories, and she has also saved much time by receiving much guidance from the local business incubation managers in regard to practical matters that occur during an entrepreneurial process. By being active at the business incubator in Holbæk, she has received much informal consulting from other incubatees as she has often shared her entrepreneurial challenges and company's progress with them. This has made her focus even more on her own entrepreneurial development, as when she tells other incubatees of her planned progress, she has to show them that she can reach these articulated goals. This makes her even more committed as an entrepreneur. An example of this commitment is seen in how she makes new sales projections on a continuous basis, and by telling other incubatees about these projections, she becomes very focused on getting the orders needed to prove to everybody that she has reached her articulated sales projections, a process initiated by her mentor from the business incubation program. The daily interaction with peers in the business incubator has in the first 10 months functioned as a motivational factor for her as she gains much positive energy from the other incubatees, which has also translated into her entrepreneurial development. After 10 months in the Growth Factory in Holbæk, she had exceeded all of her goals in relation to turnover, and she furthermore has reached goals that she had not expected to reach for 3 years.

Twenty months into the business incubation program, Heidi has employed her first Danish employee, which has been a radical change for her. Throughout the hiring process, she especially relied on advice and support from her mentor and her advisory board as she was very unsure about whether she was ready to employ her first employee. Her mentor helped her with this challenge by making her realize that if Plus 7 was to grow further, then she would have to hire employees. Through the local business authorities (which are partners in the business incubator in Holbæk), she learned that it was possible to get a wage subsidy from the Danish government for her first employee, a possibility that she had never heard about.

Twenty months into the business incubation program, Heidi still believes that attending the educational courses is important for the social and professional

interaction with the other incubatees as she still learns much from knowledge sharing with other entrepreneurs. Since the last interview, and now 20 months into the business incubation program, she has become more confident and comfortable about being an entrepreneur as well as about making strategic choices for her company.

8.4.6 Summative findings from the case

Heidi had expected a much more comprehensive and critical screening process where she would be challenged and furthermore could discuss her extensive business plan in detail with the business incubation managers.

Heidi believes that the network with the other incubatees is the most influential element of the business incubation program because she receives much advice and guidance in regard to her entrepreneurial challenges from informal consulting sessions with other incubatees at the business incubator in Holbæk. However, she has also received much guidance from her mentor and the local business incubation manager, and thus these have also been influential on her entrepreneurial process and development. Her mentor has influenced her entrepreneurial process significantly by making her focus on reaching budget and planning goals during her entrepreneurial process and development. For her, attending the educational courses is important both for the social and professional interaction with the other incubatees as this creates valuable bottom-up knowledge from knowledge sharing with her colleagues. However, it is also important for her that the educational courses provide practical training tools that the incubatees can apply in their daily entrepreneurial process, which has not always been the case. She also stresses that it is important for the incubatees to be active both professionally and socially in the business incubator in order to get most value out of the business incubation process.

During the first 10 months at the business incubator, Heidi progressed remarkably, and she extended her professional network and saved much time during the entrepreneurial process thanks to guidance and feedback from the local business incubation manager and her mentor. Her involvement in the business incubation program made her focus even more on her personal development as an entrepreneur, which has made her more committed. During the last 6 months, and 20 months into the business incubation program, Heidi has gotten more confident and comfortable

about being an entrepreneur and also about making difficult strategic choices for her company, Plus 7.

Heidi supposes that she would have achieved the same goals outside of the business incubator but that it would have taken longer. Furthermore, she states that if she were working outside of the business incubator, she would not have so many other entrepreneurs and different coaches around her to indirectly push her forward and keep her motivated.

8.5 Overview and comparison of the case study findings

To provide an overview of the case study findings before the results are analyzed in the next chapter, Table 4 has been created based on the case incubatees' perception of the business incubation process and the development of their own entrepreneurial process at the business incubator. Thus, the table provides an overview of what elements in the business incubation process are perceived as most influential by the case incubatees and how incubatees perceive being part of a business incubator as influencing their entrepreneurial process and development. These findings can then be compared and positioned with the theoretical understanding from the entrepreneurship literature.

Entrepreneur	**What elements in the business incubation process are perceived most influenced by the incubatees?**	**How does being part of a business incubator influence the incubatees' perception of their entrepreneurial process and development?**
Troels (novice)	1. The local business incubator manager and business consultant have positively influenced the entrepreneurial process. 2. Most influential element is the network with other incubatees.	1. Became more ambitious and confident during the time at the business incubator, especially due to the network and business consultant. 2. Business consultant emphasized both planning and experimentation during his entrepreneurial process.
Heidi (novice)	1. Network with the other incubatees is the most influential element of the business incubation process. 2. The mentor and local business incubation manager has been influential on Heidi's entrepreneurial process and development.	1. Made her more committed, confident and comfortable about being an entrepreneur. 2. The mentor introduced Heidi to use more structure and planning in her entrepreneurial process
Sean (experienced)	1. No elements of the business incubation process were influential 2. Network with the other incubatees was only influential for social reasons.	1. Has not developed as an entrepreneur. 2. Expects a more normative approach towards entrepreneurships
Ziya (experienced)	1. Most influential element is the network and the office space. 2. The business consultant has influenced the entrepreneurial development positively	1. Boosted Ziya's self-confidence and increased focus on networking 2. Both the mentor and business consultant advised Ziya to make use of his existing resources for creating entrepreneurial progress.

Table 4. Overview of the case study findings.

9. Business incubators and entrepreneurial development

Based on the analytical approach introduced in the method chapter, this chapter analyzes the case studies by seeking complementarities and applying synergistic positioning between existing entrepreneurship theory and the case study findings discussed in the previous chapter. Thus, the purpose of this chapter is to enter into a dialog with existing theoretical literature, thereby investigating whether any of the case study findings can be mirrored in the current entrepreneurship research, making it possible to create a set of propositions based on both empirical and theoretical considerations to be explored further via the survey. The case study findings, some in which were highlighted in Table 4, are compared and synergistically positioned against the theoretical framework of the entrepreneur, entrepreneurial self-efficacy, and effectuation/causation, which is compressed and formulated into operationalized explanations used for analysis in Table 5.

The entrepreneurial process and development	**Entrepreneurial Self-Efficiency (ESE)**
- Entrepreneurial process consists of discovery and exploitation of entrepreneurial opportunity (interrelated) - Entrepreneurial development is a social/ cultural learning process that is practiced via interaction and engagement with peers. - Difference between novice and experienced entrepreneurs.	- Belief in ability to navigate through the entrepreneurial process and development. - Entrepreneur's confidence and belief in oneself (internal) and in the environmental (external) constraints and possibilities. - High ESE represents entrepreneurial development.
Causation Logic ⟷	**Effectuation Logic**
- Entrepreneurial activity is directional and methodical - Strategic planning and thorough analysis is emphasized - Determination of desired outcome - Focuses on a goal that needs to be reached - Opportunities exists	- Entrepreneurial activity is an iterative and dynamic process. - Learn-by-doing and control of uncertainty and contingency is empathized - Creation of partnerships is empathized - Focuses on means - what is possible - Opportunities are created

Table 5. Overview of the theoretical analytical variables/categories.

9.1 The entrepreneurial process and development

From the theoretical review of the entrepreneur and the theoretical categorization introduced in Table 5, it is clear that the entrepreneurial process is to be considered a social and cultural process that can also be learned by individuals with no prior entrepreneurial experience (Rae, 2007). As entrepreneurship is a social and cultural learning process, one can argue that it is the entrepreneur's duty to learn how to maneuver, balance, and manage the different phases of the entrepreneurial process with an end purpose of establishing, growing, and maintaining a profitable organization. Furthermore, in the theoretical review, it was also determined that entrepreneurial development is a social and cultural learning process that is practiced through interaction and engagement with peers (Rae, 2007). When transferring this to the business incubation concept, it can be argued that business incubators establish a social and cultural learning environment through the agglomeration of peers. This is confirmed by the case studies, who all, except for Sean (see Table 4), showed that they learned and developed as entrepreneurs especially via the interaction with the other incubatees, though also via support and engagement with the business incubations staff. For example, Heidi stated that the network with other incubatees influenced her entrepreneurial development as she received much advice and guidance in regard to her entrepreneurial challenges from informal consulting sessions with other incubatees. Furthermore, Heidi also claimed that interacting with different coaches in the business incubator indirectly pushed her forward and kept her motivated. For Troels, interacting with other incubatees with growth ambitions also influenced his entrepreneurial development as the incubatees shared many of the same challenges. Furthermore, Troels also gained valuable insight about his entrepreneurial process and development from working with his business consultant, insight that he did not consider important prior to entering the business incubator. In Ziya's case, he saw that meeting with his business consultant influenced his entrepreneurial development significantly as he received solid advice and guidance concerning his business, and furthermore, the business consultant taught Ziya to understand the value of networking with potential partners. Sean, on the other hand, did not feel that his entrepreneurial process and development were influenced during his time at the business incubator. These case examples and the summative findings highlighted in Table 4 clearly illustrate that the entrepreneurial process and

development are influenced by the cultural and social environment of peers that business incubators create, and that entrepreneurs learn and develop via interaction, especially with other incubatees, but also with the business incubation staff.

From the overview of the theoretical analytical categories based on the theoretical entrepreneurship literature presented in Table 5, it is also evident that the different experience-based groups of entrepreneurs (Taplin, 2005), namely novice and experienced entrepreneurs, might be different in their entrepreneurial behavior. For example, novice entrepreneurs are more likely to recognize the importance of external advice during their entrepreneurial process, whereas experienced entrepreneurs demonstrate a higher level of confidence in themselves as entrepreneurs (Westhead et al., 2005). From the case studies it appears that one of the experienced entrepreneurs, Sean, seemed to possess a high level of confidence in himself, as argued by Westhead et al. (2005) above. Sean furthermore did not seem to value the importance of external advice, or at least he did not use it via the business incubator, and lastly, he did not seem motivated to develop himself as an entrepreneur. These findings could be based on the fact that he was an experienced entrepreneur who started several companies earlier in his career and thus did not believe that he could learn much more about being an entrepreneur. In contrast, the other experienced case entrepreneur, Ziya, appeared to be very motivated and accepting of external advice in relation to improving himself as an entrepreneur, which also comes across in the summative findings in Table 4. Therefore, it can be discussed whether Sean should have been accepted into the business incubator if he did not want to develop himself as an entrepreneur as the point of business incubators is to develop and influence entrepreneurs. Accordingly, it can be debated whether the screening process should have detected this lack of motivation in Sean. When we look at both of the novice case entrepreneurs, we discover that they were highly motivated to learn from the different actors in the business incubation process. Thus, the case study findings could mean that novice entrepreneurs are more willing to learn during their entrepreneurial process and development than most experienced entrepreneurs. This could be because novice entrepreneurs have no prior experience of the entrepreneurial process and development, which they are highly aware of, and as they are exploring an unknown area, they automatically seek assistance and information during their first entrepreneurial process and development. This empirical and

theoretical discussion of entrepreneurial experience is obviously of significant importance within a business incubation context as the difference in motivation might also indicate a difference in influence from the business incubation program. Therefore, this theme deserves further investigation with regard to how experienced and novice entrepreneurs might experience the influence of business incubators differently.

Based on the case study findings, it has been established that business incubators influence the incubatees and their entrepreneurial process and development via interactive learning and engagement with other incubatees and the business incubation staff. However, in order to investigate how the incubatees' entrepreneurial process and development is specifically influenced, we once again turn to the entrepreneurship literature and the theoretical analytical variables presented in Table 5. From here we can see that one of the entrepreneurial theoretical elements highlighted is that of entrepreneurial self-efficacy (ESE). This concept is important as entrepreneurs navigate in a process of high uncertainty, which means they have to rely on their own personal confidence and self-efficacy throughout their entrepreneurial process and development. Thus, entrepreneurial self-belief and self-efficacy are crucial fundamental elements in relation to entrepreneurial behavior and performance (Rae, 2007). Self-confidence and -efficacy are, according to Rae (2007), behavioral elements that *"[grow and develop] through successful experience, social learning from others, positive feedback and reinforcement, and personal maturity"* (p. 48), which makes them highly relevant theoretical concepts to discuss in relation to this dissertation as entrepreneurs' self-efficacy can clearly develop and thus perhaps also be influenced. This makes it an interesting element of the entrepreneurial learning and development discussion, especially with regard to how incubatees' self-efficacy might be influenced by business incubators. Hence, the concept of ESE will be compared and analyzed in the next section in relation to the case study findings.

9.2 Entrepreneurial self-efficacy

Before seeking complementarities between the theory and the case study findings, ESE is first reintroduced. ESE is based on the originally psychological term self-efficacy, also known as general self-efficacy, defined as an individual's own belief in his/her personal abilities to achieve and realize a task or goal within a certain setting

(Bandura, 1997). Wilson et al. (2007) stated that *"self-efficacy refers to an individual's self-confidence in specific tasks and situations"* (p. 389). ESE was established as a term to explain self-efficacy within the entrepreneurship context. As stressed in Table 5, ESE refers to entrepreneurs' confidence and belief in themselves and therefore their ability to navigate through the entrepreneurial process and development. According to Drnovsek et al. (2010), ESE explains entrepreneurs' confidence and belief in themselves (internal) and in the environmental (external) constraints and possibilities that they operate within. ESE is an interesting element to investigate within a business incubation context, as argued earlier in the theoretical discussion of entrepreneurship literature, as this dissertation relies on the assumption that high ESE represents entrepreneurial development.

From the comparison of the four different case studies, it is notable that three of the four incubatees described how they gained more confidence and commitment and raised their level of ambition for themselves as entrepreneurs as well as for their companies while participating in the business incubation program (see Table 4). The incubatees especially experienced boosted confidence and commitment within the business incubator as it offered business support, socialization, and learning with peers within an office agglomeration. Furthermore, all of the incubatees were screened before they were accepted into the business incubator, which is not the case of, e.g., an office hotel.

In Troels's case, he had no prior business education or knowledge before entering the business incubator, and 12 months into the business incubation program, Troels felt much more confident about himself as an entrepreneur, as he had learned more about the entrepreneurial process and gained a better understanding for exploring new business opportunities, knowledge he had gained especially via his collaboration with the business consultant. Furthermore, Troels had become more ambitious, and we also saw that Troels became more confident about being an entrepreneur from the first to the second interview. We saw a similar level of increased confidence from both Heidi and Ziya, as after 6 months in the business incubator, Ziya stated that his level of ambition had become more evident and he had also boosted his self-confidence as he learned how to navigate the market for engineering consultancy as an entrepreneur. During the first 10 months of the business incubation process, Heidi

received much feedback from the business incubation staff and the other incubatees, which made her focus even more on her entrepreneurial development. This increased focus made Heidi concentrate on articulating goals and creating sales projections for her company, which then made her even more committed to her entrepreneurial development. At the second interview and 20 months into the business incubation program, Heidi had become even more confident and comfortable about herself as an entrepreneur, as well as about making tough decisions for her company. Thus, from the summative findings presented in Table 4, we discover that three of the four case incubatees shared some level of improved entrepreneurial confidence as well as an increased level of ambition stimulated by the business incubator through interaction with peers and support from business incubation managers and business support consultants. Furthermore, Ziya also experienced that his entrepreneurial self-confidence was boosted from the screening process as the business incubation managers believed in him as an entrepreneur with growth potential. Likewise, Troels was also informed at the screening interview that he would be a good candidate for the Growth Factory in Næstved. Although Troels did not state during the interview that the screening process had increased his entrepreneurial confidence, it could have been the case, just as with Ziya.

An interesting discovery is how Ziya also gained more confidence about his entrepreneurial process and development, despite the fact that he was an experienced entrepreneur who had founded several companies prior to entering the business incubator, whereas Troels and Heidi were both novice entrepreneurs that had entered the business incubation program with their first company. This finding could mean that entrepreneurial confidence can increase regardless of prior entrepreneurial experience as it is a behavior that occurs and develops during social interaction, for example, within a business incubator. Nevertheless, one could expect novice entrepreneurs to experience a higher need to get accustomed to navigating the entrepreneurial process as they have not done this before, whereas experienced entrepreneurs should know how this process evolves. When seeking complementarities between the case study findings in Table 4 and the entrepreneurship literature in Table 5, we see that the described common behaviors among three of the four case incubatees indicate that participating in the business incubation program triggered increased entrepreneurial confidence and an increased

level of ambition in these cases, which notably can be compared with the entrepreneurial concept of ESE. It can simply be argued that the business incubator increased the incubatees' entrepreneurial self-confidence, which then resulted in increased ambition, and thus these concepts are intertwined and related to ESE, which refers to entrepreneurs' level of confidence and belief in themselves and in the environment they operate within.

By following the argumentation above, we detect a clear development in the three case incubatees (Troels, Ziya, and Heidi) that claimed to have increased their level of ESE during their time in the business incubation program. On the other hand, Sean stated that he had not experienced any entrepreneurial progress at all during his time at the business incubator, which also means that he had not increased or developed any level of ESE while participating in the business incubation program. This difference between the three other incubatees and Sean might tell us something about a difference in the influence of ESE that depends on an entrepreneur's level of experience, despite knowing that Ziya also increased his level of ESE during his time at the business incubator. Thus, measuring ESE among differently characterized entrepreneurs in a larger population of incubatees would be highly relevant for the purpose of this dissertation. As showed in Table 5, besides ESE, the concepts of effectuation and causation can also provide us with an understanding of how entrepreneurs learn and develop in the context of uncertainty, and thus these concepts are analyzed in relation to the case study findings in the following section.

9.3 Effectuation and causation

As one of the more current influential discussions within entrepreneurship theory focuses on Sarasvathy's (2001) distinction between the aspects of effectual and causal logic among entrepreneurs, it should be noteworthy to investigate how these theoretical considerations are related to the case incubatees and their entrepreneurial development. As described in the theoretical entrepreneurship framework (chapter 4) and presented in Table 5, effectual logic refers to a learning-by-doing method by which entrepreneurs use whatever resources they have available and realize their entrepreneurial endeavor based on these. The development of the entrepreneurial venture is then tested on the entrepreneurs' network, and the network also plays an

important role throughout the entrepreneurial process as a resource and source for potential partnerships. Effectual entrepreneurs focus on the means and resources they have available, and then go for what they can achieve with these existing resources. As highlighted in Table 5, causal logic, on the other hand, is based on the assumption that entrepreneurial decisions and progress should be based on thorough analysis, which makes it possible to predict the outcomes of the entrepreneurial process. Causal entrepreneurs tend to plan for a desired outcome, which signifies that their entrepreneurial process is considered to be directional and methodical with the purpose of reaching a particular goal. Thus, it could be argued that the difference in logic and entrepreneurial philosophy is determined by whether the entrepreneurs prefer to apply business planning and a goal-oriented entrepreneurial process (causation) or to focus on effectuating (effectuation) by using their existing resources and discovering what can be achieved with these in an exploring and learn-by-doing entrepreneurial process. However, as argued by Bergendahl (2009), entrepreneurs do not follow the causation or effectuation process completely but instead tend to operate somewhere between the two processes throughout their entrepreneurial process and development, and thus it can be difficult to determine whether the cases apply or have been influenced particularly by effectual or causal logic. However, this does not mean that it is not possible to discuss the differences through analysis of the cases and the concepts of effectuation and causation, and the double-sided arrow in Table 5 accordingly signifies that there is a difference in the explanation of the entrepreneurial logics.

From the case studies we see behaviors of both effectuation and causation in their entrepreneurial process and development, and for some of the incubatees, it seems that they mainly preferred one of the entrepreneurial logics over the other, whereas others applied both logics, as argued by Bergendahl (2009). In Heidi's case, we learned that through the mentor process (part of the business incubation program), she learned how to articulate goals and make sales projections for her company, and in general the mentors supported Heidi in introducing more structure and planning into her entrepreneurial process (see Table 4), all elements that were key components of Heidi's entrepreneurial progress and also closely related to the concept of causation. Furthermore, from Heidi's perception of the screening interview, we learned that she thoroughly filled out the screening manual with the needed information, after

which she was very disappointed when the business incubation managers did not ask her about the details of her comprehensive business plans. Hence, there are indicators that Heidi mainly applied and preferred a causal approach in her entrepreneurial process and development, both prior to entering the business incubator and during the business incubation program, as it seems that the causal approach was encouraged by her mentor. According to Dew et al. (2009), novice entrepreneurs prefer causal logic, which should mean that Troels (the other novice entrepreneur) also carried out expensive business planning throughout his entrepreneurial process. However, based on the case study, it is hard to detect this preference for Troels in his entrepreneurial process and development. Twelve months into the business incubation program, Troels and his business consultant had initiated a process wherein Troels was trying to find new business models and business opportunities for his company, but it did not seem as if this process were based particularly on thorough business planning or the assumption that it would be possible to predetermine an desired outcome for their process, which would be aligned with causal thinking. On the other hand, when they initiated their business consulting process 6 months prior, they discussed Troels's business plan and goals for the future, which is much aligned with the business-planning and goal-oriented focus of the causal approach. Nonetheless, from the case study it also seems that Troels emphasized the importance of creating collaborations and partnerships during his entrepreneurial process, as he was disappointed that this was not happening at the business incubator. These elements are highlighted in the effectual logic. Thus, it is hard to conclude, based on the case study and thus the summative findings in Table 4, whether or not Troels preferred or mostly applied a causal or effectual approach.

If we look at both of the experienced entrepreneurs, we see significant indicators that point toward a focus on effectual knowledge, which is also argued by Politis (2008), who claimed that previous entrepreneurial experience might be an important foundation for how experienced entrepreneurs gradually develop a preference for the effectual approach. Sean's experience with business support via the business incubation program was that it was too comprehensive and consisted mostly of filling out comprehensive budgets and other business planning documents, and furthermore from Sean's experience, the business consultants operated only reactively. For Sean, many of the tasks associated with the business support process were unnecessary and

too intensive for busy entrepreneurs. These findings clearly indicate that Sean did not believe in the value of causal business planning. Therefore, it seems arguable that Sean preferred effectual logic, as he opposed the causal approach. However, on the other hand, Sean also claimed that he wished that the business consultants and the business incubation program had a more normative approach toward entrepreneurship, where the incubatees were told what challenges they should focus on. Hence, Sean seems to be self-contradictory in his view of the entrepreneurial process and how entrepreneurs best can be influenced, which makes it hard to conclude what entrepreneurial logic Sean supported the most. If we turn to the other experienced entrepreneur from the case incubatees, Ziya, we learn that during his business incubation process, he focused on locating and creating partnerships with other companies and entrepreneurs, a dedicated process that paid off for his entrepreneurial development. Additionally, for the first 12 months in the business incubation program, Ziya was also focused on getting to know the market that he was operating in by networking with other entrepreneurs and trying to figure out how to navigate the market as an entrepreneur. These findings could indicate that Ziya gained knowledge of the market via a learning-by-doing process where he was seeking commitment from relevant and potential partners and therefore focusing on what was possible instead of targeting a clearly defined goal based on business planning. Ziya's focused partnership approach and his learning-by-doing entrepreneurial approach of trying out different areas of the market, instead of following a traditional business-planning approach, could suggest that Ziya preferred applying an effectual approach to his entrepreneurial process and development. This approach was supported by both his mentor and his business consultant, who advised Ziya to primarily use his existing resources for creating entrepreneurial progress, which is also shown in Table 4. Thus, it can also be discussed whether support and guidance from the business incubation staff is based on effectual or causal logic, as the case study findings suggest that different advisors applied different logic in their consulting with the incubatees. Furthermore, it is also unclear whether the business incubation staff knew of the concepts and differences between causation and effectuation, and whether this influenced the design and implementation of the business incubation program, as they were not interviewed.

In conclusion, regarding seeking complementarities and applying synergistic positioning between the case studies and the theoretical consideration of effectuation and causation, it is clearly difficult to conclude any common analytical traits based on the different cases. This is largely due to the complexity of the theoretical concepts of effectuation and causation, which makes it hard to operationalize them for analysis based on this case study format. Nevertheless, it is obvious that some of the cases had a preference for one of the logics over the other, which might also be the case of the business incubation staff and thus also the way in which the business incubator strives to influence the incubatees. This theme should be explored further in relation to how business incubators might influence the perception of the incubatees in relation to their entrepreneurial process and development. Accordingly, effectuation and causation should also be included in the design of the survey distributed to all of the incubatees at the Growth Factories, despite the difficulties in operationalizing the concepts for analysis, which are discussed further in chapter 11 when the survey is introduced.

9.4 Case study findings and the survey design

In analyzing the findings of the case studies by seeking complementarities using synergistic positioning with the entrepreneurship theoretical framework (summarized in Table 5), it was discovered that tendencies from the case studies (highlighted in Table 4) were very much reflected in some of the theoretical entrepreneurial concepts that explain how entrepreneurs think, act, and develop while navigating through their social and cultural entrepreneurial process and development. The synergistic positioning analysis was conducted in order to gain a better understanding of which elements of the entrepreneurial process, from a theoretical perspective, were relevant to investigate further, with regard to how being part of a business incubator might influence the incubatees' perception in relation to their entrepreneurial process and development.

Based on the findings discussed in the case study analysis, in which the cases were compared and positioned against a theoretical framework of entrepreneurship theory, this section bridges these results with the design and implementation of the survey, by which it was possible to test and investigate even further what we have learned so

far about how incubatees' perception might be influenced. The survey also made it possible to explore and examine what elements in the business incubation process might be perceived as most influential by the incubatees. Thus, in order to create a solid fundament for the survey, a set of propositions was set forth, based on what we have learned about the incubatees and their perception of participating in the business incubation program in relation to theoretical knowledge:

1. Most incubatees perceive that they learn and evolve as entrepreneurs through the interaction with the other incubatees, i.e., the network element of the business incubation program.
2. Some incubatees perceive that their entrepreneurial process and development has been influenced by support and engagement with the business incubation staff, i.e., business consultants/mentors and business incubation managers.
3. Some experienced entrepreneurs possess a high level of confidence in themselves as entrepreneurs and therefore might not perceive the business incubator process as influential in their entrepreneurial process and development.
4. Novice compared to experienced entrepreneurs might be more motivated to learn during their entrepreneurial development because they by definition have no prior experience of the entrepreneurial process and therefore might perceive the business incubator as more influential than experienced entrepreneurs.
5. Most incubatees perceive an increased level of commitment, confidence, and ambition in relation to their entrepreneurial process and development as influenced by the business incubation process.
6. Different elements of the business incubation process are perceived as more influential than others. For example, network with peers and support from business incubation staff are perceived as being particularly influential, whereas the educational courses are not.
7. The incubatees might perceive their ESE as being increased through participation in the business incubation program regardless of prior entrepreneurial experience.

8. Some incubatees mainly apply and prefer either effectual or causal logic in their entrepreneurial process and development.
9. The incubatees might perceive the business incubation staff as influencing what logic they prefer in their entrepreneurial process and development.
10. Incubatees that have previous entrepreneurial experience tend to prefer and apply effectual logic over causal logic.

These propositions, identified through the case study analysis, were incorporated into the design of the quantitative survey distributed to the whole population of the Growth Factories, as this helped us to further discover what elements in the business incubation process are perceived as most influential by the incubatees in relation to their entrepreneurial process and development. However, before we turn to the survey, we investigate the internal consistency of the case study findings and the survey results, and thus provide full transparency of the results.

10. Internal consistency: Case study – survey results

In order to estimate the level of internal consistency of the case study findings and the survey results, this chapter introduces and discusses the survey answers from the four case incubatees. As is elaborated on in the following chapter when we introduce and discuss the survey findings in depth, the respondents, including the four case incubatees, were asked to rate how participation in the business incubation program had influenced their entrepreneurial process and development, based on a set of several measures and business incubation elements. For this a 5-point Likert scale was used, with 1 being lowest and 5 highest. The survey strategy is also discussed more thoroughly in the next chapter. The reader must be aware that the survey was distributed 6 months after the second and last interview was conducted with the case incubatees. Thus, the case incubatees could have experienced something during this 6-month period that could have influenced their perception of the business incubator and the different support elements of the business incubation program and hence their answers to the survey questions. This time difference issue has also highlighted by McMullan et al. (2001). However, regardless of this time difference, the survey answers from the four case incubatees should provide us with valuable insight about the level of internal consistency between the two studies.

Firstly, we can conclude that the classification of the cases' entrepreneurial experience, which was determined by the author, matches the perspective of the cases themselves when they were asked about their level of entrepreneurial experience in the questionnaire, as depicted in Table 5.

Incubatee	Experience
Ziya	Experienced
Heidi	Novice
Troels	Novice
Sean	Experienced

Table 5. Responses to entrepreneurial experience.

10.1 Effectuation/causation

To investigate whether the case incubatees had a preference for effectual or causal logic (even though this can be difficult to measure quantitatively), the case incubatees were asked to rate to what degree they believed the following elements were important for their entrepreneurial process. For the purpose of this dissertation, causal logic was measured by two elements – business planning and conducting market and competitor analysis – whereas effectual logic was measured by the answer choices of creating partnerships and strategic alliances and learning by doing. These measures are obviously simplified, but as is explained later in the survey chapter, this approach is adequate for the purpose of this dissertation. The answers of the case incubatees are displayed below in Figure 13.

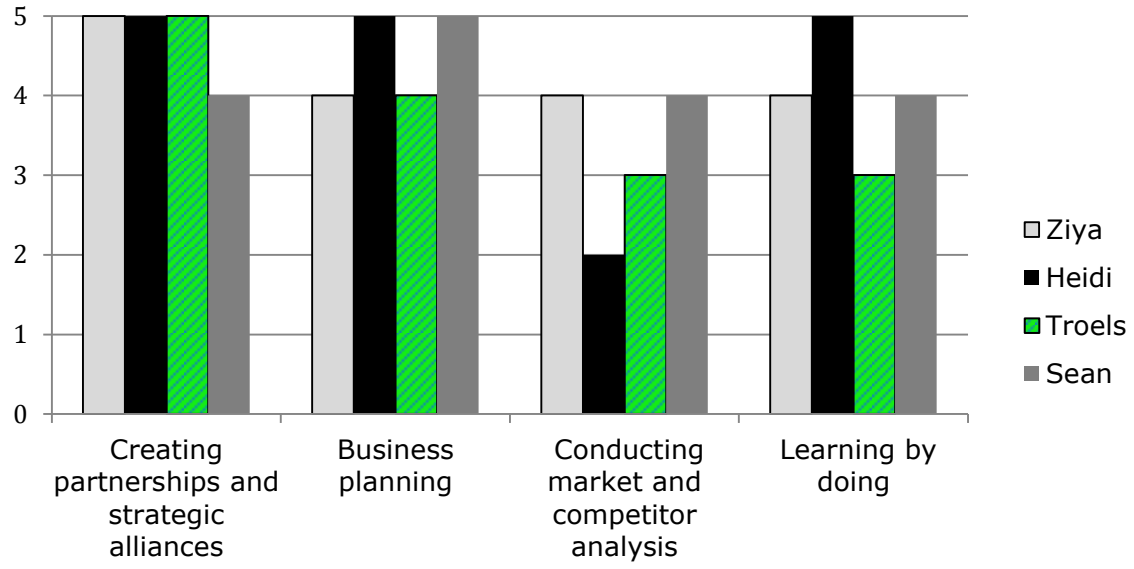

Figure 13. Perceived importance of elements in the entrepreneurial process and development (Likert scales 1–5).

From Figure 13 above, we can see that Ziya rated all of the different elements in the entrepreneurial process at 4 except *creating partnerships and strategic alliances,* which he perceived to be very important and thus rated 5. These answers are very much aligned with the findings we discovered in the case study, where Ziya indicated that especially the business consultant had taught him to understand the value of establishing collaborations with potential partners via his network. Thus, according to the survey results, Ziya would be categorized as an effectual entrepreneur, as the

effectual elements combined are rated higher than the causal elements. Even though both *business planning* and *conducting market and competitive analysis* are rated 4, there is a clear indication from the case study that Ziya prefers effectual logic; e.g., Ziya stated that he learned the value of how he can best ensure progress in his entrepreneurial development by exploiting the tools and resources available to him, which is much aligned with the effectual mind-set.

When we study Heidi's answers from the survey, we can see that she rated all of the proposed elements of the entrepreneurial process as 5 except for *conducting market and competitor analysis*, which is not rated as an important element of the entrepreneurial process. This is quite surprising, as Heidi rated *business planning* to be of great importance in her entrepreneurial process, which is also stressed in the case study findings. Regardless, according to the survey answers, she is classified as preferring effectual logic, which could also be backed up with the case study findings suggesting that acquiring knowledge through her entrepreneurial network was of significant importance for Heidi's entrepreneurial process. However, findings from the case study could also argue that Heidi prefers causal logic, as she appreciated the planning process that her mentor had carried her through.

In the case of Troels, we can see that his answers are a bit more spread out across the different entrepreneurial elements, as he rated both *learning by doing* and *conducting market and competitor analysis* as having a neutral importance in his entrepreneurial process, whereas *business planning* is rated 4 and lastly *creating partnerships and strategic alliances* is rated 5. Based on these answers, Troels is classified as preferring effectual logic; however, it could also be argued that he should be categorized somewhere in between, as his answers are closely balanced and it is hard to conclude from the case study whether he seems to prefer an effectual or causal mind-set.

Sean rated all of the entrepreneurial elements at 4 except for *business planning*, which is rated 5 and thus very important for his entrepreneurial process and development. This means that Sean would be categorized as preferring causal logic in his entrepreneurial process based on the survey results. From the case study, we learned that he started his company without any extensive business planning, but from the survey answers, we can see that he considered *business planning* to be very

important for his entrepreneurial process. This difference might indicate that Sean learned from his mistakes in not using business planning prior and thus considered it to be valuable now. On the other hand, as indicated from the case study findings, it is also possible that Sean is self-contradictory in his perception and thus answers at times.

Based on the four case incubatees' answers to the questionnaire, three of the four cases are categorized as preferring effectual logic. Nonetheless, these three cases also value the importance of the causal elements to some degree, just as the causal entrepreneur also values the effectual elements. However, for quantitative purposes, it has been decided to roughly categorize the incubatees into one category or the other, even though the literature and the empirical findings indicate that in general entrepreneurs apply both of the entrepreneurial logics at different times during the entrepreneurial process and development. Despite the difficulty in measuring the differences among incubatees in relation to effectuation and causation, we still see a difference that is interesting to investigate further. In relation to the case study findings and the survey results, it is difficult to either confirm or disconfirm the internal consistency of the results regarding the theoretical concept of effectuation and causation.

10.2 Business incubation elements

The following figure depicts the survey answers of the case incubatees regarding how they perceived the influence of the different elements of the business incubation program in relation to their entrepreneurial process and development.

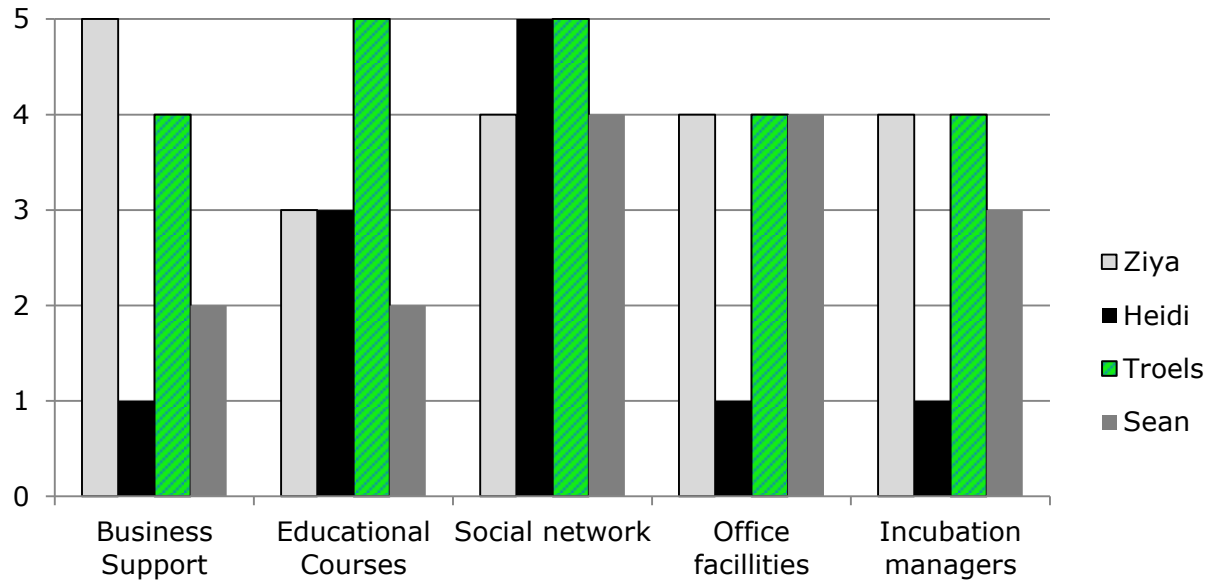

Figure 14. Perceived influence of separate business incubation program elements on the entrepreneurial process (Likert scale 1–5).

From the survey answers, we discover that Ziya rated *business support* as the element that had the most influence on his entrepreneurial process, followed by *social network*, *office facilities*, and *incubator manager*. Only *educational courses* is rated as not having any significant influence on his entrepreneurial process and development. These answers are very much aligned with the findings of the case studies, where Ziya stated the business consultant influenced him as an entrepreneur significantly, and both the network and office space were mentioned as being the most beneficial elements of the business incubation program. Furthermore, from the case study, we found that Ziya did not believe that the educational courses were influential, which is probably why it was only rated 3 in the survey.

When studying Heidi's survey answers, we detect that the *social network* element was perceived as the most influential element of the business incubation program, which is

aligned with the findings of the case studies. Additionally, there is also a match between the rating of *educational courses* from the survey and the qualitative findings of the cases, where she stated that there was room for improvement and that they were beneficial in terms of the network that was created when meeting other incubatees at the courses. Surprisingly, both *incubation manager* and *business support* are rated low in terms of influence on Heidi's entrepreneurial process in the survey, but in the case study, these elements were highlighted as being very influential on her entrepreneurial process. This is inconsistent and hard to explain, but it could be because of some sort of response bias or because Heidi has changed her perception over time. The low rating of *office facilities* from the survey could be aligned with the case study findings, where these are not mentioned or discussed much, only in relation to the network element.

Troels rated both *educational courses* and *social network* as being the most influential elements of the business incubation program, even though the case study showed that Troels believed the educational courses lacked practical knowledge. The remaining elements are also rated as having a significant influence on Troels's entrepreneurial process, which is much aligned with the positive findings that were discovered from the case study, where Troels claimed the business incubation program had a positive influence on his entrepreneurial process and development.

From Sean's survey answers, we can see that only *social network* and *office facilities* were considered to have an influence on his entrepreneurial process. This is aligned with the case study findings, as it is concluded that Sean did not believe that he had developed as an entrepreneur while at the business incubator, but he had grown his entrepreneurial network significantly. Furthermore, from the case study is also seems as if Sean had chosen to be part of the business incubator mostly because of the office facilities and the network, as he had not made much use of the other support elements. For example, he stated that as long as the business incubation manager made sure that the daily operation of the business incubator was running smoothly, then he was satisfied.

When comparing the survey answers of the case incubatees with the case study findings, there seems to be overall internal consistency between the two except for the case of Heidi, who differed notably in her survey answers and the case study. This

could be for several reasons, e.g., time difference between the last interview and filling out the questionnaire or some sort of response bias that is hard to detect.

10.3 The entrepreneurial process

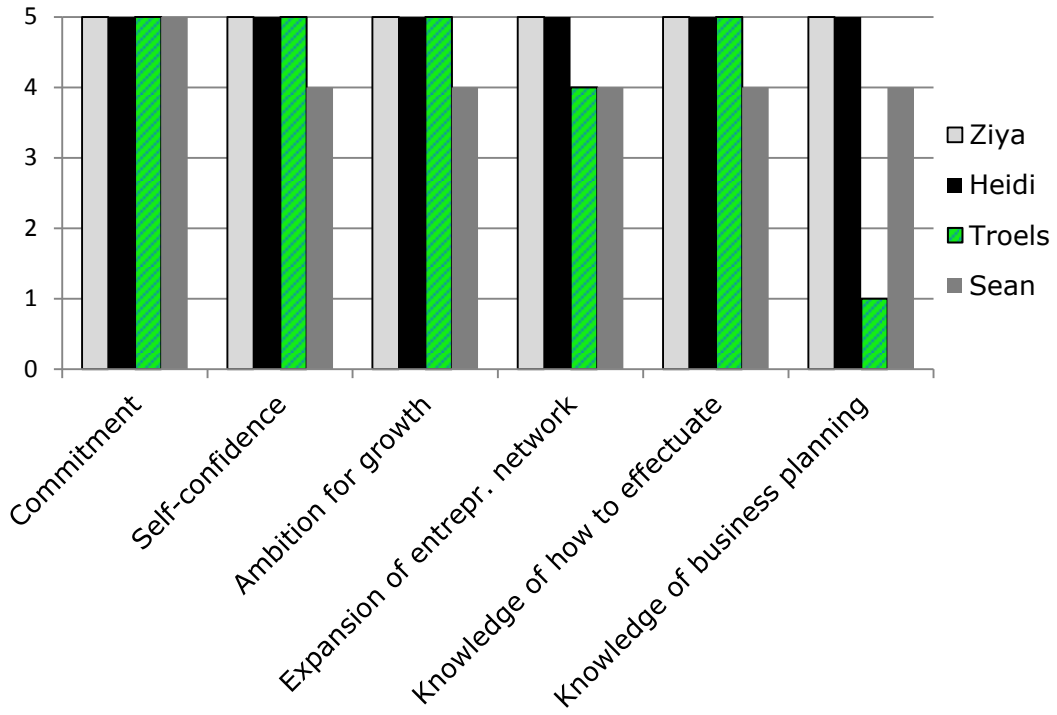

Figure 15. Perceived influence of the overall business incubator on aspects of the entrepreneurial process (Likert scale 1–5).

As depicted in Figure 15, we can see that all of the case incubatees rate *commitment*, *self-confidence*, and *ambition for growth* as very significant aspects of their entrepreneurial process and development that they perceived as being positively influenced by the business incubator. This is aligned with the case study findings that all point toward this perceived influence, expect Sean, who, it seems, did not believe that he developed as an entrepreneur during his time at the business incubator, despite the fact that he answered differently to the questionnaire.

Expansion of the incubatees' entrepreneurial network was also perceived to have been influenced by all of the incubatees, which is also aligned with the conclusions we can draw from the case study findings. In relation to knowledge of how to effectuate and

knowledge of business planning, all of the incubatees perceived that the business incubator also had influenced this area except for Troels, who did not perceive to have been influenced and thus did not learn about knowledge of business planning. No findings from his case study can contradict this result. From the case studies, it is again hard to compare the qualitative findings with the effectuation and causation element measured via the questionnaire. This is due to the complexity of the theoretical concepts, which makes it hard to draw them out of the qualitative case studies.

Based on the comparison of the case study findings with the survey answers of the four case incubatees, we can conclude that there seems to be reasonable internal consistency between the qualitative and the quantitative results. However, there are also notable differences, some of which cannot be logically explained. Still, 100% internal consistency cannot be expected, in this researcher's opinion, especially with a time difference of 6 months between the last interview and the distribution of the survey, as well as the contradictory findings in the case studies.

11. Survey

11.1 The empirical data collection process

Based on qualitative findings from the cases, a set of propositions was introduced at the end of chapter 9 to explain how the perception of incubatees might be influenced by participating in a business incubation program. In this chapter these propositions are investigated and discussed quantitatively on the whole population of the Growth Factories, thereby again focusing on the perceptions of the incubatees. All of the incubatees from the Growth Factories were invited to respond to an electronic survey that included closed-ended questions and was distributed by e-mail in December 2012 (see Appendix 5 for the distributed questionnaire). Responses from exactly 100 of 147 currently participating incubatees were collected, meaning that 68% of incubatees responded to the survey. It is not possible to draw any conclusions about the remaining 32%, but the large response rate for this voluntary survey suggests that the results are rather robust. In order to ensure a high response rate, two reminder e-mails were distributed after 1-week and 2-week intervals. Subsequently, the respondents were contacted by phone in order to learn whether they were interested in participating in the survey. A survey is preferable because it can capture data on a large set of entrepreneurs within business incubators, including their perceptions of influence. Still, a survey with closed-ended questions runs the risk of limiting and forming responses unnecessarily, even though several of the questions are factual background questions where these problems are limited. For the questions related to perception of influence, the danger is more apparent. This issue was addressed by forming the questions and responses based on the eight interviews conducted with the four incubatee cases and the propositions that were subsequently formulated. Furthermore, as mentioned earlier, a pilot study with five incubatees was conducted and followed up by short telephone interviews to ensure that the incubatees did not experience problems in understanding the questions and possible responses.

The survey part of the dissertation serves two purposes. One is to identify the characteristics of incubatees who participate in business incubation programs that are classified as being somewhere between "mixed incubators" and "economic development incubators," as the Growth Factories' objective is both to create start-up

companies and employment and to improve the development of the region of Zealand. The second purpose of the survey is to investigate how the incubatees within the Growth Factories quantitatively perceive the influence of the business incubator and the different elements of the business incubation program in relation to their entrepreneurial process and development. The survey is based on a somewhat exploratory approach to investigate the composition of incubatees and the simple relationships between entrepreneurial characteristics and the business incubation program and thus introduce crude measures of these. Furthermore, the empirical data obtained from the survey rely on mean measures from the aggregated answers, which can be considered to be an unsophisticated statistical approach. However, for the purpose of this dissertation, it should be adequate, and accordingly, the reader should be aware of this simplicity when the results are presented and discussed. Firstly, we investigate the characteristics of the incubatees, which was also touched upon in the case studies.

11.2 Characteristics of the incubatees

This section identifies characteristics of incubatees within the Growth Factories to gain a better understanding of what types of entrepreneurs are represented in the business incubators, which can also help to understand the responses in the survey. The incubatees are mapped based on the location of the various Growth Factories, how long the incubatees have been participating in the business incubation program, when the incubatees' companies were established, and their educational background and line of business.

11.2.1 Location of the incubatees

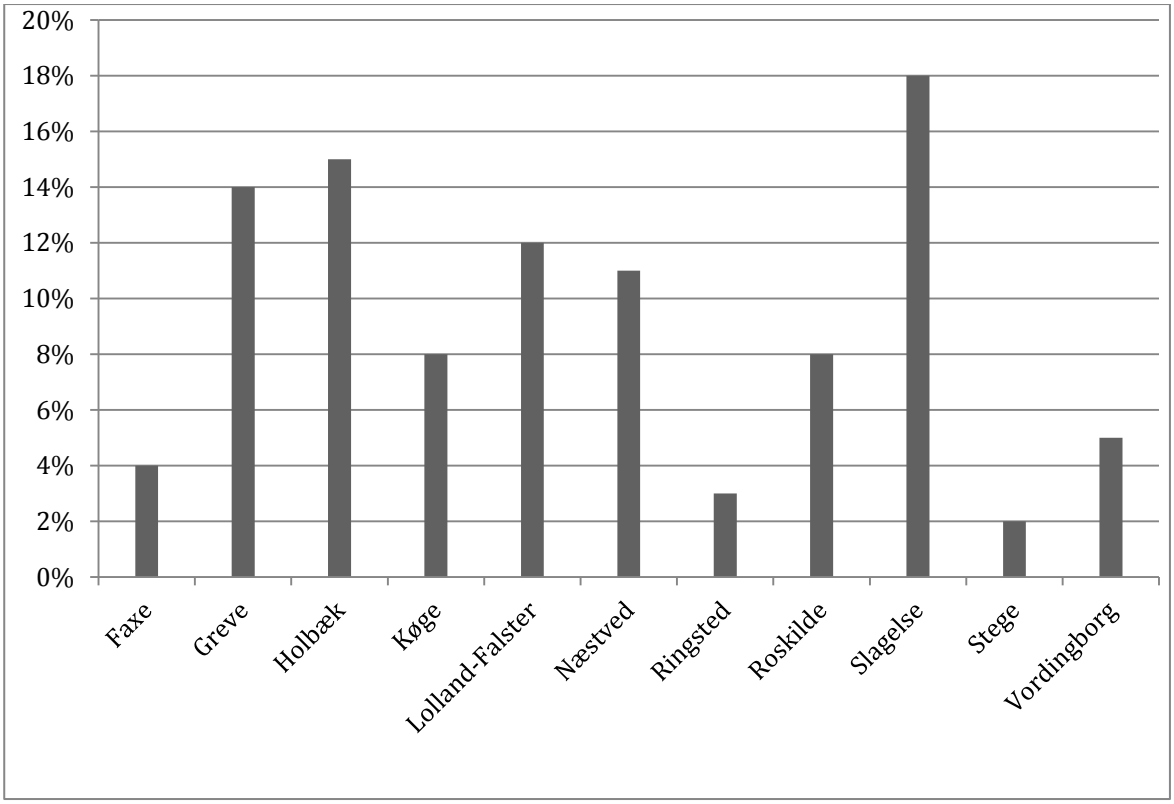

Figure 16. Respondents by location of business incubators.

Out of the 100 incubatees, it was possible to collect answers from all of the 11 Growth Factories. However, as depicted in the graph, there is a large difference in the number of represented incubatees from each of the different Growth Factories. This is because there are significant differences in the sizes of the different Growth Factories, as well as possible differences in how many entrepreneurs were at the different business incubators when the survey has distributed. The maximum size of the individual business incubators varies from 6 incubatees in Stege to 44 in Holbæk. As pointed out in the introduction to the Growth Factories (chapter 6), the business incubators opened at different times, which also means that some Growth Factories have achieved higher occupancy rates. These differences in the number of respondents from the different Growth Factories are addressed further in the end of this chapter (section 11.4).

11.2.2 Time spent at the Growth Factories

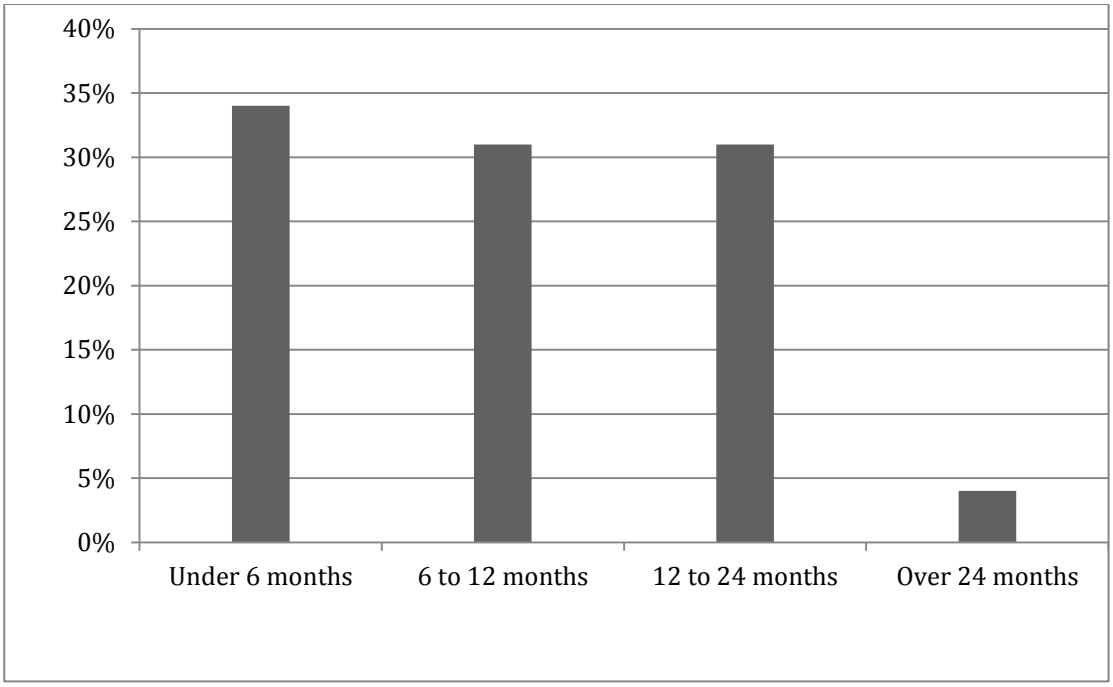

Figure 17. Respondents by time spent at the Growth Factories.

Although 65% of all incubatees had participated in the Growth Factory business incubation program for a duration of less than 1 year, it is still possible to see potential elements of influence from the business incubation program. This was also apparent in the qualitative case results, which showed an influence of the business incubation program on the case incubatees' entrepreneurial process and development at both the first and second interviews. Nevertheless, there may be a difference in the perception of the incubatees that have been at the business incubators for a longer period of time and have thus been exposed to the business incubation elements longer. For this reason, a set of tests for differences in perception of influence based on the length of stay was performed and did not show any significant results, suggesting that other factors may be perceived more important, as demonstrated later in this chapter. A large group of incubatees had been at the business incubators between 12 to 24 months, which means that these incubatees should have been well on their way in their business incubation process and thus adapted much of the knowledge obtained throughout the business incubation program. Owing to the somewhat early project stage of the Growth Factories project, and because the

business incubators were launched at different stages, the number of incubatees who had been at the business incubators for more than 24 months is quite small.

11.2.3 Incubatees' year of establishment

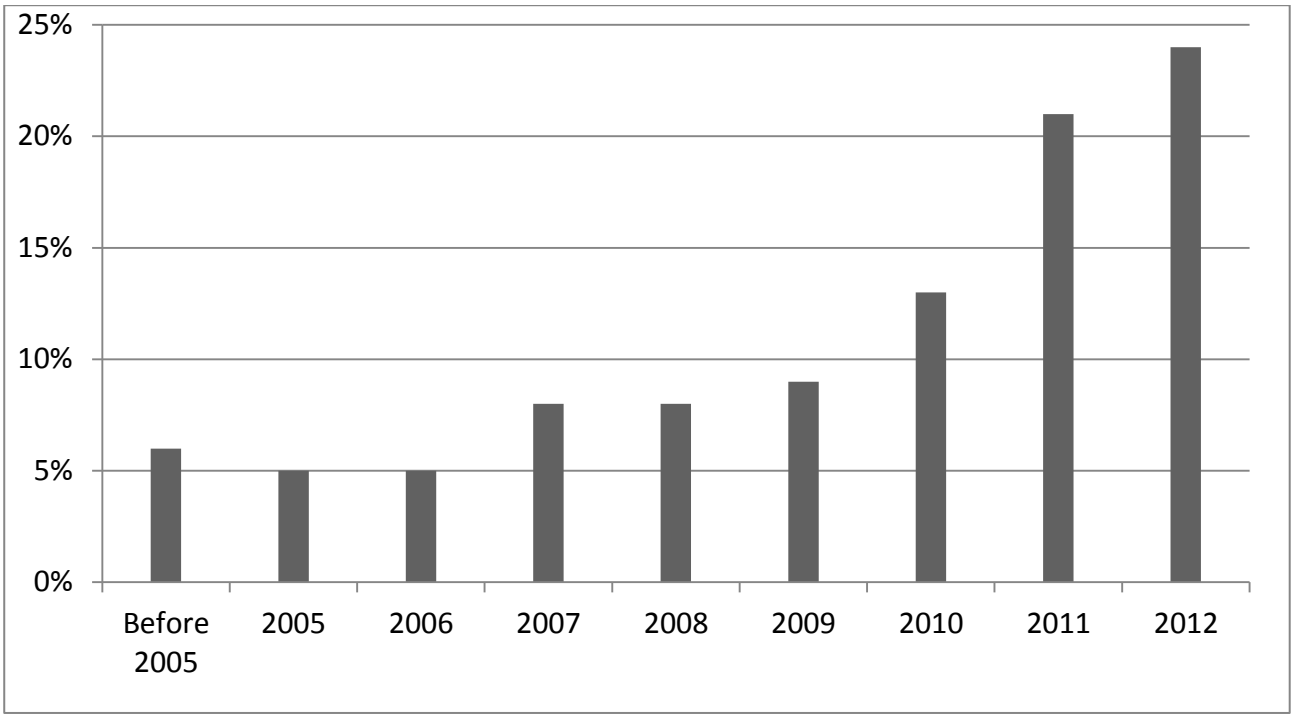

Figure 18. Respondents by year of establishment.

More than half of the incubatees established their company less than 3 years ago, and 24% registered their company in 2012. This suggests that a large group of the incubatees registered their company just as they entered the Growth Factories, which is a requirement for all of the 11 business incubators. Thus, it could be argued that these incubatees used the Growth Factories as a springboard for realizing their entrepreneurial endeavor. On the other hand, it appears that the 41% of the incubatees who registered their companies 4 years ago or more might have used the Growth Factories as a launching pad to increase growth in their more consolidated companies.

11.2.4 Incubatees' company size

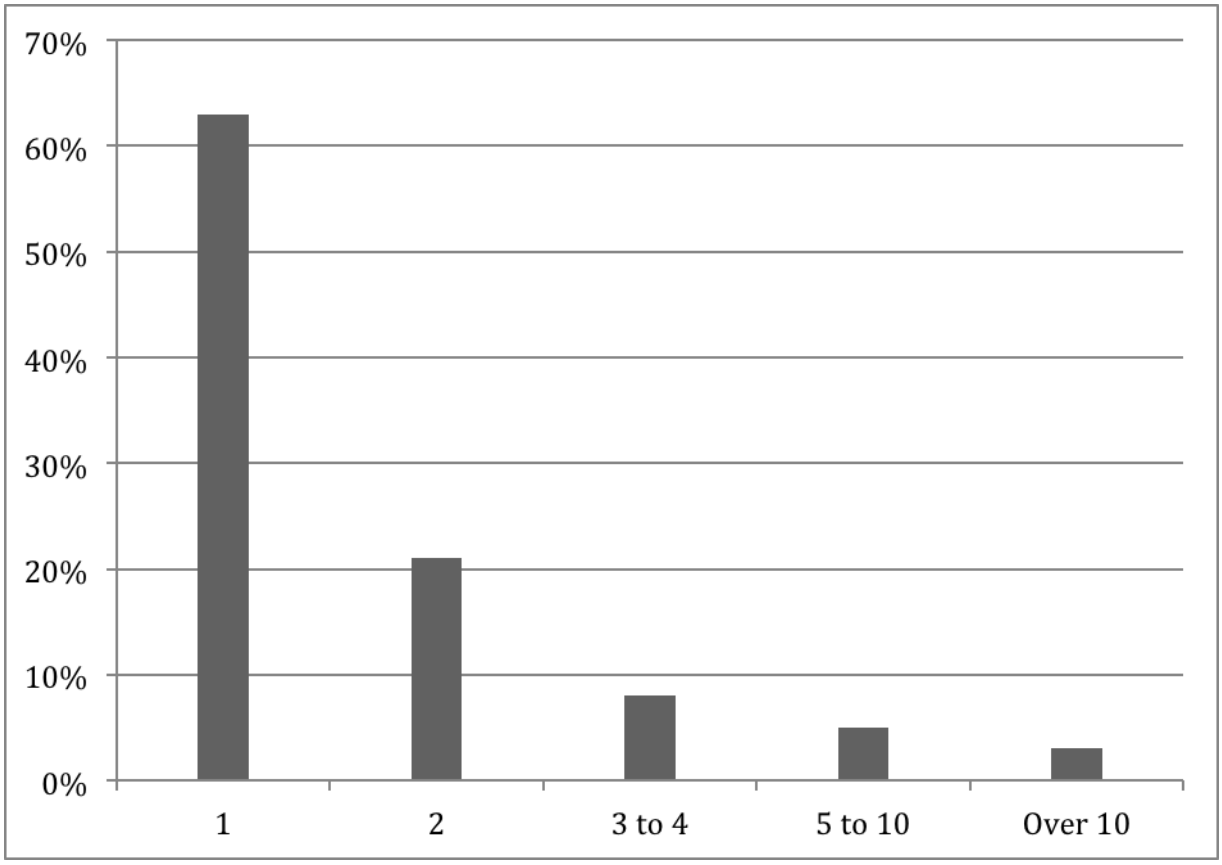

Figure 19. Respondents by company size.

One-man companies account for 63% of the incubatees' registrations, meaning that they do not have any employees or partners. This should not be unexpected as around 50% of the incubatees are between 1 and 2 years old and thus need to create their company from scratch and generate a reasonable revenue stream before eventually hiring employees. Incubatees with 2–4 employees could have either achieved growth through their time at the business incubator or entered the Growth Factories with a partner or employees. Incubatees with more employees than there is room for at the business incubators often represent an parent corporation established somewhere else, or else the entrepreneur (owner) is located at one of the Growth Factories while some of the employees are located elsewhere.

11.2.5 Incubatees' line of business

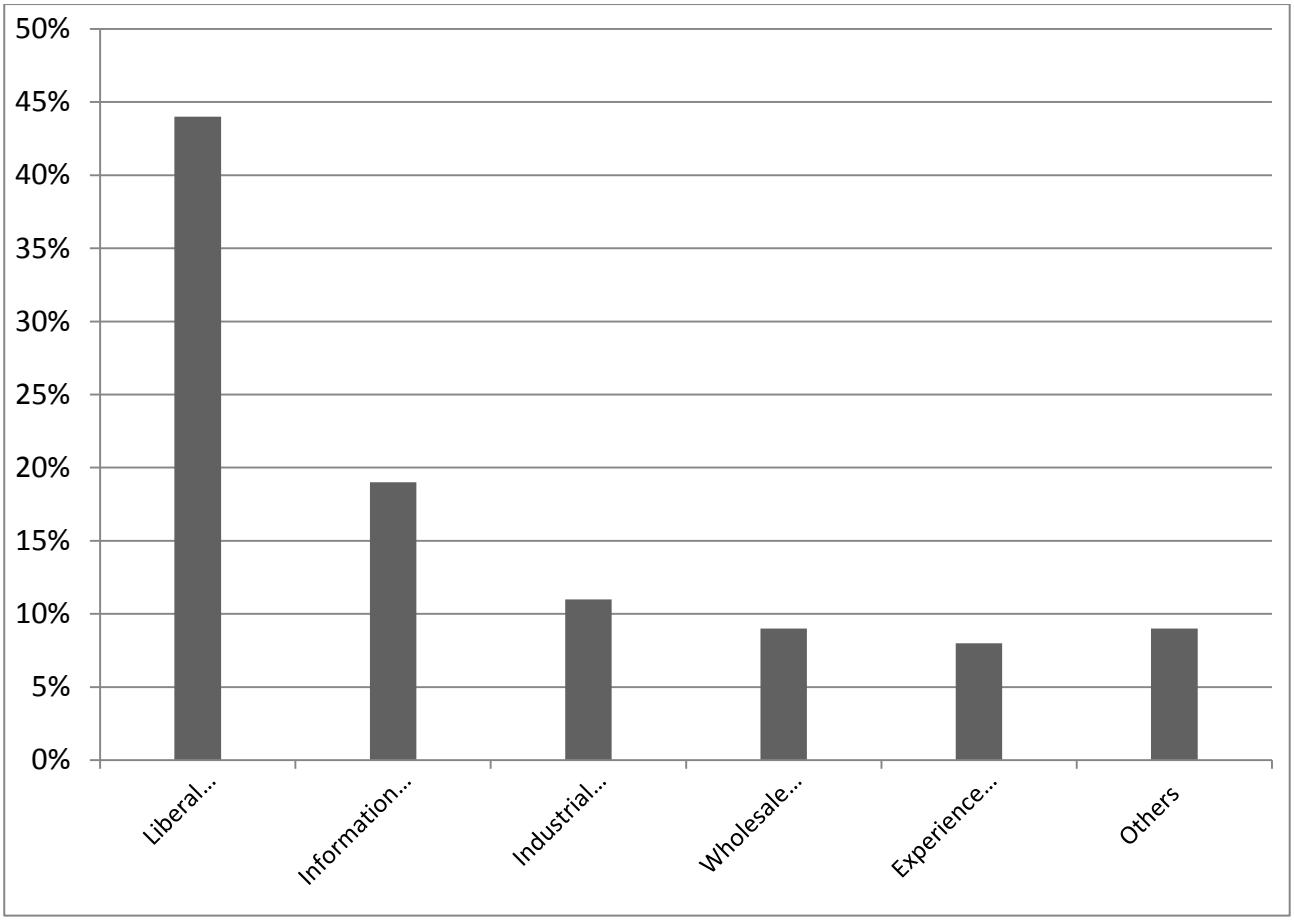

Figure 20. Respondents by line of business.

The largest group of incubatees, at 44%, operates within liberal services, which means that this group of entrepreneurs often sells their knowledge packaged as some sort of consultancy service. Information technology companies, which cover the development, maintenance, and sale of products and services associated with information technology, account for 19% of the incubatees. Wholesale or retail trading, which also includes online shops, accounts for 9% of the entrepreneurs within the business incubators. So-called creative businesses, which also include companies focused on the experience economy, comprise 8% of the incubatees. This group of incubatees is most likely at the Growth Factory in Roskilde, as this business incubator has a restricted focus on the experience economy and creative industries. The remaining 11% of the incubatees focus on development or production of new products, which might be innovative and patentable products and solutions.

11.2.6 Incubatees' educational background

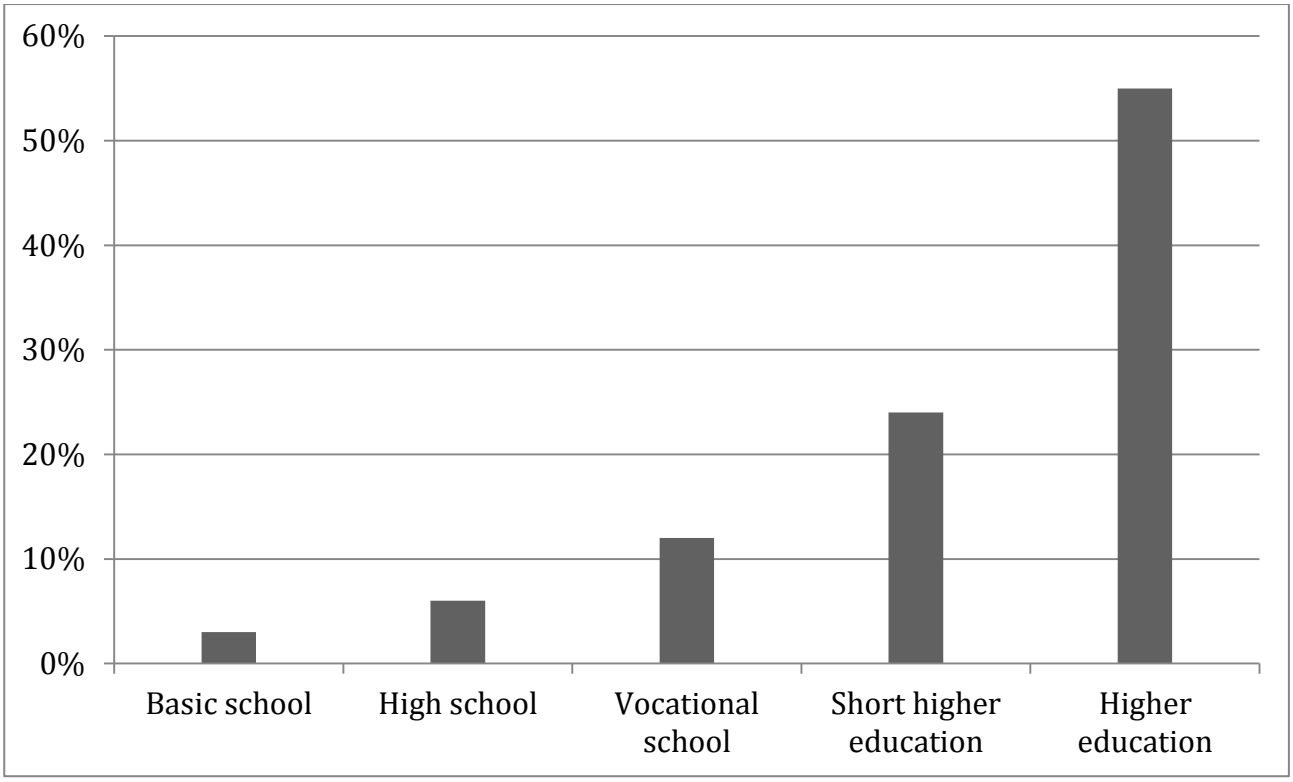

Figure 21. Respondents by educational background.

Incubatees with a university degree account for 55% of the group, and an additional 24% have a shorter university degree but are still considered to be highly educated. Only few of the incubatees have graduated only from basic school or high school; 12% of the entrepreneurs inside the Growth Factories have attended vocational school, which is classified as a more practically focused school in which students are taught skills that can be applied in a particular job setting. Thus, it can be concluded that the incubatees of the Growth Factories are considered to be a group of highly educated entrepreneurs as 79% of the incubatees hold a shorter or longer higher education (university degree). This might be expected as approximately 44% of the incubatees operate within the liberal services industry, which often means that the entrepreneurs sell their knowledge as consultancy services and thus need to be well educated.

11.3 How do incubatees perceive the business incubators' influence?

11.3.1 Business incubation elements

In order to determine what elements in the business incubation process were perceived as most influential by incubatees, the entrepreneurs from all of the Growth Factories were asked to rate to what degree participation in the business incubation program had influenced their entrepreneurial process on a number of different measures and their overall entrepreneurial process. The questions were answered on a Likert scale of 1–5 with 1 being lowest and 5 highest. Likert scale items are interpreted as intervals, which allows for the calculation of means and standard deviations and hence simple comparisons appropriate for this study without any major statistical problems (Johnson & Creech, 1983; Zumbo & Zimmerman, 1993). The business incubation elements chosen for investigation were identified partly from the Growth Factories program and the case findings but also from the comprehensive review of existing literature within the business incubation field introduced in the beginning of the dissertation. From the literature, it was especially emphasized that the network among the incubatees is of significant importance in business incubation programs (see Pena, 2010; Bøllingtoft & Ulhøi, 2005; Peters et al., 2004; Rice, 2002). Furthermore, the literature also revealed that business incubation managers play a significant role in the business incubation process as these professionals monitor the incubatees closely in relation to their entrepreneurial progress and make sure that the business incubator operates in a professional manner (Adegbite, 2001). In addition, business incubation managers can introduce incubatees to potential partnerships or customers (Zhang & Sonobe, 2011). From the case studies, it was also clear that the office facilities were of great importance to the incubatees. Based on these considerations, it was decided to explore the following business incubation elements: *network, office facilities, business support, business incubation managers,* and *educational courses*. Results are presented in following summative scale table (Table 6).

Business incubation elements	Mean	Stdv.
Network with other incubatees	3.61	1.13
Office facilities	3.36	1.24
Business support consultants	3.17	1.38
Business incubation managers	2.95	1.11
Educational courses	2.89	1.21

Table 6. Perceived influence of business incubation program elements on the entrepreneurial process (Likert scale 1–5).

From the summative scale table, we can see that the incubatees indicated that the network with other incubatees in particular was perceived as having the most positive influence on their entrepreneurial process and development. Furthermore, the office facilities of the business incubators were also perceived as an element of the business incubation program that had a minor positive influence on incubatees' entrepreneurial process and development. The importance of the network is also confirmed via the literature and the case studies, and thus this result can to some degree be expected. Additionally, the office facilities are by definition important for business incubators and the incubatees as these facilities form the physical space where the social and cultural entrepreneurial process can develop, as well as where the network with other incubatees is established. Thus, the office facilities and network elements of the business incubators are closely related to each other, even if the incubatees might not be aware of this.

The business incubation managers and the educational courses, on the other hand, scored much lower than the network with other incubatees and the office facilities, with mean scores below 3. From the case studies, we can also see that the educational courses were not perceived to influence the case incubatees' entrepreneurial process and development, although both Troels and Heidi stated that they were beneficial. For Sean, the educational courses were brush-up courses of knowledge that he gained during his time at business school. Heidi also stressed that

the educational courses were mainly of importance because of the possibility to network with and learn from other incubatees, whereas Ziya believed that the educational courses were conducted too fast, leaving little time to network with other incubatees. Thus, from the case studies, we can conclude that the educational courses were not perceived to be a significant influence on the case incubatees' entrepreneurial process and development. This is also supported by the overall survey results. From the survey results, it is also clear that the business incubation managers were not perceived as an element that influences the incubatees, although in the case studies and the literature, business incubation managers are highlighted as being of importance. Three of the case incubatees stated that the business incubation managers had supported or guided them during their entrepreneurial process and development, an opinion that is not represented in the survey results. However, as stated by the literature, the business incubation managers are responsible for ensuring that the business incubators operate in a professional manner, so they create and maintain the frames in which the social and cultural learning process of the incubatees and the network with other incubatees exists. Accordingly, it can be argued that the role of the business incubation managers is vital for the incubatees' development. However, it is understandable that the incubatees did not perceive the business incubation managers as having a direct influence on their entrepreneurial process and development when they were asked about this via a survey, as the managers' role to some extent is hidden behind the scenes and thus not prominent in the business incubation program.

The business support consultants (business consultants and mentors) were perceived as having a minor positive, but more neutral, influence on the entrepreneurs' development, with mean scores on the Likert scale just above 3. This result is noteworthy, as three of the four case incubatees (Troels, Ziya, and Heidi) claimed that the business support provided by the mentors and business consultants were perceived as having influenced their entrepreneurial process and development positively. Additionally, the literature supports the claim that business support is an essential element of the business incubation program (Hansen et al., 2000). However, when investigated quantitatively, the incubatees reported that the business support was only perceived to have only a neutral or minor positive influence on their entrepreneurial development.

After the investigation of how the incubatees perceived the influence of the overall business incubation program and its different elements, it was necessary to investigate whether there was a difference in influence perceived by different types of entrepreneurs, as indicated by the entrepreneurship literature and the case findings. Based on the literature and the case study findings, it was found relevant to divide the incubatees in two categorical schemes. One scheme is entrepreneurial experience, where entrepreneurs are divided into experienced and novice entrepreneurs, and the other scheme is entrepreneurial logic, where entrepreneurs are divided into groups that prefer either effectual or causal logic. Classifying incubatees based on entrepreneurial experience is rather uncomplicated; those who had previously launched another company as an entrepreneur were classified as experienced entrepreneurs, the others novice entrepreneurs. Classifying incubatees based on a preference for effectual or causal logic is more complex owing to the nature of the theoretical concepts and thus more difficult to operationalize, as discussed prior in the method chapter (section 7.6.1). Furthermore, operationalizing measures of effectuation and causation for quantitative purposes has only been done a few times (Perry et al., 2012). Hence, it was decided to simplify the concepts as much as possible, as inspired from Wiltbank et al. (2009) and Fischer (2012): causation as a traditional, classic, and linear perspective of an entrepreneurial process that rely on business planning, predetermined outcomes, and comprehensive market research, and effectuation as an uncertain, dynamic, and interactive learning-by-doing process that stresses the importance of partnerships and collaborations. To investigate these elements, the incubatees were asked, *"To what degree do you believe that the elements below are of importance for your entrepreneurial process and development?"* and inspired by Chandler et al.'s (2011) operationalizing of survey questions and this dissertation's understanding of the theoretical concepts as discussed above, the respondents were provided the following elements to rate:

- Creating partnerships and strategic alliances (effectuation)
- Business planning (causation)
- Conducting market and competitor analysis (causation)
- Learning by doing (effectuation)

The terms "effectuation" and "causation" were not included in the questionnaire (see Appendix 5). The incubatees whose summed rating for *Creating partnerships and strategic alliances* and *Learning by doing* as higher than for the other two options were classified as effectual, and the others causal entrepreneurs. This mirrors the creation of a composite indicator for effectual logic divided into the top and bottom half. The researcher is aware that the distinction between effectual or causal entrepreneurs is a simplification that does not fully reflect the complexity of the theory. However, as the purpose of this research is not related to performance or hard measures of the incubatees but to incubatees' perception in relation to the entrepreneurial learning process, this clear distinction was chosen to investigate whether incubatees preferred one logic in their entrepreneurial process and how they perceived the influence of these concepts. The results should be considered with this in mind, just at the case studies show that the incubatees relied on both effectual and causal logic but at different levels.

The division of incubatees into the respective categorical schemes (experience and logic) resulted in groups of relatively similar sizes. But since business incubators can house only a limited number of incubatees, and thus the sample size of this survey amounted to only 100 incubatees, testing for differences among all four groups was meaningless, as the subgroups would have consisted of fewer than 30 incubatees each. Hence, in order to have large enough groups for meaningful comparisons, only tests for differences based on the two primary classifications were carried out. Thus, pair-wise t-test based on the primary classifications were more appropriate than other tests such as ANOVA, which is introduced later. While the distinction between novice and experienced entrepreneurs, and between effectual and causal entrepreneurs, is crude, it did allow for fulfillment of the purpose, namely the comparison between groups of incubatees with differentiable characteristics.

First, we looked at how experienced and novice incubatees perceived the influence of the different elements of the business incubation program in relation to their entrepreneurial process. The data analysis was performed by simply calculating conditional means of the Likert item scores based on entrepreneurial experience, and by performing a two-tailed t-test for comparisons of the respective means. A p-value

below 10% indicates that the difference between the two groups' mean rating of each element is statistically significant.

Mean	Business Support	Educational Courses	Network	Office Facilities	Incubation Managers	N
Total	3.17	2.79	3.61	3.36	2.95	100
	(1.38)	(1.21)	(1.13)	(1.24)	(1.11)	
Novice	3.37	2.95	3.67	3.52	2.95	60
	(1.43)	(1.23)	(1.13)	(1.26)	(1.16)	
Experienced	2.88	2.55	3.53	3.13	2.95	40
	(1.26)	(1.15)	(1.13)	(1.18)	(1.06)	
***T*-statistic**	1.81	1.66	0.61	1.58	0.00	
P-value	0.07	0.10	0.54	0.12	1.00	

(The t-statistic and p-value shows the results of a two-tailed t-test for comparing the means of two groups with different standard deviations. Standard deviation in parentheses)

Table 7. Perceived influence of business incubation program elements on the entrepreneurial process based on **novice** and **experienced** incubatees (Likert scale 1–5).

The conditional means based on the novice and experienced incubatees' perceptions of the influence of the business incubation program elements on their entrepreneurial process and development show some differences between the respective types of incubatees. It seems that incubatees with previous entrepreneurial experience perceived the general influence of the business incubation program as lower than novice entrepreneurs, as the experienced entrepreneurs consistently rated each of the different business incubation elements lower than the novice entrepreneurs. Only business incubation managers is rated at the same level. The differences among the other elements are significant at a 10% level for the business support and the educational courses, which means that the novice entrepreneurs perceived the influence of the business support and educational courses as significantly higher than the experienced entrepreneurs, and in general the novice entrepreneurs perceived themselves as more influenced by the different business incubation program elements

than the experience entrepreneurs did. The only element that was rated similarly by both groups is the network with other incubatees, but the novice entrepreneurs rated this also a bit higher than the experienced entrepreneurs. For some reason, the results also show that the novice entrepreneurs perceived themselves as more influenced by the office facilities than the experienced entrepreneurs did, which is unexpected as both groups value the importance of the network element. This might be because novice entrepreneurs have a higher need than experienced entrepreneurs for appearing professional, which the office facilities can help them with, as this can legitimize their company and themselves as entrepreneurs.

Second, we investigated whether entrepreneurs with a preference for causal or effectual logic perceived themselves as differently influenced by the elements of the business incubation program in relation to their entrepreneurial process.

Mean	**Business support**	**Educational courses**	**Network**	**Office facilities**	**Incubation managers**	**N**
Total	3.17	2.79	3.61	3.36	2.95	100
	(1.38)	(1.21)	(1.13)	(1.24)	(1.11)	
Causation logic	3.15	2.77	3.36	3.49	2.91	47
	(1.44)	(1.15)	(1.19)	(1.16)	(1.10)	
Effectuation logic	3.19	2.81	3.83	3.25	2.98	53
	(1.33)	(1.27)	(1.03)	(1.30)	(1.13)	
T-statistic	0.14	0.19	2.09	0.99	0.30	
P-value	0.89	0.85	0.04	0.32	0.77	

(The t-statistic and p-value, show the results of a two-tailed t-test for comparing the means of two groups with different standard deviations. Standard deviation in parentheses)

Table 8. Perceived influence of business incubation program elements on the entrepreneurial process based on incubatees' preference for **causal** and **effectual logic** (Likert scale 1–5).

The means for the different elements of the business incubation program are relatively similar between incubatees with a preference for causal or effectual logic,

except for the network with other incubatees. The incubatees with predominantly effectual logic rated the influence of the network with other incubatees significantly higher than the incubatees with predominantly causal logic. This is not unexpected as this is supported by the entrepreneurial theoretical framework, which argues that effectual entrepreneurs learn and develop via interaction with other entrepreneurs, whereas entrepreneurs with a preference for causal logic might prefer to learn and develop via business planning and thorough analysis. Consequently, the findings based on preferred entrepreneurial logic provide with no novel outcomes.

After this investigation into what elements in the business incubation process were perceived as most influential by different types of entrepreneurs, the following chapter investigates how being part of a business incubator influenced the incubatees' perception in relation to their entrepreneurial process and development, based on the entrepreneurial theoretical considerations identified and discussed in the literature and the case study findings in chapter 9.

11.3.2 Entrepreneurial process and development

As indicated in the theoretical entrepreneurship chapter, it is clear that the entrepreneurial process is a social and cultural process that can also be learned by individuals with no prior entrepreneurial experience (Rae, 2007). As entrepreneurship is a social and cultural learning process, one can argue that it is the entrepreneur's duty to learn how to maneuver, balance, and manage the different phases of the entrepreneurial process with the end purpose of establishing, growing, and maintaining a profitable organization. Furthermore, in the theoretical review, it was also determined that entrepreneurial development as a social and cultural learning process is practiced through interaction and engagement with others, where the entrepreneur becomes someone that maneuvers through the entrepreneurial process by acting in an enterprising way by identifying and/or creating and acting on an entrepreneurial opportunity (Rae, 2007). Turning to the entrepreneurial theoretical considerations, as well as the qualitative case studies, it was identified that both entrepreneurial self-efficacy (ESE) and the concepts of effectuation and causation were elements of importance and would be relevant to investigate when measuring elements of perceived significant influence in the entrepreneurial process and development. Hence, in this regard, the incubatees were asked to rate on Likert scale

to what degree both their overall stay within the business incubator and the different elements of the business incubator had influenced elements of their entrepreneurial process and development.

Perceived influence on ESE was measured by three similar items of possible influence rated on a Likert scale: *ambition level for themselves*, *self-confidence in themselves as entrepreneurs*, and finally *their commitment level to their entrepreneurial venture*. In order to investigate whether the incubatees perceived themselves as influenced by gaining effectual or causal knowledge/logic via participation in the business incubation program and its respective elements, the respondents were asked to rate to what degree they had gained knowledge of business planning (causation) or knowledge of how to effectuate (effectuation) and expand their entrepreneurial network (effectuation) via the business incubation program. As the concept of effectuation is harder to define, two items were introduced, compared to only one for causation. The inclusion of network as an effectual outcome does not mean that it is not important in a causal learning process but merely that it is more emphasized in an effectual learning process. As discussed earlier in this chapter, the researcher is aware that the measures of effectuation and causation might be considered to be simplified, but as the questions were verified by the test respondents and as the purpose of the survey was merely to provide insight into to what degree these theoretical elements can be reflected in the incubatees' perception, this approach is considered to be adequate. The results are presented in Table 9.

	Overall business incubation	Business Support	Educational courses	Network	Incubation managers	ANOVA F-statistic	ANOVA P-value
Commitment	3.57 (1.18)	3.05 (1.32)	2.75 (1.15)	3.52 (1.08)	2.74 (1.11)	9.80	<0.001
Self-confidence	3.62 (1.17)	3.03 (1.32)	2.80 (1.23)	3.50 (1.13)	2.91 (1.09)	6.64	<0.001
Ambition for growth	3.73 (1.16)	3.01 (1.25)	2.77 (1.18)	3.46 (1.04)	2.79 (1.12)	7.74	<0.001
Expansion of entrepr. network	3.46 (1.14)	2.32 (1.01)	2.70 (1.20)	3.48 (1.05)	2.81 (1.19)	14.70	<0.001
Knowledge of how to effectuate	3.31 (1.12)	2.79 (1.17)	2.75 (1.16)	3.23 (1.09)	2.67 (1.07)	18.74	0.002
Knowledge of business planning	3.08 (1.15)	3.02 (1.21)	2.74 (1.14)	2.80 (1.08)	2.58 (1.05)	5.04	0.049

(The F-statistic and P-value show the results of a one-factor ANOVA-test for comparing the means of the four different elements. Standard deviation in parentheses)

Table 9. Perceived influence of the **overall** business incubator and **separate** business incubation program elements on the entrepreneurial process (Likert scale 1–5).

As shown in Table 9, the elements of the incubatees' entrepreneurial process and development that were perceived as having been influenced the most are those related to ESE. The element that was rated as having been most highly influenced is the entrepreneur's level of ambition, followed by self-confidence of the entrepreneur, and finally, level of commitment of the entrepreneur toward his or her entrepreneurial venture. ESE was also identified as the most prominent element of the entrepreneurial process and development in the case studies, as three of the four case incubatees clearly stated that their level of entrepreneurial self-confidence, commitment, and ambitions had increased during their participation in the business incubation program, and these elements were perceived as further increased from the first to the second interview.

The causal element of *knowledge of business planning* seems rather neutral, scoring a mean value just above 3, which suggests that the incubatees did not believe that their entrepreneurial process and development had been influenced substantially by increased knowledge of business planning and causal logic during their time at the business incubator. In regard to the effectual elements of *knowledge of how to effectuate* and *expansion of entrepreneurial network,* we can see that these elements were rated just a bit higher, which could mean that effectual knowledge is slightly more emphasized than causal logic during the business incubation program; however, the small difference could also mean that they are perceived as having similar importance. When we relate these considerations to the findings from the case studies, we learn that the case incubatees applied or believed in different effectual or causal entrepreneurial methods in different situations and that the business incubation staff and program likewise guided the incubatees differently with regard to the idea of effectuation and causation. For example, Heidi's mentor emphasized the importance of business planning and goal setting, whereas Ziya's business consultant taught him the importance of and how to create and use his entrepreneurial network during his entrepreneurial process. In Troels's case, his business consultant focused on Troels's strategic challenges and on identifying practical tasks that should be solved in order to progress, which could indicate guidance based on both causal and effectual logic. Therefore, the case study findings did not show that one of these concepts (effectuation or causation) was more applied or influential on the incubatees'

entrepreneurial process and development. Still, expansion and importance of the incubatees' entrepreneurial network (which is strongly emphasized in effectuation), was identified as being a significant element of influence for the entrepreneurial process and development of three of the four case incubatees, just as in the survey. This does not mean that preferred causal entrepreneurs do not value the importance of network, but just that networking is more emphasized in an effectual entrepreneurial process.

When concluding how the different elements of the incubatees' entrepreneurial process and development were perceived as having been influenced by the overall business incubation environment, it is evident that the ESE factors are rated the highest, whereas the causation element is rated the lowest and the effectuation factors range in the middle. This suggests that the incubatees generally consider the largest positive influence on their entrepreneurial process and development to be related to their ESE. In order to investigate the perceived influence of the individual elements of the business incubation program on the entrepreneurial process, a simple ANOVA-test was introduced.

The simple ANOVA test merely tests whether the means of several groups are equal. Since we now are dealing with means for the business incubation elements as the groups of comparisons, which all 100 incubatees have rated, the sample size is large enough for ANOVA to be appropriate. The ANOVA test is appropriate when dealing with means of several groups as opposed to the simple t-test for comparisons, as several t-tests among the groups would increase the chances of making type 1 errors. While the ANOVA test overcomes this burden, it gives only limited information about which groups cause the significant difference. The statistical conclusion of the ANOVA test, if the p-value is low enough, is thus merely that there are significant differences among the groups of business incubation elements. Since the p-value is very low for all ANOVA tests, it can thus be concluded that the differences in the ratings of the various business incubation elements are statistically significant. In other words, there are statistically significant differences in how the business incubation elements are rated as having a perceived effect on the various entrepreneurial process elements.

In general, the network with other incubatees is rated the highest, particular on the ESE factors, which suggests that the network with other incubatees is perceived as directly improving and influencing the incubatees' ESE. This is supported by the case study findings and the theoretical entrepreneurship framework (e.g., Rae, 2005, 2007), which show that the entrepreneurial process and development of the incubatees is a social and cultural learning and development process where the incubatees develop and learn from other incubatees, which also means that they influence each other's ESE. In contrast, the business incubation managers and the educational courses scored considerably lower, which suggests that these elements are perceived as having a much smaller influence on the entrepreneurs' development in relation to ESE and effectuation/causation. This is not surprising as when measuring the educational courses and the business incubation managers' perceived influence on the overall entrepreneurial process and development of the incubatees, these elements also seemed to have no influence. In terms of the educational courses, it was found that the educational courses were not perceived as directly influencing the case incubatees' entrepreneurial process and development, and from the survey we can now also state that the incubatees did not perceive the educational courses as having particularly influenced their development in relation to effectuation, causation, or ESE. These results might be different if the educational courses were, e.g., based on a workshop format, as argued earlier in this dissertation, as this might create a learning environment that encourages networking among the incubatees, which could then encourage effectual logic and ESE. Alternatively, the educational courses could also go in another direction and concentrate on teaching the incubatees about the value of business planning and market analysis, thus influencing this element of the entrepreneurial process and development. Regardless, the current setup of the educational courses did not seem to have any influence, as perceived by the incubatees. In relation to the perceived lack of influence of the business incubation managers, it should again be mentioned that the case studies and the literature highlighted different results (as discussed earlier), and it can be argued that the role of the business incubation managers is vital for the incubatees' development and thus might also influence the different elements of the incubatees' entrepreneurial process and development, but that their role is to some extent hidden behind the scene, and thus not perceived as valued by the incubatees.

From the perceived influence of the separate business incubation elements in relation to the entrepreneurial process and development, we learn that the only factor for which the network does not score higher than the other business incubation elements is knowledge of business planning, where business support is rated higher. This finding could suggest that in the entrepreneurial learning and development process that occurs among the incubatees, business planning is not considered to be an important element that the incubatees might learn from each other.

11.4 Division of answers among the business incubators

As discussed in the methodology chapter, the empirical quantitative data have been created based on aggregate answers from all of the 11 Growth Factories. Thus, in order to make visible any variation between the different business incubators, this chapter discusses the respondents' answers based on the different business incubators, so the reader can evaluate the validity and reliability of the aggregated empirical results.

As we can see from Figures 22 and 23, where the means of the respondents' answers are presented, there are significant differences among some of the business incubators. One reason for this is related to the significant differences in the sizes of the different Growth Factories, and there might have been differences in their occupancy rates when the questionnaire was distributed.

Business Incubator	Number of respondents
Stege	2
Ringsted	3
Faxe	4
Vordingborg	5
Køge	8
Roskilde	8

Næstved	11
Lolland-Falster	12
Greve	14
Holbæk	15
Slagelse	18

Table 10. Number of respondents per business incubator.

The maximum size of the individual business incubators varies from 6 incubatees in Stege to 44 in Holbæk. This is automatically reflected in the number of respondents representing the different business incubators (see Table 10). Accordingly, the mean answers of the Growth Factories in Stege, Ringsted, Faxe, and Vordingborg are based on 5 respondents or fewer, so if 1 or 2 respondents at a business incubator rate an element very low or very high, it affects the mean of that business incubator much more that it would in a business incubator with more than 10 respondents. This is possibly why there is a big difference between the means of the different business incubators.

If we look at the ratings of influence of the overall program on incubatees' level of commitment at each business incubator, we see a big difference between the Growth Factories in Stege and Ringsted. This is because the 2 respondents from the Growth Factory in Stege rated this element as 5 whereas the 3 incubatees from Ringsted rated this element at a mean of 2.33. On the other hand, if we look at the ratings from business incubators with more than 10 respondents, the difference is not as significant. However, there still remains a difference as the mean of the incubatees in Næstved is 3.36 (11 respondents) and in Lolland-Falster 2.75 (12 respondents).

In relation to the mean ratings of the other business incubation elements in Figure 23, we also detect significant differences among some of the different business incubators. One explanation is that the longer respondents had been at the business incubator, the more contact they could have had with the different business incubation support elements, and thus the more influential they might have rated these elements. However, in the tests that were discussed earlier in this chapter

(10.2.2), there were no significant differences detected between the incubatees' perceptions of influence and the amount of time spent at the Growth Factories, and thus this reason can be considered invalidated.

Another more valid reason could be that the individual Growth Factories were opened at different times and have been operational and consolidated for different durations. For example, the business incubator in Næstved opened in November 2010, whereas the Growth Factories on Lolland-Falster opened 1.5 years later. It is very likely that this difference in the operationalizing of the separate Growth Factories affected the support elements and services of the business incubators, and thus the incubatees.

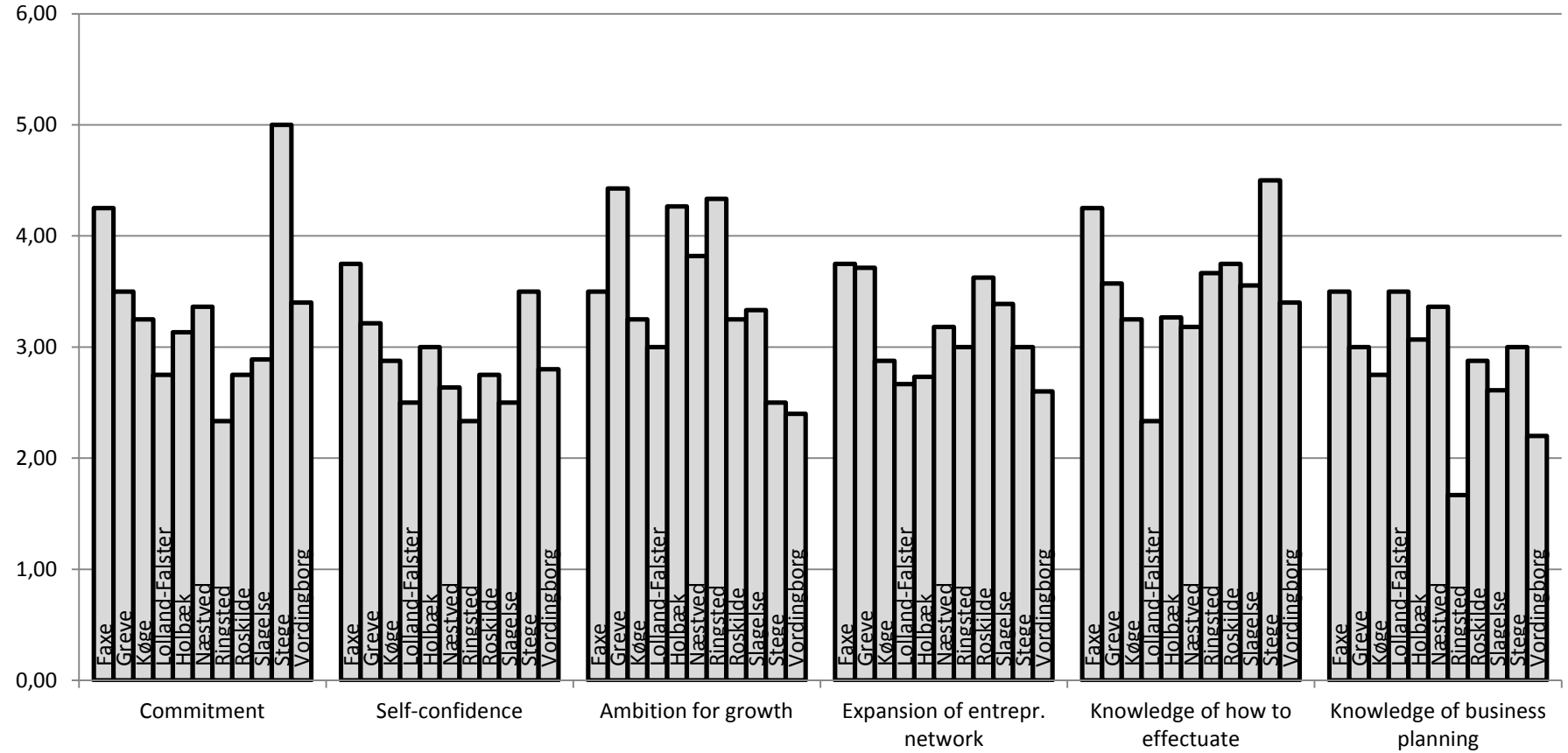

Figure 22. Means of perceived influence of the overall business incubator on the entrepreneurial process by incubator location (Likert scale 1–5).

When we look at individual business incubators in relation to the means of perceived influence of separate business incubation program elements (see Figure 23), we also detect differences among the business incubators. These dissimilarities might be caused by the same reasons as discussed earlier as, for example, the different level of consolidation at each business incubator might influence its entrepreneurial network. Furthermore, the difference in ratings in relation to the "business incubation manager" element can also be explained by the fact that professional and interpersonal skills differ among business incubators managers, who might also allocate different amounts of time to the task of managing the business incubator, which was mentioned in chapter 6 when the Growth Factories were introduced.

As the Growth Factories are situated in 11 locations, there might be a difference in how the office facilities are decorated and styled and perhaps in what office support features are offered at each business incubator. These variances might differently affect the perception of the incubatees from the different business incubators. Both the business incubation support and the educational courses elements rely very much on the interaction between the consultants/instructors and the incubatees. This trainer-incubatee relationship can obviously differ based on the individual coaching process or the individual educational module, so the personal interaction between the consultants/instructors and the incubatees might have affect the level of influence perceived by the individual respondents. This issue has been addressed by McMullan et al. (2001), who argued it is likely that respondents answer based on their feelings, instead of a more objective assessment, when assessing support programs.

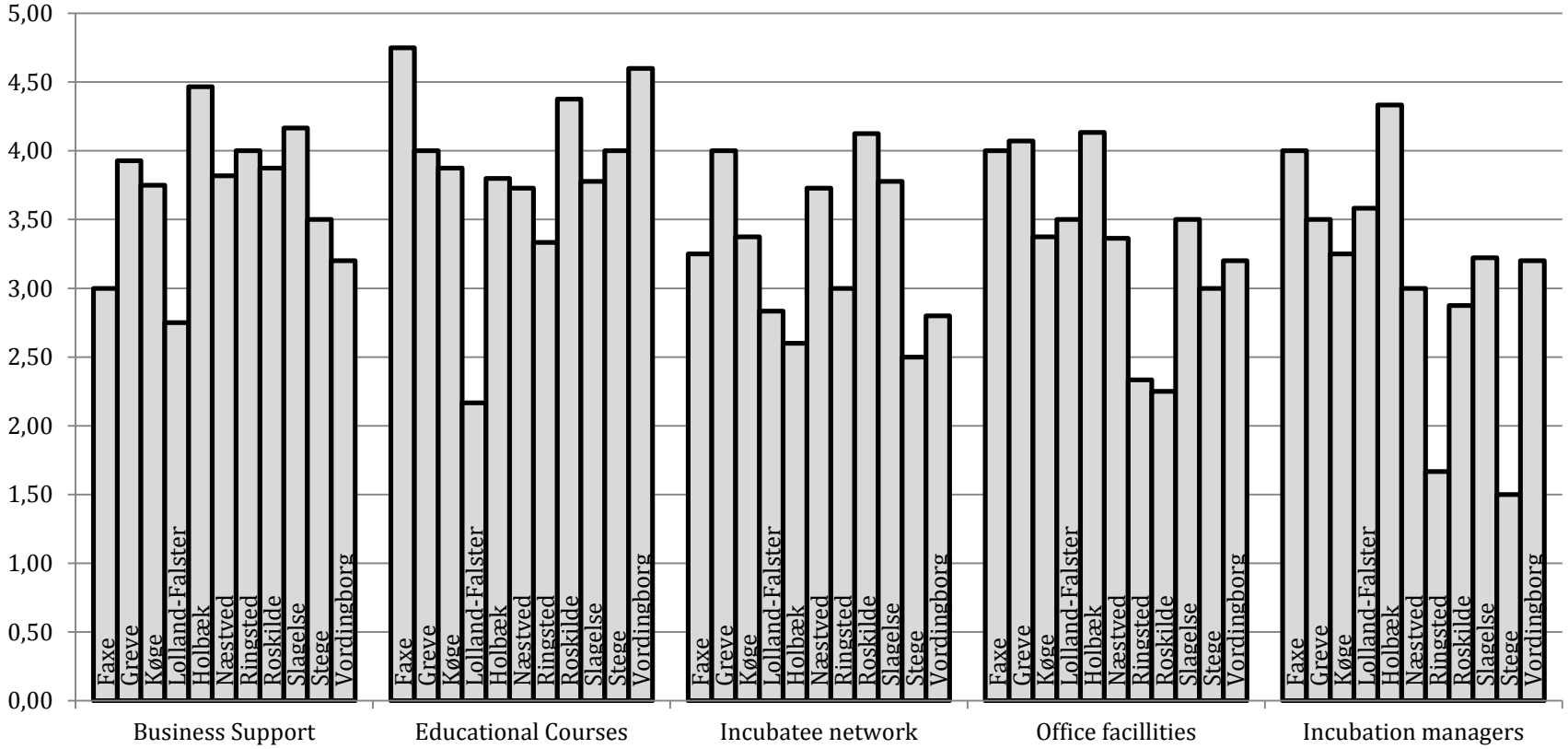

Figure 23. Means of perceived influence of separate business incubation program elements on the entrepreneurial process by incubator location (Likert scale 1–5).

In conclusion, this section has highlighted that there are differences in the respondents' perception of influence between the individual business incubators. It is assumed that these differences are largely caused by the difference in the number of respondents representing each business incubator based on its size and occupancy rate. However, the differences might also be explained by other influences local to each business incubator. There are differences in the amount of time the business incubators have been operational, as the individual Growth Factories were opened in stages. There are also differences in the interpersonal and professional skills of the business incubation staff, which most likely influence the coaching processes and thus the perception of the incubatees differently. Because there are several possible reasons, it is hard to determine the exact cause of these differences among the business incubators, and it is not the purpose of this dissertation to investigate these differences further. Nevertheless, it is still important for the reader to be aware of these differences in order to judge the validity of the results. Still, the fact is that in order to present empirical data that can be used for quantitative and statistical analysis, the respondents' answers have to be aggregated and then discussed as a reflection of the overall program at the Growth Factories, not of the individual business incubators.

11.5 Summary of findings

From the survey it is clear that the incubatees perceived the network with other incubatees as having the most positive influence in relation to their entrepreneurial process and development. Furthermore, the office facilities of the business incubators were also perceived as an element of the business incubation program that has a minor positive influence on the incubatees' entrepreneurial process. These results tell us that business incubators establish a social and cultural learning environment through the agglomeration of peers that can be activated within flexible office facilities. The importance of the network among incubatees is also confirmed via the literature and the case studies, and thus this result can to some degree be expected. Additionally, the office facilities were perceived to be important by the incubatees. As they by definition form the physical space in which the social and cultural entrepreneurial process can develop, as well as where the network with other incubatees is established (even though the incubatees might not be aware of this), it

could be expected that they would be rated highly as without this agglomeration of peers, the network would not develop.

The business support consultants (business consultants and mentors) were perceived as having a more neutral influence on the entrepreneurs' development, with a mean score on the Likert scale just above 3. This result is noteworthy as three of the four case incubatees stated that the business support influenced their entrepreneurial process and development positively. Additionally, the literature suggests that business support is an essential element of the business incubation program. However, this survey finds otherwise.

When the entrepreneurs are grouped based on experience, it appears that novice entrepreneurs perceived greater influences from the different business incubation program elements. The only element that both groups rated similarly is the network with other incubatees. Furthermore, the novice entrepreneurs also perceived the office facilities as more influential than the experienced entrepreneurs did, which was unexpected as both groups valued the importance of the network element, and the two elements are closely interlinked.

The perceived influences of the different elements of the business incubation program were relatively similar for the incubatees with a preference for causal or effectual logic, except for the network with other incubatees. The incubatees with predominantly effectual logic rated the influence of the network with other incubatees significantly higher than the incubatees with predominantly causal logic, which is not unexpected as this is supported by the entrepreneurial theoretical framework, which suggests that effectual entrepreneurs learn and develop via interaction with other entrepreneurs whereas entrepreneurs with causal logic do so via business planning and thorough analysis but still value an entrepreneurial network. In this regard, it should be noted that entrepreneurs with predominantly causal logic might choose this entrepreneurial approach out of necessity; for example, novice entrepreneurs might prefer effectual logic once they learn this approach. Hence, a great advantage of business incubators is that the community of incubatees can contain different types of entrepreneurs and the incubatees and the business incubation staff can support and train, e.g., novice entrepreneurs in effectual logic.

When investigating the elements of the incubatees' entrepreneurial process and development, it is obvious that ESE is the element that was perceived as influenced the most by the different elements of the business incubation program. The entrepreneurial element that was rated as having the highest level of perceived influence from the business incubator was the entrepreneur's level of ambition, followed by self-confidence of the entrepreneur, and finally, level of commitment of the entrepreneur toward his or her entrepreneurial venture. In contrast, the causation element was rated the lowest and the effectuation factors ranged in the middle, which suggests that the incubatees did not believe that their entrepreneurial process and development had been influenced by increased knowledge of business planning and causal logic during their time at the business incubator. From the effectual elements of "knowledge of how to effectuate" and "expansion of entrepreneurial network," we can see that these elements score a bit higher, which could mean that effectual knowledge is perceived to be more emphasized than causal logic during the business incubation program, even though the difference is not that large.

The results of the survey further show that the network with other incubatees is rated the highest, particular on the ESE factors, which suggests that the network with other incubatees is perceived as directly increasing the incubatees' ESE. This is supported by the case study findings and the entrepreneurial literature, which show that the entrepreneurial process and development of the incubatees is a social and cultural learning and development process where the incubatees develop and learn from other incubatees, which also means that they influence each other's ESE. This is also in accordance with the theoretical ideas presented by Rae (2005, 2007, 2012). In contrast, the business incubation managers and the educational courses scored considerably lower, meaning they were perceived as having no influence on the entrepreneurs' development in relation to ESE and effectuation/causation.

The empirical findings and theoretical learnings gained throughout the dissertation have provided us with a much better understanding of the business incubation field and how being part of a business incubator influences the incubatees' perception of their entrepreneurial process and development. These findings are based on prominent theoretical entrepreneurship and business incubation research. Furthermore, we have also learned how the different elements of the business

incubation process influence some incubatees' perception of their entrepreneurial process and development differently than others, e.g., based on their entrepreneurial experience. However, in order to add to the existing literature and develop the business incubation research field further, we must discuss the findings from the dissertation in relation to the existing knowledge base of the business incubation field.

12. Discussion

From the findings of this dissertation and according to the perception of the incubatees from the Growth Factories, it seems that business incubators can provide incubatees with certain advantages. Overall, business incubators can support the entrepreneurial process and development by providing access to a social and cultural learning environment by geographical agglomeration of peers. Furthermore, business incubators appears to contribute to increased ESE in incubatees, especially from agglomeration of and interaction with peers as this seems to increase the incubatees' perception of their level of commitment, self-confidence, and ambition. Moreover, for some entrepreneurs, a successful screening process can also indirectly boost their self-confidence. The learning environment of business incubators in terms of the agglomeration of peers also makes bottom-up learning and activation of the incubatees possible, which is essential for entrepreneurs as the entrepreneurial process is a social and cultural learning process that is best practiced through interaction and engagement with others (Rae, 2007). These findings are discussed in relation to the existing business incubation literature in the following sections.

12.1 Revising business incubators

Previous literature on business incubation (e.g., Gullander 2006; Xu, 2010; Meru & Struwig, 2011; Aslesic & Slavec, 2012) has focused on how incubatees experience the business incubation process from a satisfaction or value point of view. However, none of these studies provide the field with an improved understanding of how being part of a business incubator might influence the incubatees. Furthermore, no prior studies (to this author's awareness) have incorporated an entrepreneurial theoretical perspective to improve the field's understanding of how these incubatees might develop during the business incubation process in relation to their entrepreneurial process and development. This might be because, as indicated in the discussion of the existing business incubation literature, many business incubators and their programs have been created based on an understanding that can be termed as an "predetermined top-down management approach," which has predefined how entrepreneurs best can be supported and thus developed within the settings of business incubators. Consequently, the perspective, perception, and theoretical understanding of the

entrepreneur seem to be deprioritized in business incubation research. For example, Dilts and Hackett (2004) referred to the business incubation program as an intervention system that is provided to the incubatees, and part of this program is to link and control resources of the business incubator and the incubatees with the purpose of ensuring progress for the incubatees. In this relation Zhang and Sonobe (2011) also referred to the business incubation program as a set of services that is offered to the incubatees, and Lewis et al. (2011) stated that the management of business incubators directs the business incubation program and its services, which are also designed by the management. However, it seems that these programs and studies have been designed and studied without really understanding and investigating at a microlevel how entrepreneurs and incubatees' entrepreneurial process and development might be influenced by the stimuli from the business incubators and their support system. This dissertation strives to provide more knowledge on a microlevel about the incubatees and how they perceive themselves as influenced by their participation in business incubators, as there are many different elements and processes that are important to understanding how entrepreneurs learn, develop, and thus can best be influenced. For instance, results from this dissertation show that some incubatees prefer to use effectual logic during their entrepreneurial process and thus learn and develop mainly through the interaction with other incubatees, and not as much via the business support and business incubation managers. On the other hand, other incubatees prefer a causal entrepreneurial learning approach and accordingly favor gaining knowledge via business planning and causal guidance; they therefore prefer to be guided in this matter by the business incubation elements. The literature suggests that entrepreneurs use both effectual and causal logic as different times during the entrepreneurial process (Bergendahl, 2009), and the case study findings from this dissertation support this. Regardless of preferred logic or entrepreneurial experience, the findings of this dissertation support the existing literature suggesting that increased and focused use of the network possibilities both inside and outside of the business incubators can increase the success of incubatees (Pena, 2010) and that incubatees benefit from knowledge and potential partnerships from other incubatees (Ebbers, 2013; McAdam & Marlow, 2007). On the other hand, Hughes et al. (2007) stressed that business incubators only provides opportunities and that it is up to the incubatees to use the network

possibilities strategically to achieve success. From these studies and also from the findings of this dissertation, it seems important to understand that all incubatees and entrepreneurs in general should learn the value of creating and using an entrepreneurial network. This is necessary as entrepreneurs have limited resources available and thus need to use alternative ways to gain the resources they lack, for which they often have to turn to their entrepreneurial network for assistance. Furthermore, through the entrepreneurship literature and in particular Rae's (2007) theoretical understanding, it was also determined that the entrepreneurial process can be considered a social and cultural learning process that is practiced through interaction, which also emphasizes the significance of networking for entrepreneurs. By merging the findings of the importance of entrepreneurial network from the business incubation literature with the entrepreneurial theoretical understanding of network and understanding of the entrepreneurial process, this dissertation introduces the novel understanding that both the entrepreneurial and business incubation process should be considered social and cultural learning processes that are best practiced through interaction and engagement with others and especially peers (entrepreneurs).

The argument that entrepreneurial networking is a central part of the entrepreneurial process and development is also supported by Bøllingtoft and Ulhøi (2005), who argue for a bottom-up business incubator approach as they found that incubatees in a bottom-up business incubator mostly learned and developed via interaction with the network within the business incubator and thereby did not use formal business development sessions, which are considered an essential part of business incubators that are based on a top-down management approach. These findings definitely challenge the traditional business incubation program approach. However, this dissertation does not argue for a radical redefinition of the current business incubation program approach, even though the arguments and findings presented by Bøllingtoft and Ulhøi (2005) are supported and acknowledged by the findings of this dissertation, as it is highlighted that the element of the business incubation element perceived as most influential is that of network with other entrepreneurs, which is rated significantly higher than the other support elements. Nevertheless, this doctoral thesis does argue that the traditional business incubation program approach should be revised, as the empirical findings show that there is a difference in how different types

of entrepreneurs perceive the influence of the business incubator and its different support elements. For example, novice entrepreneurs perceive the influence of the business support element to be significantly higher than do the experienced entrepreneurs, and in general, the novice entrepreneurs perceived themselves to be more influenced by the different business incubation program elements compared to experienced entrepreneurs. There might also be a difference in the incubatees' preferred entrepreneurial logic, as argued earlier in this section. Accordingly, this dissertation argues that incubatees are to be understood as a diverse group of individuals with different needs and challenges. This means that business incubators and their business incubation programs should be able to accommodate this flexibility and furthermore embrace the value of the knowledge that can occur from the bottom up in the business incubator, as, e.g., the interaction between novice and experienced entrepreneurs can create a dynamic learning environment that is beneficial for both parties and their entrepreneurial development. This understanding is aligned with Chan and Lau (2005), who called for a more flexible business incubation program, based on the argument that the start-up phase might differ for different types of start-up companies. Likewise, Gullander (2006) argued that the needs of incubatees might change over time. This dissertation argue that it is also relevant to take into account the entrepreneurs' previous experience when discussing a flexible business incubation process, as the empirical findings show that there are significant differences among the incubatees and how they perceive their entrepreneurial process and development as having been influenced based on their entrepreneurial experience. This is especially the case in terms of increased ESE, as novice entrepreneurs perceived their ESE to be more strongly influenced than did experienced entrepreneurs, even though both groups experienced increased ESE during their entrepreneurial process and development while participating in the business incubation program. The network with other incubatees in particular directly increased the incubatees' ESE, and increased ESE is essential for all entrepreneurs. However, it might be of greater importance for novice entrepreneurs who have not been through an entrepreneurial process before and have therefore not experienced the challenges and distress that comes with entrepreneurial activity and furthermore have a limited entrepreneurial network. In general, all types of entrepreneurs need to have a high level of confidence in themselves and their entrepreneurial endeavors in

order to ensure progress in the environment of uncertainty that characterizes entrepreneurship. Therefore, entrepreneurial self-belief and self-efficacy are crucial fundamental elements in relation to entrepreneurial behavior and performance, as stated by Rae (2007).

From the empirical findings of this dissertation, it was concluded that ESE was the entrepreneurial element that was perceived by the incubatees to be influenced the most during the business incubation program. According to Voisey et al. (2006) and Stephens and Onofrei (2012), subjective measures evolvement of the incubatees' capabilities and skills are defined as soft measures. In Stephens and Onofrei's (2012) study, it was shown that increased confidence of the incubatees and increased network with peers and better business knowledge were considered to be the main benefits of the business incubation process. Increased confidence was identified as being the most important element for the incubatees, whereas increased networking with peers was rated lower. When comparing these findings to those of this dissertation, we firstly see that both Stephens and Onofrei (2012) and Voisey et al. (2006) used the term "increased confidence"; they did not refer to the entrepreneurial theoretical concept of ESE to explain this soft element of measurement. This is a good example of how prior studies of business incubation have not incorporated what we can learn from the entrepreneurship literature into their research and discussion, which can seem surprising as business incubators are designed to assist entrepreneurs, and thus it should be imperative that the business incubation field look to the entrepreneurship field when seeking to understand how entrepreneurs might be influenced and can develop during their entrepreneurial process. By incorporating entrepreneurship theories into the business incubation field, this dissertation shows that it is possible to add to the existing literature with new contributions. For example, Stephens and Onofrei (2012) should replace their measure of increased confidence with ESE and thus unfold a more comprehensive understanding of how incubatees can develop their confidence from participating in business incubation programs. Additionally, the entrepreneurial concepts of causation and effectuation, which represent a newer viewpoint of entrepreneurship research, are also soft measures that could be added to Stephens and Onofrei's (2012) conceptual framework for evaluating business incubation process, instead of just measuring business skills, which originate more from an management research perspective. Adding these

theoretical concepts to Stephens and Onofrei's (2012) framework is, in this author's opinion, relevant, as both effectuation and causation deserve attention in relation to how the business incubation field can understand elements of the cognitive development process that entrepreneurs experience. Thus, findings from the qualitative cases of this dissertation might indicate that some experienced entrepreneurs could benefit in their entrepreneurial development by learning how to focus on fewer activities during their entrepreneurial process and apply causal logic and business planning in order to grow and consolidate their business. In contrast, other incubatees might benefit from adapting the effectual approach into their entrepreneurial process and development as they have not yet learned the value and importance of exploiting entrepreneurial networks and learning from other incubatees. It is important to note that in relation to effectuation and causation, that it is difficult to draw any conclusions from the qualitative findings. Nevertheless, it is still this author's belief that these entrepreneurial concepts deserve more attention in future business incubation research to better the field's understanding of how incubatees learn, develop, and thus can be influenced.

As ESE is mostly increased via interaction with the network of other incubatees, it can be argued that different theoretical concepts of entrepreneurship can influence each other as entrepreneurs develop throughout their entrepreneurial process. This could be the case in the relationship between effectuation and ESE, as the more the incubatees learn about being an entrepreneur from an effectual entrepreneurial process, which emphasizes interaction with other entrepreneurs, the more the incubatees can increase their level of ESE. Furthermore, effectuation is also considered a bottom-up learning-by-doing process where the entrepreneur gains experiences, knowledge, and insight about the entrepreneurial process from interaction with his/her network. This is also what the empirical results of this dissertation indicate, as incubatees learn the most from each other, and increased learning create increased ESE, which, according to the entrepreneurship literature, creates increased entrepreneurial performance. This line of thought argues that incubatees gain knowledge by themselves through the interaction with other incubatees, and this bottom-up self-learning process can lead to an increased level of ESE, as the more the incubatees learn how to navigate the entrepreneurial process from other incubatees, the more confident they become, and the more likely they are

to stay in business with their entrepreneurial endeavor. In contrast, causal entrepreneurial logic is based on an analytical and planning paradigm where interaction with network of entrepreneurs is de-emphasized, which the empirical results of this dissertation also suggest. Thus, the incubatees who prefer this approach mainly learn from the information they can collect and analyze, as decisions should be made by means of thorough analysis. Causal entrepreneurs believe that an outcome of a decision can be forecasted and thus deprioritize gaining knowledge from the interaction with other entrepreneurs. It is important to state that it is not argued that ESE cannot be increased or decreased via a causal learning process. However, it is argued that the entrepreneurial process is best learned via learning by doing and enacting with other entrepreneurs, as the entrepreneur by definition is a person that *acts* in an enterprising way, as stated by Rae (2007). Thus, it can be argued that ESE, and the entrepreneurial process and development in general, can be increased and developed faster by applying an effectual entrepreneurial approach. Furthermore, it is important to stress that the way effectuation and causation are presented above is very partitioned, even though entrepreneurs can use the different entrepreneurial logics alternately during their entrepreneurial process.

When discussing how the incubatees perceived being part of a business incubator as influencing their entrepreneurial process and development, we also need to ask about the purpose of business incubators as the literature has highlighted that different types of business incubators have different goals and purposes (see Aernoudt, 2004; Al-Mubaraki, 2011; Barbero et al., 2012). This question can be answered both from the perspective of policy makers and initiators of business incubators and, of course, from the perspective of the entrepreneurs. Regardless of which side one belongs to, this dissertation argues that we first need to understand how entrepreneurs learn and develop in business incubators before we can determine an objective solution to this question. This understanding has also been emerging in the field as newer contributions (e.g., Gullander, 2006; Xu, 2010; Aslesic & Slavec, 2012) have provided the field with studies investigating the perspective of the incubatees. However, none of these studies have provided an understanding of how incubatees perceive that being part of a business incubator influences their entrepreneurial process and development, but instead investigate the satisfaction and value of the relationship between the incubatees and the business incubator. For example, Gullander's (2006)

study showed that there might be a mismatch between what incubatees claim to be of importance and the business incubation elements and services that they actually uses, thereby measuring importance (value) and use of different services but not how the different elements are perceived to influence the incubatees. Therefore, it is relevant to highlight a few findings from Gullander's (2006) study that can be compared to the findings of this dissertation. Gullander's (2006) study showed that the most important elements of the business incubation process are considered to be the location facilities, image, business support, and network. In Xu's (2010) study, 90% of the incubatees perceived the office facilities to be of significant importance. If we relate these conclusions to this dissertation's findings, we can see that the element perceived as most influential is that of network followed by the office facilities, which was perceived as having a minor positive influence, whereas the element of business support is perceived to have a neutral influence. Thus, when the findings from this dissertation, which is based on perceived influence of the business incubation process, are compared to the results from Gullander (2006), who focuses on what the incubatees consider to be most important in the business incubation process, it is revealed that the network element is highlighted as being the most important business incubation element and also the element that is perceived as most influential in the incubatees' entrepreneurial process and development.

Aslesic and Slaved's (2012) study of satisfaction showed that there is a link between the level of satisfaction and both the proactiveness of the incubatees in exploiting their social network and also their level of commitment and trust in the business incubator. These findings once again suggest the importance of encouraging the incubatees to use the network possibilities in the business incubators as this influences the level of satisfaction of the business incubation process and incubatees' perceive it as being highly influential to their entrepreneurial process and development. Thus, in future studies it could be interesting to investigate the link between satisfaction and influence of the business incubation process.

The fundamental top-down assumption that has predominantly influenced the research field has resulted in much research that has investigated whether business incubators work based on macroanalysis (e.g., Ratinho & Henriques, 2010; Theierstein & Wilhelm, 2001; Philips, 2002; Autio & Klofsten, 1998; Westhead &

Storey, 1992). However, regardless of all these macrolevel assessment studies, no final conclusive studies have determined whether business incubators provide a significant economic return in terms of economic development (Schwartz, 2008). Instead, researchers (e.g., Abduh et al., 2007; Bruneel et al., 2007) have argued that incubatees might perceive the value and concept of business incubators differently from the business incubation initiators and managers. This argument is supported by the findings of this dissertation suggesting that incubatees perceive their entrepreneurial process and development as mostly influenced by the network with other incubatees as compared to other elements of the traditional business incubation programs, e.g., business support and business incubation managers, which business incubations initiators emphasize. Furthermore, from Bøllingtoft and Ulhøi (2005), we learned that entrepreneurs have jointly created their own business incubators from a bottom-up approach that focuses on network and collective interaction among the incubatees, instead of the elements of the traditional business incubation programs. Thus, a call for more research and a better understanding of how business incubators and their business incubation programs should be created in order to develop and support the incubatees in their entrepreneurial process and development in the most beneficial manner possible is needed, as findings from this dissertation suggest that incubatees learn, develop, and perceive the influence of business incubators differently in relation to their entrepreneurial process and development. For example, findings suggest that experienced and novice entrepreneurs need to be guided and supported differently as novice entrepreneurs perceived their entrepreneurial learning process and development as being significantly increased by participating in business incubators, whereas experienced entrepreneurs did not perceive the same level of influence from the business incubator and the business incubation program. These findings could indicate that experienced entrepreneurs need to receive some sort of alternative support or guidance as they obviously have a different point of departure and thus different needs in their entrepreneurial learning process. In order to uncover this area, further research should be conducted. Similarly, future research should also consider that novice entrepreneurs might need to learn fundamentals about the entrepreneurial process from business incubators and how it is a social and cultural learning process that is practiced through interaction and engagement with others. It could be argued that future research would benefit from investigating whether the

incubatees have a preference for effectual or causation logic, as the entrepreneurship literature and the empirical findings of this dissertation suggest that the incubatees who prefer effectual logic value the influence of the network of other incubatees in their entrepreneurial process and development more than the incubatees who prefer causal logic. This could indicate that some entrepreneurs who prefer causal logic especially need to learn the importance of creating and using the network with other incubatees, as it is a central part of any entrepreneurial process and development and thus an essential part of developing as an entrepreneur.

Hence, in conclusion, this first part of the discussion calls for more research based on the understanding that there might be a difference among incubatees and how they perceive their entrepreneurial process and development during the business incubation process, which is also why the traditional understanding of business incubations deserves to be revised, just as the traditional elements of the business incubation program likewise should be revised and discussed, as they are in the upcoming section. Furthermore, this discussion also highlights that it is important to consider the perspective of the incubatees in further research and not rely only on the standpoint of the business incubation management or policy makers.

12.2 Revising business incubation programs

From both the literature and the empirical findings, we have learned that screening processes for business incubators have different formats and also purposes. Furthermore, we have also gained knowledge of how incubatees experience the screening process and the acceptance into a business incubation program, and how this experience can be reflected in their entrepreneurial process and development. From the literature (e.g., Udell, 1990; Theierstein & Wilhelm, 2001; Alsos et al., 2011), we learned that screening practices serve different purposes, and thus different procedures are used to evaluate which entrepreneurs are accepted into different business incubators. According to Udell (1990), screening practices range from unstructured interviews to more detailed processes where the entrepreneurs have to present sales projections and financial statements at the screening interview. Theierstein and Wilhelm (2001) highlighted the use of different selection strategies,

e.g., the pragmatic, the champion, and the business plan–focused approach. Turning to the qualitative empirical findings of the dissertation, we learned that the screening practices of the Growth Factories are closer to an unstructured interview form, even though the incubatees fill out, or are supposed to fill out, a screening manual prior to the screening interview. Furthermore, the qualitative findings indicate a difference in how the incubatees perceive the screening interview, as some expected a more detailed interview format in line with the *business plan–focused approach* as introduced by Theierstein and Wilhelm (2001), as this might indicate that the business incubators are taking the incubatees more seriously. On the other hand, other incubatees were satisfied with the semistructured interview form, which could be similar to *the pragmatic approach*, as termed by Theierstein and Wilhelm (2001), where the incubatees do not have to provide the business incubation staff with detailed business plans. Regardless of which screening interview form is applied, the qualitative findings of the dissertation suggest that the screening process has a potential to be activated as a learning environment that can provide the incubatees with their first push into the business incubation program and furthermore ignite the entrepreneurial learning process and development immediately, as this might quickly increase the entrepreneurs' level of ESE. This argument is based on the qualitative and theoretical findings from the dissertation, which revealed that some of the case incubatees experienced a boost in their entrepreneurial self-confidence (could indicate increased ESE) when they were accepted into the business incubator, as the business incubation managers during the screening process expressed that they believed in them as entrepreneurs and in their growth potential. The difference in the perceived influence of the screening interviews might depend on the individual entrepreneurs' entrepreneurial needs and capabilities, philosophical or logical approach, and finally, previous entrepreneurial experience, as the findings of this dissertation indicate that different incubatees perceive the influence of the business incubators differently. For example, some incubatees might prioritize extensive business planning and thus expect to encounter these types of logics during the screening interview, which also means that the screening encounter could be used a learning process where different entrepreneurial logics can be discussed and the business incubation managers can get an impression of which logic is preferred by the incubatees and thus plan the individual business incubation process based on this knowledge. From this

perspective, there is a potential for research that can uncover how the screening process is an entrepreneurial learning space where the business incubation staff and the incubatees meet for the first time, based on differences in preferred entrepreneurial logic and experience.

From the business incubation literature, we have learned that an important element of the business incubation programs is networking (e.g., Löfsten, 2010; Hansen et al., 2000; Pena, 2010; Demirgil et al., 2011; Cooper et al., 2012). This is also supported via the empirical findings of this dissertation, as the network element was perceived by the incubatees as the most influential element of the business incubation program in their entrepreneurial process and development, just as network is also emphasized in the entrepreneurship literature, i.e. by Rae's (2007) clarification of how the entrepreneurial process is a social and cultural learning process that is practiced through interaction and engagement with others and especially peers. Both Ebbers (2013) and Soetanto and Jack (2013) have argued that incubatees use each other to access knowledge, information, social capital (intangible resources), and potential partnerships. The empirical findings are also supported by the case study findings, which highlight how the incubatees approach other incubatees for sparring, advice, and knowledge about entrepreneurial challenges. These findings are not new, as this has already been established in the field. However, what could be considered a novel contribution to the field are the findings from this dissertation that suggest that the entrepreneurial network and interaction among the incubatees is perceived by them to influence their entrepreneurial process and development in form of increased ESE. This finding indicates that as incubatees interact and learn from each other, an entrepreneurial development process occurs that can influence the incubatees' belief in themselves as entrepreneurs, which can lead to increased ESE over time. This argumentation can be supported by McAdam and Marlow's (2007), who stated that the network with other entrepreneurs is important for the incubatees as it provides them with peers with whom which they can share the entrepreneurial struggle. Moreover, Mubaraki and Busler (2013) claimed that business incubators provide psychological support to incubatees, which can increase their entrepreneurial determination.

The role of business incubation managers has also been covered much in the business incubation literature. For example, Fang et al. (2010) stressed that business incubation managers should support and guide the incubatees based on the assumption that the incubatees' capability of obtaining knowledge is critical for their successful development. Patton et al. (2009) highlighted that this is especially important in the early stage of the business incubation process. Accordingly, Fang et al. (2010) stressed that the success of a business incubator depends on its manager's ability to motivate the incubatees into participating in the support and network activities offered, and Ahmad and Ingle (2011) stressed that without the incubatees' active involvement, the coproduction process will not exist. Hannon (2003) stated that the performance of the business incubator is linked to the leadership capabilities of its managers, and Adegbite (2001) stated that the business incubator manager's role is to monitor the incubatees closely in relation to their business plans and development. However, it is not specified what type of knowledge the incubatees should obtain, and furthermore, how to best support, guide, and develop the incubatees through their entrepreneurial process and development remains unknown. Hughes et al. (2007) stressed the importance of coproduction of value among the incubatees and the business incubation managers, as the business incubator provides opportunities of value creation, and its success depends on how the incubatees learn to create networks. However, when we turn to the quantitative findings from this dissertation, it seems that the incubatees perceived the influence of networking mostly as being among the incubatees and not between the business incubation managers and the incubatees. This is also reflected in Honig and Karlsson's (2010) study, which showed that only 6% of the investigated incubatees identified the business incubation manager as being useful in linking them up with influential contacts. However, from the case studies, it appears that the business incubation managers were perceived to influence the incubatees during their entrepreneurial process and development in terms of networking and general business advice. However, as argued earlier in the dissertation, there exists an important, indirect relationship between the incubatees and the business incubation managers in terms of network, as the business incubation managers are also responsible for creating and maintaining the frames in which the social and cultural learning process of the incubatees and the network with other incubatees exists. Thus, the coproduction of value among the incubatees and the

business incubation staff might occur regardless of how this is perceived by the incubatees.

In the quantitative findings of this dissertation, we found no evidence that the educational courses from the Growth Factories' business incubation program had any perceived influence on the incubatees. Nevertheless, in the case study findings, the incubatees' seemed to believe that the courses should be more focused on creating a network among the incubatees. However, as there is not much business incubation research regarding this specific element of the business incubation process, it is hard to discuss and thus add new knowledge to this area. On the other hand, the lack of focus on the educational element in the literature could suggest for a need for more research in this area.

A significant element of business incubation programs that has been discussed in the literature is that of business support. However, research on this element seems underrepresented in the business incubation field, and according to Ratinho et al. (2013), there seems to be a gap between the business support services that the incubators offer and the needs of the incubatees, which can cause the incubatees to seek support outside of the business incubator. This tendency can also be reflected in Xu's (2010) study, which showed that many of the business support services offered were not used by the incubatees and were furthermore not considered to have a significant impact on the incubatees' development. The quantitative findings of this dissertation were similar; there were no indications that the business support element was perceived to have influenced the incubatees and their entrepreneurial process and development. However, in the qualitative case interviews, the business support consultants and mentors were perceived as having a positive influence on three of the four case incubatees by providing the cases with structure, a goal-setting mind-set, and knowledge of how to use entrepreneurial networks. Furthermore, in the qualitative cases, we also found indications that incubatees might have applied or believed in different entrepreneurial methods based on the theoretical concepts of effectuation and causation during their entrepreneurial process and development, and that the business incubation support consultants and mentors might have also emphasized the importance of effectual and causal knowledge differently. For example, Heidi's mentor emphasized the importance of business planning and goal

setting, whereas Ziya's business consultant taught him the importance of and how to create and use his entrepreneurial network during his entrepreneurial process. From this we can learn that no business support process is the same for all incubatees, who are diverse and are at different learning and development stages in their entrepreneurial process. Similar argumentation has been used by Soetanto and Jack (2013), who argued that incubatees are often considered to be a homogeneous group and offered the same support elements, but that business incubators should consider that incubatees might differ in both level of innovation and company stage. Regardless of the qualitative arguments presented, the quantitative findings from this dissertation showed that the business support element was not perceived as having influenced the incubatees and their entrepreneurial process and development. In this regard, earlier research (e.g., Rice, 2002) has suggested that the business support consultants, as quasi-partners, should assist and guide the entrepreneurs in order to create more value to the incubatees. This understanding is also touched upon in the case study findings, as incubatees emphasized that it was very beneficial for their development when the business consultant provided them with introductions to potential partnerships and customers, indirectly highlighting a need among the incubatees for the quasi-partners approach. Henceforth, the role of the business support element needs to be investigated and researched further for a better understanding of why the business support element is not perceived by the incubatees as a significant contribution.

The results and literature discussed in this chapter show that the business incubation field can gain much from researching business incubators and especially incubatees from the perspective of the incubatees, which emerging literature has also argued (e.g., Aslesic & Slavec, 2012; Meru & Struwig, 2011; Xu, 2010; Gullander, 2006). However, there is a difference between researching the perspective of incubatees in relation to satisfaction or perceived value, and perceived influence on the entrepreneurial process, which this dissertation strives to uncover. Furthermore, this discussion also suggests that business incubation field can extend its knowledge base by incorporating existing entrepreneurial concepts and theoretical considerations into future research projects about business incubators, a combination that has been surprisingly underdeveloped. By applying both of these approaches, it has been possible to add to the existing body of business incubation literature by improving our

understanding of how incubatees perceive the influence of business incubators in their entrepreneurial process and development.

12.3 Methodological reflections

Even though the methodological challenges and considerations were introduced in chapter 7, this section reflects upon what this might mean for the applied methods and the results discussed in the dissertation so the reader can judge the scope and robustness of the dissertation.

One of the main methodological challenges to consider is that the qualitative and quantitative studies were based on self-reported perceptions, or subjective measures, as defined by McMullan et al. (2001). Thus, the researcher and reader have to be aware that even though the respondents were asked to estimate the influence of the business incubation program and the different support elements on their entrepreneurial process and development, they might have answered based on their feelings about the support they had received. Such a response would measure satisfaction rather than influence, despite the fact that this dissertation investigates perceived influence and not satisfaction. To accommodate this challenge, cross-checking of, e.g., performance-based measures of the incubatees' development could be introduced; however, this was not possible or considered relevant for this dissertation.

Another methodological challenge in terms of subjective measures of perception is related to time (McMullan et al., 2001) as the incubatees were in contact with the different business incubation elements and were interviewed and filled out the survey at different times. During the time in between, something might happened to the incubatees (which we cannot know) that could have changed their perception of the business incubation program, and knowledge and insight also might have been lost by the respondents over time, indirectly affecting the results. These self-reporting issues are difficult to control, and it is hard to determine whether they have affected the results.

A methodological challenge related to the research design regards how the survey questions were interpreted by the respondents and the fact that respondents could not answer "don't know." As for the latter issue, the purpose of the overall study and thus also the survey was to find to what degree respondents perceived themselves as being influenced by business incubation elements, so the elements were rated on a 5-point Likert scale with a midpoint labeled "moderate degree." Elements rated above 3 were considered to have had an influence, as perceived by the respondents, whereas elements rated at the midpoint or below were considered not to have had a perceived influence. It is this researcher's belief that the respondents answered to a "lesser degree" or "low degree" when they wanted to answer "don't know," as this would also mean that the investigated elements had not had a perceived influence on their entrepreneurial process and development. In order to ensure the validity and reliability of the quantitative findings, the survey questions were revised, tested, and discussed thoroughly prior to distribution. For example, the survey was sent to two senior researchers and two project managers from the business incubators for review twice, and discussed afterward, a process was inspired by Meru and Struwig (2011). Consequently, it was ensured that both the theoretical concepts of the survey design and the practical understanding were verified and measured what they were supposed to. Afterward the survey was tested on five respondents, who all received a telephone call before and after completing the survey. In the first telephone call, the respondents were asked to note any questions or issues that were not understandable or answerable. The follow-up telephone call was conducted in order to collect their comments and feedback.

Finally it is important to be aware that this dissertation is based on a critical realistic point of view (philosophy of science). This also means that abduction and empirical experimental are applied, which, according to Van De Ven (2007), make generalization of results difficult, as reality is to be considered as an open system consisting of underlying dependent constructions and is experienced differently based on one's position and given context. Accordingly, a field of research and reality can be experienced differently, which makes generalization difficult.

13. Conclusion

From a review of the existing literature of business incubators, it was found that there was a need to provide new insight to the field by investigating how incubatees perceive the influence of business incubators. It was furthermore discovered that drawing on entrepreneurship theory in relation to expanding our understanding of how incubatees might perceive the development of their entrepreneurial process and develop would be a novel contribution to the field. Based on these observations, the following research question was formulated:

What elements in the business incubation process are perceived as most influential by incubatees, and how do incubatees perceive being part of a business incubator as influencing their entrepreneurial process and development?"

In terms of influential elements in the business incubation process, it is notable that the incubatees stated that network with other incubatees was the most influential element of the business incubation program. Furthermore, they also perceived the office facilities as a significant element; this element is closely interlinked with the network element, as without office facilities there would be no network. Furthermore, the qualitative findings revealed that both the business incubation managers and the business support element were perceived as influencing the incubatees' entrepreneurial process and development considerably; however, quantitatively, these elements were perceived as having a neutral level of influence on the incubatees' entrepreneurial process and development.

In relation to how being part of a business incubator influenced the incubatees' perception of their entrepreneurial process and development, the findings of the case studies clearly indicated that the incubatees perceived an increased level of entrepreneurial commitment, confidence, and level of ambition during their participation in the business incubation program. These findings indicated that the theoretical concept of entrepreneurial self-efficacy (ESE) was perceived as increased via the business incubation program. Furthermore, it was also found that different types of incubatees, e.g., novice and experienced entrepreneurs, might perceive the influence of the business incubation program differently. Thus, it was imperative that these theoretical elements be investigated further and tested on a quantitative scale

on a large group of incubatees from the Growth Factories. Additionally, the case study findings also indicated that the case incubatees might have applied or believed in different entrepreneurial logics based on the theoretical concepts of effectuation and causation, and that the business support element of the business incubation program likely emphasized and guided the incubatees differently in relation to the idea of effectuation and causation. When the survey was introduced, it was discovered that the incubatees clearly perceived their level of ESE to have been increased via the business incubators and, furthermore, that they perceived their ESE to have be influenced mostly by the network element of the business incubation program, meaning their interaction with other incubatees. It was shown that grouped by experience, novice entrepreneurs perceived themselves to have been more strongly influenced by the different business incubation program elements than the experienced entrepreneurs. Furthermore, the novice entrepreneurs also perceived the office facilities to have influenced their entrepreneurial process more than the experienced entrepreneurs, which was unexpected as both groups perceived the network element, which is interlinked with office facilities, as influential. However, it can also be argued that novice entrepreneurs might have a greater need for becoming part of and identifying with a physical agglomeration of peers, as they have not experienced the entrepreneurial process before, which would then result in higher rating of the office facilities. From the survey, it also seemed that, grouped by entrepreneurial logic, the incubatees with effectual logic perceived a greater influence of the network of other incubatees than the incubatees with causal logic did, which could be expected based on the entrepreneurial theoretical framework, which argues that effectual entrepreneurs learn and develop via interaction with other entrepreneurs. This might also indicate that incubatees who applied effectual logic might have increased their ESE more, as they per definition prioritize interaction with and learning from their entrepreneurial network, which this dissertation has determined to be the main influence on the incubatees' ESE.

Based on the abovementioned findings, it can be argued that business incubators influence incubatees' perception of their entrepreneurial process and development by providing access to a social and cultural learning environment by geographical agglomeration of peers. Furthermore, business incubators influence incubatees' entrepreneurial process and development by increasing their level of ESE via the

agglomeration of and interaction with peers, as this increases the incubatees' level of commitment, self-confidence, and ambition. Additionally, a successful screening process can also boost incubatees' self-confidence, and last but not least, the learning environment of the business incubator in terms of the agglomeration of peers also makes bottom-up learning and activation of the incubatees possible, which is essential for entrepreneurs as the entrepreneurial process is a social and cultural learning process that is best practiced through interaction and engagement with peers.

The variance in how incubatees perceived the influence of business incubators and the elements of the business incubation program suggests a need for more research and a better understanding of how significant differences among entrepreneurs and incubatees can be utilized better. Furthermore, this dissertation highlights that the business incubation field can expand its existing knowledge base by drawing on entrepreneurship theories, which will provide the field with a better understanding of how incubatees learn and develop and thus can be better influenced and supported while at business incubators.

14. Managerial implications

Besides its research contributions to the business incubation field, this dissertation also has several outcomes of importance to practitioners and initiators of business incubators.

From a practical point of view, the purpose of business incubation programs should be to create the right circumstances and elements for incubatees to develop and gain new knowledge, increasing their ESE and thus improving their chances to reach their goals. However, this can only be achieved if they are motivated to undergo a learning and development process, and therefore the success of a business incubation program depends on both the business incubation managers' capabilities of motivating the incubatees to participate in the business incubation program and the incubatees' active participation and willingness to undergo an entrepreneurial learning and development process, as without this motivation the incubatees might as well join an office hotel instead of a business incubator. This underlines the importance of the screening process as the level of motivation of potential incubatees should be prioritized and discussed during the screening interview. Moreover, one could argue that some entrepreneurs (perhaps mostly novice entrepreneurs) might perceive the screening interview as a medium where they can test out the validity of their entrepreneurial business plans and gain initial confidence (ESE) if they are accepted into the business incubation program. In this regard, it would also be relevant to discuss the entrepreneurs' entrepreneurial logic during the screening in order for them to understand the difference between causal and effectual logic and how these elements can influence their entrepreneurial process and development. The learning outcome from the screening process could then be transferred onto the business support consultants, who could then implement the learning outcome and thus target the business support element of the business incubation program in relation to the individual needs and capabilities of the incubatees. However, this would require the business incubation staff to understand and acknowledge the value of the effectual and causal mind-sets, as well as other entrepreneurial theoretical concepts. In this relation, the screening process could be used to detect the differences among the incubatees, and thus guide the incubatees in whatever direction the business incubation managers believe would benefit the incubatees the most. For example, causal entrepreneurs should learn the importance of creating and learning from an

entrepreneurial network, whereas overly effectual entrepreneurs might benefit from applying causal logic during their entrepreneurial process and development. The elements of effectuation and causation could rather easily be tested prior to the screening interview by asking potential incubatees to fill out a short questionnaire that would determine the incubatees' preferred entrepreneurial logic, just as the survey for this dissertation has done.

One of the main contributions of this dissertation to practitioners and managers of business incubators is the argument for a flexible, differentiated business incubation model and program based on differentiated learning, as different types of incubatees are influenced differently through different business incubation elements based on their individual entrepreneurial point of departure. Therefore, the business incubation programs should target diverse types of entrepreneurs from a differentiated business incubator perspective. For example, the role of the business incubation managers should be to consider the type of incubatee (e.g., novice, experienced, effectual, or causal) and subsequently design a learning and development route that balances the individual incubatees' entrepreneurial process and development while ensuring that they receive the knowledge they need, which also means learning to apply effectuation and causation logic when needed. Furthermore, in relation to future designs of incubation programs, the format of different business incubation elements should be changed into a more workshop-oriented format where the incubatees would work more closely together, as this would stimulate a collaborative bottom-up learning environment for the incubatees.

15. English summary

This dissertation studies entrepreneurs who are inside business incubators and thus participate in a business incubation program. More specifically, the dissertation discusses which elements in the business incubation process are perceived as most influential by the incubatees and how incubatees perceive being part of a business incubator as influencing their entrepreneurial process and development.

A review of the existing literature on business incubators finds that the field of business incubation lacks studies that focus on the perspective of the entrepreneurs and especially research that investigates the interaction between business incubators and the incubatees, and few (if any) business incubation studies incorporate knowledge of the entrepreneur from a theoretical entrepreneurship perspective. In order to address the research focus, the business incubation initiative "the Growth Factories" was followed, which made it possible to investigate the perspective of the incubatees and their entrepreneurial process and development. The Growth Factories is a business incubation initiative that consists of 11 business incubators that are scattered across the region of Zealand.

The dissertation draws on both qualitative and quantitative research methods. Qualitatively, four incubatees (two novice and two experienced entrepreneurs) were followed over a 6-month period from February 2012 to August 2012, during which time eight semistructured interviews as well as document studies were conducted in order to investigate how the case incubatees had developed over time. The findings of the case studies were compared and positioned against a theoretical framework of entrepreneurship theory, which indicated that the incubatees perceived that their entrepreneurial self-efficacy (ESE) was influenced by participating in the business incubation program. Furthermore, the case studies also showed that the case incubatees applied or believed in different entrepreneurial methods based on the entrepreneurial theoretical concepts of effectuation and causation. Accordingly, the theoretical elements of ESE and effectuation/causation were included in a quantitative survey that was distributed to all the incubatees at the Growth Factories program in December 2012.

The survey findings imply that the network with other incubatees especially was perceived to be the most influential element of the business incubation program on

the incubatees' entrepreneurial process and development. Furthermore, the survey shows that novice entrepreneurs perceived a higher influence from the different business incubation program elements than more experienced entrepreneurs. When investigating the entrepreneurial elements of the incubatees' entrepreneurial process and development, it was obvious that ESE is the element of the entrepreneurial process that was perceived to be influenced the most. From the survey it was also noteworthy that the incubatees perceived that networking with other incubatees was the most influential element of the business incubation program, especially in relation to their ESE, which means that the network with other incubatees was perceived to directly influence the incubatees' ESE.

From the findings of the dissertation, it can be argued that the incubatees perceived the business incubators as influential in their entrepreneurial process and development by providing access to a social and cultural learning environment by geographical agglomeration of peers. Furthermore, business incubators influence incubatees' entrepreneurial process and development by increasing their level of ESE via the agglomeration of and interaction with peers, as this increases the incubatees' level of commitment, self-confidence, and ambition. Last but not least, the learning environment of the business incubator in terms of the agglomeration of peers also makes bottom-up learning and activation of the incubatees possible, which is essential for entrepreneurs as the entrepreneurial process is a social and cultural learning process that is best practiced through interaction and engagement with peers.

The variance in how incubatees perceived the influence of business incubators and the elements of the business incubation program suggests a need for more research and an increased understanding of how these significant differences among entrepreneurs and incubatees can be utilized better. Furthermore, this dissertation also highlights that the business incubation field can expand its existing knowledge base by drawing on entrepreneurship theories to provide the field with a better understanding of how incubatees learn and develop and thus can be better influenced and supported while at business incubators.

16. Dansk Resumé

Denne afhandling omhandler iværksættere i inkubationsmiljøer. Mere specifikt hvordan de forskellige elementer af et inkubationsprogram påvirker de medvirkende iværksætters opfattelse af deres egen udviklingsforløb.

En gennemgang af den eksisterende litteratur vedrørende inkubationsmiljøer viser, at området mangler forskning, der fokuser på iværksætternes perspektiv. Herunder især også forskning, der undersøger interaktionen mellem inkubationsmiljøer og iværksættere. Derudover mangler inkubationsfeltet også forskning, der inkorporerer den teoretiske viden fra entreprenørskabsfeltet. For at forfølge denne forskningsvinkel er inkubatoren Vækstfabrikkerne blevet fulgt tæt over en et års periode. Med disse observationer som empiriske grundlag er det blevet muligt at undersøge Vækstfabrikkernes inkubationsprogram set fra de medvirkende iværksætteres perspektiv. Vækstfabrikkerne er et vækstfremmende inkubationsprogram, der består af 11 inkubationsmiljøer fordelt over hele Sjælland.

Indeværende afhandling trækker på kvalitative såvel som kvantitative forskningsmetoder. Den kvalitative del består af fire iværksættere (to nybegyndere og to erfarne), som er blevet fulgt over en periode på seks måneder. I denne periode blev der foretaget otte semi-strukturerede interviews. Ligeledes blev der genneført dokumentstudier i perioden februar - august 2012 for at se, hvordan de pågældende iværksættere havde udviklet sig over tid. Resultaterne fra de enkelte cases blev sammenlignet og analyseret indenfor en teoretisk ramme udgjort af entreprenørskabsteori. Her var indikationerne, at iværksætternes opfattelse af deres egen Entrepreneurial-Self-Effecacy (ESE) blev positivt påvirket af inkubationsmiljøet. Studierne viste yderligere, at case-iværksætterne anvendte eller troede på forskellige iværksættermetoder baseret på de teoretiske koncepter effectuation og causation. Følgelig blev disse parametre samt de teoretiske elementer fra ESE inkluderet i en kvantitativ undersøgelse, som blev udleveret til samtlige iværksættere på Vækstfabrikkerne i december 2012.

Undersøgelsens konklusioner indikerer, at særligt netværket med øvrige iværksættere blev opfattet som det, der havde den største indflydelse på iværksætterenes udviklingsforløb. Yderligere viser undersøgelsen, at nybegyndende iværksættere påvirkes af de forskellige elementer i inkubationsmiljøet i højere grad end mere

erfarne iværksættere. Desuden værdsætter iværksættere med præference for effectuation logik netværket med andre iværksættere højere end de, der foretrækker causation logikken. Ved at undersøge de dynamiske elementer i iværksætternes udviklingsforløb blev det klart, at ESE er det element af processen, der er blevet påvirket mest. Fra survey resultaterne er det bemærkelsesværdigt, at iværksætterne betragter netværk med øvrige iværksættere som det mest indflydelsesrige element i hele inkubationsforløbet. Og i særdeleshed i forhold til deres ESE, hvilket betyder at netværket med øvrige iværksættere har en direkte effekt på iværksætteres ESE.

Med denne afhandling bliver det klart, at inkubationsmiljøer har indflydelse på iværksætternes opfattelse af deres eget udviklingsforløb, da de eksempelvis giver adgang til et socialt og kulturelt læringsmiljø med jævnbyrdige iværksættere. Yderligere har inkubationsmiljøer indflydelse på iværksætterne ved at øge deres ESE-niveau via 'sammenhobningen' af og interaktionen med jævnbyrdige, da det øger iværksætternes engagement, selvtillid og ambitioner. Sidst men ikke mindst skaber inkubationsmiljiøet et kollektivt læringsmiljø, hvor læring nedefra og op bliver muligt, hvilket er centralt for iværksættere, da et iværksætterforløb er en social og kulturel læreproces, der udøves bedst via interaktion og engagement med ligesindede.

Forskellen på hvordan iværksættere opfatter påvirkningen af inkubationsmiljøer og de forskellige elementer i et inkubationsprogram, viser at der er et behov for at forske mere i hvordan forskellige iværksættere oplever deres udviklingsforløb. Ydermere viser denne afhandling, at inkubationsfeltet kan udvide dens vidensgrundlag ved at trække på den teoretiske viden fra entreprenørskabsfeltet. Dette vil være med til at give feltet en bedre forståelse af, hvordan iværksættere lærer og udvikler sig, når de indgår i et inkubationsmilijø, hvilket kan være med til at understøtte deres udvikling på sigt.

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18. Appendix

Appendix 1

Appendix B: Distribution of research perspectives applied to incubator-incubation studies

Research perspective	Frequency	Citations
Economic development	18	(Allen, 1988; Allen and McCluskey, 1990; Allen and Rahman, 1985; Allen and Weinberg, 1988; Brooks, 1986; Campbell, 1989; Campbell and Allen, 1987; Campbell *et al*., 1985; Hisrich, 1988; Markley and McNamara, 1995; Merrifield, 1987; Plosila and Allen, 1985; Sherman, 1999; Sherman and Chappell, 1998; Smilor, 1987b; Swierczek, 1992; Temali and Campbell, 1984; Udell, 1990)
Critical success factors	5	(Hansen *et al*., 2000; Lichtenstein, 1992; Lumpkin and Ireland, 1988; Scherer and McDonald, 1988; Smilor, 1987b; Stuart and Abetti, 1987)
New venture creation/development	3	(Udell, 1990) Hisrich, 1988 #726](Scherer and McDonald, 1988)
New technology based firms (NTBFs)	3	(Mian, 1994a; Mian, 1994b; Mian, 1996)
Public policy	2	(Allen and Weinberg, 1988; Plosila and Allen, 1985)
Planning studies	2	(Fry, 1987; Lumpkin and Ireland, 1988)
Entrepreneurship	2	(Bruton, 1998; Hisrich, 1988)
New product development	2	(Scherer and McDonald, 1988; Udell, 1990)
Organizational effectiveness	2	(Mian, 1996; Mian, 1997)
Small business studies	1	(Fry, 1987)
Life cycle models	1	(Allen, 1988)
Value-added	1	(Campbell, 1989)
Network theory	1	(Lichtenstein, 1992)
Technology development	1	(Mian, 1994a; Swierczek, 1992)
Economic rationality	1	(Markley and McNamara, 1995)
Innovation theory	1	(Culp, 1996)
Technology transfer	1	(Culp, 1996)
Middleman theory	1	(Greene and Butler, 1996)
Enclave theory	1	(Greene and Butler, 1996)
Institutional perspective	1	(Greene and Butler, 1996)
Business incubation support	1	(Mian, 1997)
University technology commercialization	1	(Mian, 1997)
SME support	1	(Autio and Kloftsen, 1998)
Performance benchmarking	1	(Bearse, 1998)
Impact assessment	1	(Roper, 1999)
Cost effectiveness	1	(Roper, 1999)

Note: Many studies employed multiple frameworks. $N = 38$.

Appendix 2

Table 1 An example of a typology of evidence (example refers to social interventions in children) (adapted from Muir Gray[24])

Research question	Qualitative research	Survey	Case-control studies	Cohort studies	RCTs	Quasi-experimental studies	Non experimental evaluations	Systematic reviews
Effectiveness Does this work? Does doing this work better than doing that?				+	++	+		+++
Process of service delivery How does it work?	++	+					+	+++
Salience Does it matter?	++	++						+++
Safety Will it do more good than harm?	+		+	+	++	+	+	+++
Acceptability Will children/parents be willing to or want to take up the service offered?	++	+			+	+	+	+++
Cost effectiveness Is it worth buying this service?					++			+++
Appropriateness Is this the right service for these children?	++	++						++
Satisfaction with the service Are users, providers, and other stakeholders satisfied with the service?	++	++	+	+				+

Appendix 3

Table 4.1
Differences in Assumptions Among Four Evaluation Methods

	Types of Evaluation			
	Case Study	*Ethnography*	*Grounded Theory*	*Quasi-Experiment*
Design:				
1. Assumes a single objective reality that can be investigated by following the traditional rules of scientific inquiry	Yes	No	Yes	Yes
2. Can be used for theory-building	Yes	Yes	Yes	Yes
3. Also favors theory-testing	Yes	No	No	Yes
4. Considers context as essential part of phenomenon of being evaluated	Yes	Yes	Yes	No
Data Collection and Analysis:				
5. Favored data collection technique	Multiple	Participant observation	Multiple	Multiple
6. Type of data to be analyzed	Quantitative or qualitative	Mostly qualitative	Qualitative only	Mostly quantitative

Appendix 4

Frederiksberg, 21 July 2014

AUDITOR REPORT:

PhD Dissertation - Business incubators and Incubatees

Anders Ørding Olsen
Copenhagen Business School
Department of Innovation & Organizational Economics

The audit procedure

Via email I was asked to perform quality control of the dependability and confirmability of the interviews and four case studies that Søren Berg Jørgensen had conducted and completed for his PhD dissertation about incubatees and their use of business incubators. As I had no prior experience of performing an audit report for qualitative research, I was sent references to Lincoln & Guba (1985) and Akkerman et al. (2006), so I could gain a better understanding of the task, process and expectations of my role as an auditor. Following this I accepted to carry out the audit process, however with the contingency that I would not be able to relate the empirical findings to the research field of business incubators. As this is not within my area of research or my theoretical field, my contribution in the section below is restricted to an assessment of the dependability and confirmability between methodology, interviews and case studies, and in particular the main points drawn from the interviews, used in the case study descriptions and subsequently employed as the main points of the analysis.

I received the relevant documents via email and was granted access to a Dropbox folder, which contained audio files of the eight interviews in question. My work subsequently consisted of carefully reading through the method section, description of the empirical setting, the specific case studies and the summary findings and analysis. For the case studies I meticulously annotated all mention of statements, perceptions, opinions or similar in relation to the interviewees. I subsequently listened through each interview while confirming that all annotations were sufficiently justified in the empirical data. This approach also provided the opportunity to make notes of any omissions of relevant statements in the case descriptions made by the interviewees. The outcome of the above work and the resulting assessment of the dependability and reliability of the interviews and case studies is presented below.

Frederiksberg, 21 July 2014

Overall assessment of quality

With respect to the dependability and confirmability of the case studies findings as well as logically and scientifically acceptable procedure (acceptability) which can be expected for a PhD scholar, it is my assessment, that the case studies have overall been written in accordance to the collected empirical date (the interviews) in an acceptable scientific manner. It is furthermore my assessment that the main points drawn into the analysis are well founded in the empirical data and raise not cause for concern. The author has been true to the statements, view, descriptions etc. made by the interviewees.

My only notes concern aspects which might also be interesting in the analysis of entrepreneurs and their work. However, considering that these aspects are not related to the focus of the thesis, i.e. are not related to participation in an incubator, but rather to other aspects of entrepreneurship research, this does not influence my assessment of the confirmability and dependability.

In conclusions it is my perception and evaluation that the trustworthiness of the case studies is high and that the points drawn from the empirical data is well justified and raise no cause for concern. My only comments relate to additional research questions that the author might consider pursuing in future academic work using the same data.

Conflicts of Interest

I have no conflict of interests with respect to the completion of Søren Berg Jørgensen's PhD and have not had or have any collaboration with Søren, which relates to this or other research. I have met Søren during the course of his and my PhD and it is based on this acquaintanceship that I have accepted to perform the audit.

I remain available for any questions regarding the dependability and confirmability of the work, as well as my efforts in assessing this.

Anders Ørding Olsen
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Appendix 5

Survey, December 2012

Dear Xxxxx,

In connection with my PhD, I am currently implementing a questionnaire survey about you incubatees.

I hope that you will be able to allocate some time for participating in the survey, as this will provide me with valuable information for my research and especially my PhD dissertation. The questionnaire will take approx. 5–10 minutes and your individual answers will be handled anonymously.

The survey can be started by pressing this internet link: https://survey.enalyzer.com/xxxxxxxxxxx

You can also follow this internet address https://survey.enalyzer.com/ and enter:
Project ID: xxxxxx
Password: xxxxxx

If you have any questions regarding the questionnaire, you are welcome to send me a mail.

Thank you in advance.

Søren Berg
Industrial PhD Fellow.

Dear Incubatee,

Thank you for being of assistance in relation to filling out this questionnaire. Press the arrows to start.

What Growth Factory are you situated at?

(State only one answer)

☐ Greve

☐ Roskilde

☐ Holbæk

☐ Slagelse

☐ Ringsted

☐ Køge

☐ Faxe

☐ Næstved

☐ Stege

☐ Vordingborg

☐ Lolland-Falster

How long have you been situated at the Growth Factory?

(State only one answer)

☐ Under 6 months

☐ 6 months to 1 year

☐ 1 to 2 years

☐ Over 2 years

When was your business founded?

(State only one answer)

- ☐ 2012
- ☐ 2011
- ☐ 2010
- ☐ 2009
- ☐ 2008
- ☐ 2007
- ☐ 2006
- ☐ 2005
- ☐ 2004
- ☐ 2003
- ☐ 2002
- ☐ 2001
- ☐ 2000
- ☐ Before 2000

What is your highest level of education?

(State only one answer)

☐ Basic school

☐ High school

☐ Vocational school

☐ Short higher education

☐ Higher education

What line of business are you operating in?

(State only one answer)

☐ Liberal services

☐ Information technology

☐ Industrial product development and manufacturing

☐ Experience economy/creative industries

☐ Wholesale or retail trade

☐ Other

Before your time at the Growth Factories, had you started another business?

(State only one answer)

☐ Yes

☐ No

To what degree do you believe that the elements below are of importance for your entrepreneurial process and development?

(State only one answer per element)

	low degree	lesser degree	moderate degree	higher degree	highest degree
Creating partnerships and strategic alliances	☐	☐	☐	☐	☐
Business planning	☐	☐	☐	☐	☐
Conducting market and competitor analysis	☐	☐	☐	☐	☐
Learning by doing	☐	☐	☐	☐	☐

To what degree do you believe that the elements below have been valuable for your entrepreneurial process and development in the Growth Factories?

(State only one answer per element)

	low degree	lesser degree	moderate degree	higher degree	highest degree
Business support consultants	☐	☐	☐	☐	☐
Educational courses	☐	☐	☐	☐	☐
Network with other incubatees	☐	☐	☐	☐	☐
Office facilities	☐	☐	☐	☐	☐
Business incubation managers	☐	☐	☐	☐	☐

To what degree has the overall stay at the Growth Factories influenced you as an entrepreneur in relation to:

(State only one answer per element)

	low degree	lesser degree	moderate degree	higher degree	highest degree
Commitment / engagement in your company	☐	☐	☐	☐	☐
Belief in yourself as an entrepreneur	☐	☐	☐	☐	☐
Ambition level for your company	☐	☐	☐	☐	☐
Expansion of your entrepreneurial network	☐	☐	☐	☐	☐
Knowledge of how to effectuate	☐	☐	☐	☐	☐

Knowledge of business planning	☐	☐	☐	☐	☐

To what degree has your business consultant/mentor had a positive influence on you as an entrepreneur in relation to:

(State only one answer per element)

	low degree	lesser degree	moderate degree	higher degree	highest degree
Commitment / engagement in your company	☐	☐	☐	☐	☐
Belief in yourself as an entrepreneur	☐	☐	☐	☐	☐
Ambition level for your company	☐	☐	☐	☐	☐
Expansion of your entrepreneurial network	☐	☐	☐	☐	☐

Knowledge of how to effectuate	☐	☐	☐	☐	☐
Knowledge of business planning	☐	☐	☐	☐	☐

To what degree have the business incubation managers had a positive influence on you as an entrepreneur in relation to:

(State only one answer per element)

	low degree	lesser degree	moderate degree	higher degree	highest degree
Commitment / engagement in your company	☐	☐	☐	☐	☐
Belief in yourself as an entrepreneur	☐	☐	☐	☐	☐
Ambition level for your company	☐	☐	☐	☐	☐
Expansion of your	☐	☐	☐	☐	☐

entrepreneurial network					
Knowledge of how to effectuate	☐	☐	☐	☐	☐
Knowledge of business planning	☐	☐	☐	☐	☐

To what degree have the educational courses had a positive influence on you as an entrepreneur in relation to:

(State only one answer per element)

	low degree	lesser degree	moderate degree	higher degree	highest degree
Commitment / engagement in your company	☐	☐	☐	☐	☐
Belief in yourself as an entrepreneur	☐	☐	☐	☐	☐
Ambition level for your company	☐	☐	☐	☐	☐
Expansion of your entrepreneurial network	☐	☐	☐	☐	☐
Knowledge of how to effectuate	☐	☐	☐	☐	☐
Knowledge of business	☐	☐	☐	☐	☐

planning

To what degree has the network with other incubatees had a positive influence on you as an entrepreneur in relation to:

(State only one answer per element)

	low degree	lesser degree	moderate degree	higher degree	highest degree
Commitment / engagement in your company	☐	☐	☐	☐	☐
Belief in yourself as an entrepreneur	☐	☐	☐	☐	☐
Ambition level for your company	☐	☐	☐	☐	☐
Expansion of your entrepreneurial network	☐	☐	☐	☐	☐
Knowledge of how to	☐	☐	☐	☐	☐

effectuate

Knowledge of business planning	☐	☐	☐	☐	☐

Thank you for your time and participation.