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Høgskulen
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MASTER THESIS

Klyngedynamikk og konkurransefortrinn
for oppstartsbedrifter

Cluster dynamics and start-ups'
competitive advantages

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Vi bekrefter at arbeidet er selvstendig utarbeidet, og at referanser/kildehenvisninger til alle

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Abstract

Proximity, network, and flow of resources are key terms to describe why clusters and entrepreneurial ecosystems provide a strong competitive advantage for the establishment and growth of start-ups. In a cluster or an entrepreneurial ecosystem, there are several players who play together to achieve economic growth. For the best possible interaction and result, the actors are dependent on a well-functioning dynamic in order to achieve the advantages such a network provides. Through a social network, resources such as knowledge and capital, can flow between start-ups, investors, institutions, and others involved in the cluster or the entrepreneurial ecosystem.

In this study, the purpose has been to see how the dynamics of a cluster or entrepreneurial ecosystem affect start-ups' competitive advantage. The study was conducted as a case study in Media City Bergen by interviewing start-up companies, investors, and the administration in the cluster. Based on existing theory about clusters and entrepreneurial ecosystems, the findings were linked to the theories in order to substantiate the problem.

Keywords: Start-ups, clusters, entrepreneurial ecosystems, case study, competitive advantage

Sammendrag

Nærhet, nettverk og ressursflyt er nøkkelbegreper for å beskrive hvorfor klynger og entreprenørielle økosystem gir et sterkt konkurransefortrinn for entreprenørenes etablering og vekst. I en klynge eller et entreprenørielt økosystem er det flere aktører som spiller sammen for å oppnå økonomisk vekst. For et best mulig samspill og resultat er aktørene avhengig av en velfungerende dynamikk for å oppnå fordelene et slikt nettverk gir. Gjennom et sosialt nettverk kan ressurser som kunnskap og kapital flyte mellom oppstartsbedrifter, investorer, institusjoner og andre involverte i klyngen eller det entreprenørielle økosystemet.

I denne studien har formålet vært å se hvordan dynamikkene i en klynge eller entreprenørielt økosystem påvirker oppstartsbedrifters konkurransefortrinn. Studien ble gjennomført som en casestudie i Media City Bergen gjennom å intervjuer oppstartsbedrifter, investorer og administrasjonen i klyngen. Med utgangspunkt i eksisterende teori om klynger og entreprenørielle økosystemer ble funnene drøftet opp mot denne teorien for å underbygge problemstillingen.

Nøkkelord: Oppstartsbedrifter, klynger, entreprenørielle økosystemer, casestudie, konkurransefortrinn

Preface

This thesis marks the end of two amazing years at the Western University of Applied Sciences campus Sogndal. Now, new jobs await us after a well-deserved summer vacation. Although our two years in Sogndal has been great, we cannot wait to get back to Bergen where we feel like we belong. Which may be the reason for why we chose to study a case closer to home as well. It was the opportunity to get the best of both worlds.

The past semester has undoubtedly been tough, but we have learned a lot of valuable lessons. Looking back at all the work we have put down; we realize that this would not have been possible without others to support us. Especially, our respondents at Media City Bergen. Without them there would not have been a thesis to write. They have all been lovely and supportive, and they welcomed us into their busy lives in an exciting cluster. Therefore, we want to express how grateful we are for their contribution – thank you all.

We would also like to thank Tore Frimanslund for all the guidance and inspiration we have received throughout the semester. The work you do for all your students is truly remarkable. We feel lucky to have been able to learn from you, and we are forever grateful for having you as a supervisor for this project.

Lastly, we also want to thank Torbjørn Årethun, Dr. Parmita Saha and Ove Oklevik for their lessons in the courses that led us to this thesis. The courses they held in the fall prepared us for writing this thesis in the best way possible, and we have probably done a much better job at it because of them. They do an amazing job for all their students with a unique way of teaching and by always being helpful and available.

We hope you will enjoy reading our final work as students.

Sogndal 22nd of May 2023

Maren Øverli and Mats Robin Vabø

1 Introduction

1.1 Background and motivation

Monica Mæland once said that "Bergen is the cluster city" (Bergen Chamber of Commerce and Industry, 2023). The former Minister of Trade and Industry and leader of the city council in Bergen has worked for business development through various political positions. The Bergen Chamber of Commerce and Industry took the opportunity and has been a major contributor to most of the clusters in Bergen that are highly ranked with NCE (Centres of Expertise) or GCE (Global Centres of Expertise) status. Marit Warncke, CEO of the Bergen Chamber of Commerce and Industry, elaborates: "We have more clusters with national and global status than anywhere else in the country" (Bergen Chamber of Commerce and Industry, 2023). These industries are characterized by close cooperation between business, academia, and the public sector.

Clusters are a concept that has been developed through politicians' desire to strengthen economic competitiveness in an area (Martin & Rypestøl, 2017). This is done by promoting networking between innovative actors such as companies, universities, and public support organisations. Here, knowledge is acquired and exchanged locally, nationally, and internationally through various networks. This interaction between different actors in the network is a big part of entrepreneurship and further development.

An important question is why innovation is concentrated in certain areas (Martin & Rypestøl, 2017). One of the main arguments is that knowledge is shared through geographical proximity, i.e., that there is a short distance between the actors for sharing knowledge. By staying close to each other, the actors more easily get access to resources such as knowledge, but also expand their network based on this proximity. By having face-to-face interactions, it is easier to form new networks that lead to innovation-oriented cooperation. In addition to knowledge, labour is also an important part of the network's purpose (Herstad et al., 2015). Innovation activity is strongly influenced by stability in the labour force. The most competent people are often drawn to the companies that perform best or have a strong reputation. The companies therefore must compete with other companies for the best workers.

In addition to the internal competition, being part of the cluster also provides a competitive advantage (Spigel, 2017). How these competitive advantages are realized, forms the basis for why the interaction is so important for everyone involved in a cluster. Clusters' cooperation, interactions, competition, and further development will be the subject of research.

1.2 Research problem

Based on the topic of how the various actors interact with each other, this will be seen in the light of the advantages and challenges the start-up companies get from being part of a cluster or entrepreneurial ecosystem. Competitive advantage in particular will be emphasized and linked to existing theory about clusters and the entrepreneur ecosystem. In this research we therefore want to explore:

How can the dynamics in a cluster or entrepreneurial ecosystem affect a start-up's competitive advantage?

1.3 Applied theories in the thesis

Clusters and entrepreneurial ecosystems have many features in common (Spigel & Harrison, 2018). Therefore, the purpose of the research will largely apply to both clusters and entrepreneurial ecosystems. Since the case study itself is based on a cluster, the findings will be linked to cluster theory and to entrepreneurial ecosystems where it is appropriate.

1.4 Commonly used terms in the thesis

In order to gain a better understanding of the research, some commonly used terms will be explained. This provides a common thread through the various points about clusters, the entrepreneurial ecosystem and how the various actors interact.

1.4.1 Start-ups

Start-ups could be defined as “young companies founded to develop a unique product or service, bring it to market and make it irresistible and irreplaceable for customers” (Baldrige, 2022, 'Understanding Startups'). Through innovation, a start-up wants to cover a need for an existing product or create new categories of products or services.

1.4.2 Investors

An investor is individuals or enterprises that “seek to make, are making, or have made an investment” (OECD, 1996, p. 2). The investment is “every kind of asset owned or controlled, directly or indirectly, by an investor” (OECD, 1996, p. 2). Examples of investments could be

enterprises, shares, debt, or intellectual property rights. There are different investor types such as angel investors, venture capital funds, banks, and close relations (Morrissette, 2007). Angel investors, also called business angels, are often wealthy individuals and sometimes entrepreneurs themselves, which are willing to invest in the early stages of a ventures' development. This kind of investors are considered as the most important capital source for start-ups. Venture capital funds is a mutual fund managed by investment managers. The venture capital funds will usually start investing when a firm is several years old. Banks could also be an option for the entrepreneurs but usually it implies personal borrowing such as home equity loans and substantial credit card debt. Close relations such as friends or family could also support the entrepreneurs.

1.4.3 Networks

Networks are an important component in entrepreneurial ecosystems (Neumeyer et al., 2018). The networks in this context could be formal or informal networks. The formal networks could be actors such as universities, capital sources, or regional government agencies. Informal networks could be used to access knowledge about business conditions, employment practices, or production methods (Giuliani, 2007). Social networks could therefore be useful for entrepreneurs to access different resources, knowledge, human capital needed to start and develop their companies (Mason & Brown, 2014). For an entrepreneur a social network could include relations such as business associates, former employees, or close relations.

1.5 Structure of the thesis

This thesis is divided into six parts: (1) introduction, (2) theory, (3) methodology, (4) findings, (5) discussion, and (6) conclusion. All the parts will include a short introduction in the beginning of the chapter. The chapter introductions will present the upcoming topic to prepare the reader and to justify the contents. Hopefully, this will provide a deeper understanding of the thesis. Each chapter is divided into subchapters to create clean lines between different thoughts within a chapter. This will be presented further in each chapter introduction.

The next part of this thesis will be the theory, which also could be described as a literature review. Here we present topics from previous literature that is relevant for our research problem. Following the theory is a chapter about methodology, where we describe how we have gone about to collect data. The data we have collected are described in our findings. This is where

we lay out the relevant information that we have gathered. The findings are divided into different categories that are created to better answer the research problem. To put it all together, there is a discussion chapter where we draw lines from our findings to the theory presented in chapter two. This is done to see whether our findings are consistent with what previous researchers have discovered or not. Lastly, there will be a conclusion to sum up everything from the thesis, and to answer our research problem. There will also be a few thoughts on further research on this topic.

2 Theory

To understand the connection between entrepreneurs, start-ups, and investors, one must explore the environment and surroundings to see why they occur in particular areas (Spigel & Harrison, 2018). The start-ups are often depending on an interplay with other actors such as investors, institutions, or other start-ups (Spigel, 2017). When these actors gather in an area, an environment and community is formed where it is possible to share knowledge, experiences, and resources (Neumeayer et al., 2018). For these environments and communities to develop there are certain elements that explain why some entrepreneurial ecosystems succeed and some do not (Hoang & Antoncic, 2003). This interaction between the actors and the elements will be explored further in the research.

Firstly, in this chapter we will present cluster theory because there needs to be a basic understanding about what a cluster is and how it functions. Secondly, ecosystems will be described and explained. Furthermore, the principles of a vibrant start-up community are presented to explain different conditions for how a start-up can thrive. Lastly for the theory, we will present some competitive advantages. These are divided into different categories which are the same as the categories for our findings. This is done in order to show how each of these factors can contribute to a competitive advantage according to theory, and also to present other relevant facts about them.

2.1 Cluster theory

Clusters can be defined as industries related by knowledge, skills, inputs, demand or other relations, who are geographically concentrated (Delgado et al., 2016). Today, clusters are becoming increasingly more recognized as an important feature of modern economy (Văcărel et al., 2009). There are three different pillars within the definition of clusters: (1) geography, (2) value creation and (3) business environment (C. H. M. Ketels & Memedovic, 2008). The first pillar, geography, refers to how clusters are driven by proximity. It is also about the fact that clusters often are concentrated in a specific area within a larger nation. Secondly, value creation refers to “the fact that clusters include companies in different industries that are related to each other in the production of goods and services valued by customers” (Văcărel et al., 2009, p. 36). Lastly, the third pillar about business environment relates to the effects that comes from a cluster. More specifically, the conditions which are a result from individual actions in

addition to cooperation of companies, government agencies, universities, and other institutions with economic performance in clusters.

2.1.1 Clusters and competitiveness

An interesting fact about clusters, is that the companies there are collaborating and competing at the same time (Văcărel et al., 2009). Using clusters to increase competitiveness seems to become a basic element for many countries when they plan their development strategies (Mazur et al., 2016). According to Porter (2011), clusters have a positive influence on innovation and competitiveness, as well as skill development and information. Clusters can also have a positive impact on growth and long-term business dynamics (Porter, 2011). Figure 1 below illustrates the twelve pillars of competitiveness (Schwab & Porter, 2008), which show the different positive impacts as aspects for competitiveness. These aspects are quantified and measured by Business Competitiveness Index (BCI) and Global Competitiveness Index (GCI), where GCI is based on the twelve pillars (Văcărel et al., 2009).

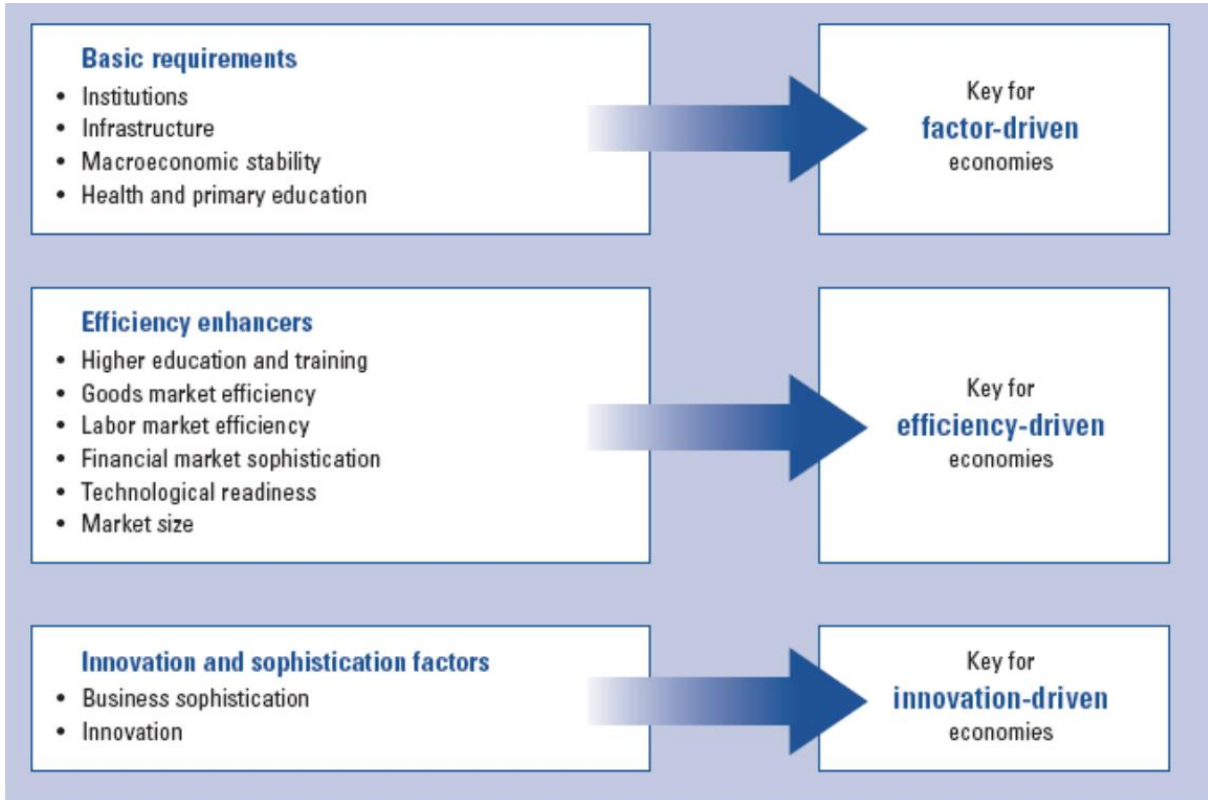


Figure 1 The 12 pillars of competitiveness (Schwab & Porter, 2008)

According to Global Competitiveness Index, the economic growth is factor-driven in the first stage of development (Văcărel et al., 2009). In this stage they are competing based on their

factor endowments. Furthermore, in the second stage they begin to develop more efficient production processes, as well as better product quality. That makes the second stage efficiency-driven. Lastly, in the third stage they can sustain higher wages and a higher standard of living if they are able to compete with new and improved products. Therefore, the third stage is innovation-driven.

Different clusters can differ from each other in many dimensions (Văcărel et al., 2009). Therefore, it can be said that there are different types of clusters appropriate for all the stages of development that were mentioned above. Christian Ketels (2003) had a great example of this which Văcărel et al. (2009) described as follows:

In the industry of footwear, Northern Italy is home to a very successful, high wage cluster, serving the world market and focusing on design, brand building and high value production. Portugal is home to another cluster, focused on footwear manufacturing and short production runs serving fashion – conscious markets in Europe. Timisoara, Romania is another cluster, functioning as an offspring of the Italian cluster focused on production in the low to medium value product range. And there are major clusters in Asia, focused on high – volume contract manufacturing of low value footwear products.
(Văcărel et al., 2009, p. 38)

In this example, there are different clusters who are differentiated by their specialization in a particular stage of the value chain in their field, by specific geographic areas, or by the targeted customers or market segments (Văcărel et al., 2009). Therefore, clusters can be classified according to which stage of development they have reached.

According to Ketels (2003), the advantages that can come from clusters are divided into three dimensions: (1) Companies can work with a higher level of efficiency and are able to access more specialized assets and suppliers, while getting shorter reaction times, than they could in isolation. (2) They can achieve higher levels of innovation because of knowledge spillovers and the opportunity to get close interactions with customers and other companies, which can lead to new and better ideas. The pressure to innovate and the fact that the cluster environment lowers the costs of experimenting also helps with this. (3) The level of business formation is usually higher in clusters. Start-ups are more reliant on external suppliers and partners, and a cluster is the perfect place to find those. Clusters also reduce the cost of failure, due to the fact that entrepreneurs are able to fall back on other opportunities in the many other companies who are in the same field (Văcărel et al., 2009).

The "diamond" below has been described as the greatest contribution to the cluster theory that was created by Michael Porter in 1990 (Văcărel et al., 2009). This is a very useful tool for analyzing the business environment and its complexity, and in many ways, it illustrates and sums up a lot of the advantages with clusters.

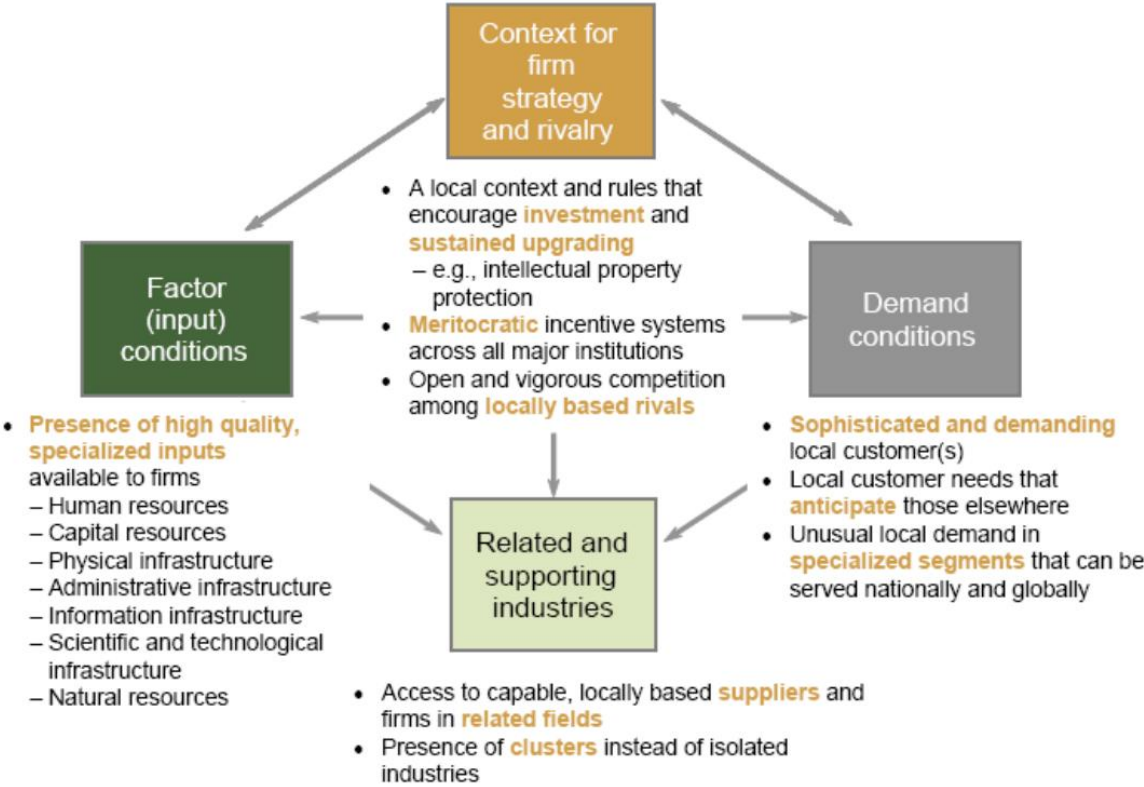


Figure 2 The role of clusters in the "diamond" of competitiveness (Porter, 2008)

Figure 2 above identifies the three main linkages between clusters and competitiveness (Porter, 2008). As mentioned, this model was first introduced in 1990, but Porter (2008) has added some new findings and implications later on. According to this, the main linkages between clusters and competitiveness are: (1) clusters can increase productivity or efficiency, as well as (2) stimulating and enabling innovation, and (3) facilitating commercialization and new business formation. As a result, it can be said that clusters reflect the fundamental linkages and spill-overs that exist across the firms and institutions within the cluster (Văcărel et al., 2009).

2.1.2 Industrial clusters

Being surrounded by competing and cooperating businesses could lead to increased productivity and competitiveness (Spigel & Harrison, 2018). Spigel and Harrison lists two ways which new ventures could improve the competitive advantage within a cluster. The first benefit

is presence of other companies in the same sector or supply chain. By gathering these companies, the area attracts skilled workers to the cluster. Especially start-ups or smaller companies gets the benefit of accessing specialized workforce that could have been previous unavailable. The second benefit includes the knowledge and abilities the cluster possess. Educational institution such as universities could contribute with knowledge about technology or non-public market information while entrepreneurs could contribute to explore new opportunities.

The three principles that connects cluster theory to entrepreneurial ecosystems is presence of other companies, knowledge outside the organisation, and the importance of knowledge processing and creation (Spigel & Harrison, 2018). The presence of other companies could lead to a competitive advantage for new ventures due to the opportunities to find market intelligence, get initial customers, or taking the company into an existing supply chain. By focusing on knowledge processing and creation outside of the company the competitiveness. Lastly, by acknowledging the importance of knowledge processing and creation to the companies in the same cluster or supply chain.

2.2 Ecosystems

An ecosystem is strongly affected by the governments in advanced countries (Baron, 2016). The governments encourage entrepreneurship to initiate innovation, financial growth, and job creation. These dynamic ecosystems offer better opportunities for start-ups to develop and grow. In the ecosystem the entrepreneurship evolves during the interaction between individuals and their environment. Mason and Brown (2014) define an entrepreneurial ecosystem as:

A set of interconnected entrepreneurial actors (both potential and existing), entrepreneurial organisations (e.g. firms, venture capitalists, business angels, banks), institutions (universities, public sector agencies, financial bodies) and entrepreneurial processes (e.g. the business birth rate, numbers of high growth firms, levels of 'blockbuster entrepreneurship', number of serial entrepreneurs, degree of sellout mentality within firms and levels of entrepreneurial ambition) which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment. (Mason & Brown, 2014, p. 5)

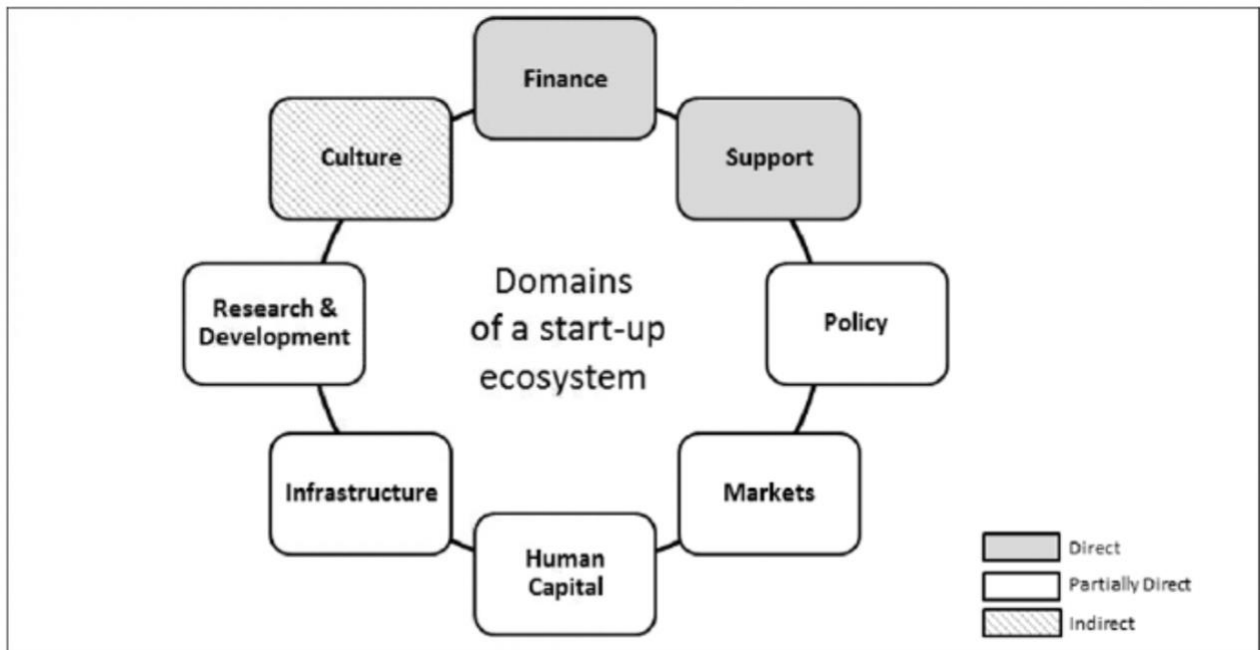


Figure 3 Domains of start-up ecosystem (Baron, 2016)

In 2013 The Aspen Network of Development Entrepreneurs (ANDE) gathered different models which contained formulas to develop a start-up ecosystem (Baron, 2016). These models were synthesized into one framework (figure 3) to measure the degree of influence the domains had on the development of start-up ecosystems. To see the relevance of each domain they are divided into three groups with a different kind of impact.

Finance and support are considered to have a direct impact on the evolution of a start-up ecosystem (Baron, 2016). Contributors such as banks, foundations and business angels will contribute to the ecosystem financially (Aspen Network of Development Entrepreneurs, 2013). Support could come from incubators, accelerators, experts, or different kinds of service. However, it is the interaction between experienced entrepreneurs, founders, stakeholder who provide the main support for the ecosystem (Baron, 2016). It also occurs that the most successful entrepreneurs, who also could take the role as a mentor, are helping other start-ups by providing financial resources and advice. More specifically they could act like inspiration, investors, new founders, or new members of the workforce (World Economic Forum, 2013). The entrepreneurs could also contribute to create supportive networks which benefits the ecosystem by facilitate learning and innovation (Baron, 2016).

The partially direct impact on development of a start-up ecosystem contains the domains of research and development, infrastructure, human capital, markets, and policy (Aspen Network of Development Entrepreneurs, 2013). As a result of research and development, the

entrepreneurs are able to develop products and new business ideas and access new knowledge (Baron, 2016). This access could provide entrepreneurs with knowledge for how to realize an idea or start a business. R&D could be obtained through both public and private research centers and laboratories (Aspen Network of Development Entrepreneurs, 2013). There are different types of infrastructure in the ecosystem. On one side there are the infrastructure related to transport such as airports and highways, as well as electricity and utility providers (Aspen Network of Development Entrepreneurs, 2013). On the other hand, there are also technical infrastructure such as telecommunication infrastructures (Baron, 2016). The technical infrastructure could be a strong internet connectivity which enables companies to connect and compete internationally. Human capital could be provided by educational institutes or technical training institutes (Aspen Network of Development Entrepreneurs, 2013). Human capital includes both entrepreneurs and workforce with benefits such as getting access to talents, the possibility of outsourcing, and entrepreneurial company experience (Stam, 2015). In the ecosystem the entrepreneurs are the most valuable resource (Baron, 2016). The entrepreneurs are the pieces that manage their companies but also identify and realize ideas. They have motivations such as achieving success, improve their economic situation, or improve their status. In an attractive entrepreneurial ecosystem, the workforce would be easier to recruit into the community. To attract newly educated people the entrepreneurial ecosystem gains benefit from having educational institutions close to or in the ecosystem. In the domain of market, the companies need feedback and revenue. Providers of market could be domestic and international corporations, consumers, and different networks (Aspen Network of Development Entrepreneurs, 2013). By reaching the market quickly the start-up enables to grow based on the pace of customers adapting their ideas and products (Baron, 2016).

In order to create a start-up ecosystem, it is necessary for governments to provide the private sector with a framework in order to develop (Baron, 2016). The policy domain includes both local and national governments (Aspen Network of Development Entrepreneurs, 2013). The policy domain therefore could provide the right conditions such as tax incentives or business-friendly policy (Baron, 2016). The governments are also in charge for education, infrastructure, and research and development.

Culture is the only domain in the ecosystem that has an indirect impact (Baron, 2016). There are different approaches in different ecosystems to how culture is proceeded. Culture could be determined by media, government schools, professional associations, and social organisations (Aspen Network of Development Entrepreneurs, 2013). Still, it seems that entrepreneurship has

its best conditions in environments where failure is accepted in order to learn and overcome problems (Baron, 2016). To create an attractive culture and environment the government often speaks warm about the success in the ecosystems. This could create role models, but it also attracts entrepreneurs and workforce. This leads to attract investors and other important parties in the cluster.

2.2.1 Entrepreneurial ecosystems

The idea of entrepreneurial ecosystems is that “there are factors outside an organization but within a region that contribute to firm-level competitive advantage” (Spigel & Harrison, 2018, p. 154). The entrepreneurial ecosystems could arise when the energies, activities, and innovation from the networked society occurs in small geographic regions (Feld, 2020). These ecosystems could appear almost everywhere. Previously, famous ecosystems occurred in regions such as Silicon Valley, New York, and Boston. Still, these areas are historically important for the economic circle based on growth and development.

Some of the characteristics in entrepreneurial ecosystem includes businesses, diverse economy, business infrastructure, investment capital, a supporting entrepreneurial culture, and policies which supports venture establishments (Spigel, 2017). According to Spigel and Harrison (2018) the features of a successful ecosystem would enable entrepreneurs to identify untapped market niches. For the start-ups to become globally competitive firms the entrepreneurs should be able to use the local resources, support, and financing from the ecosystem. Spigel and Harrison’s (2018) studies suggest focusing on high-growth entrepreneurship would serve the start-ups better rather than increasing the overall start-up rate. The theory is based on “picking winners” instead of providing support for start-ups that is second-guessing how the market accepts their ideas.

There are three important elements in an entrepreneurial ecosystem (Spigel, 2017). These elements are categorized into cultural, social, or material factors. The cultural elements are about attitudes towards entrepreneurship. The positive attitudes will encourage starting new companies by accepting the risk of start-ups (Spigel & Harrison, 2018). In the opposite way the negative attitudes will create barriers like the risks of leaving a safe workplace towards more insecure start-ups. The social elements are gained from social networks (Spigel, 2017). There are four social attributes: capital, skilled workers, dealmakers that have a high level of social capital and connections, and an experienced mentor to guide the company in the right direction.

The last element is about the material tools such as institutions and organisations. In Bergen there are several physical entities such as The University of Bergen as an educational institution. These kinds of institutions and organisations benefit start-ups with aid such as financing, training activities, or legal rights (Spigel & Harrison, 2018).

2.3 Principles of a vibrant start-up community

Feld (2020) elaborates three frameworks that can explain why some cities or regions have become vibrant start-up communities. Some places are increasing their innovation, while others are stalling. There could be major consequences if the regions fail to maintain this start-up environment. It's important that entrepreneurship is maintained and continues to grow. Property prices are often higher in these areas. Therefore, it also becomes important to get something back for being part of such an environment. If this environment fails, the existence of cities and regions could potentially be at stake.

Another important factor from the framework research is the geographic location (Feld, 2020). Despite today's flow of information, location is more important than ever. Innovation is often drawn to particular areas. That can be explained by how creative and clever people seem to be drawn towards densely clustered areas. The three frameworks are the disciplines of economics, sociology, and geography.

2.3.1 Economics

There are several financial benefits to being part of a start-up environment (Feld, 2020). The first point will be about location. The external economics of scale benefit a start-up. New companies need inputs to, for example, infrastructure, legal and accounting services, and suppliers. Now companies can share these costs so that expenses are lower for each company. In addition, skilled workers are found or attracted to these environments but can also be hired externally. At the start of forming an entrepreneurial ecosystem, recruitment of labour in particular is a major process (Mason & Brown, 2014). The big companies enter as talent magnets, where they recruit a large number of skilled workers from other regions. Many of these workers are recent graduates. Furthermore, they receive job training before moving on to various roles in the ecosystem. Some of these workers have an innovative approach which means that at some point they start their own company and thus contribute to the development of the ecosystem.

Another important point is network effects (Feld, 2020). This provides an advantage in the form of a larger network providing greater value for the company. An example here is social media such as Facebook or Twitter. By having more members, one gets more value for each member, and it attracts more people. If the network contains few members, it will be less appealing to use. This also applies in such start-up environments. By having access to skilled labour around the environment, it becomes more attractive to be there. By not staying in central clusters, the companies can reduce some costs, but the value in collaboration is high.

2.3.2 Sociology

For the sociology framework transparency will be an important factor (Feld, 2020). In a culture of information sharing across companies and industries, history has shown that start-up environments achieve better at development. One comparison between Silicon Valley and Boston's Route 128 illustrated that they looked similar at some point in the mid 80s. Still, Silicon Valley developed faster than Boston's Route 128 and gained a big advantage. One of the main reasons to the differences in development were due to the different sharing culture. With an inclusive philosophy and 'give-before-you-get'-attitude the culture opens up and allows sharing of knowledge, expertise, and experience (Mason & Brown, 2014). The open ecosystem then laid the groundwork for sharing information and adopt new trends which led to Silicon Valleys' success (Feld, 2020).

2.3.3 Geography

The framework of geography could be described as the tie between innovation and the creative class individuals (Feld, 2020). In the creative class there are individuals such as engineers, professors, and entrepreneurs. These individuals often want to be around other skilful and creative class individuals. This supports the theory about the existence of a place which gathers these creative class individuals, such as entrepreneurial ecosystems. Another benefit for being geographically close is to reduce uncertainty for new start-ups. The existing entrepreneurs could serve as role models and support the new ventures (Rocha & Sternberg, 2005). By gathering the creative class individuals, the area increases the value and makes it even more attractive. The perk of being in a geographically well-suited location is that the ecosystem gets access to more people compared to places that tend to have smaller masses of people. This advantage is

therefore based on strategic locations which leads to attract more resource persons which contributes to the innovation in that area.

2.4 Competitive advantages

2.4.1 Interactions and networking

According to Mason and Brown (2014) entrepreneurial ecosystems have a bridging asset that serve to connect people, ideas, and resources. Here the dense networks in a geographical area are considered as an important driver for entrepreneurship and innovation (Spigel & Harrison, 2018). A social network is “a set of actors (individuals or organizations) and a set of linkages between the actors” (Hoang & Antoncic, 2003, p. 168). Social networks among entrepreneurs, innovators, and researchers are important to access resources for innovation. The entrepreneurs that possess bigger and diverse networks could be better positioned to identify opportunities that appears in the marketplace (Anderson & Miller, 2003). These opportunities are closely related to the networks within the cluster:

Opportunities do not drop from the sky. Opportunities are created within and among existing organisations as a product of ongoing networks of relationships and exchanges. Opportunities come most frequently to people located at advantageous positions within networks. Furthermore, exploiting an opportunity requires certain resources (human capital, marketing, sales, etc.). The same type of network relationships and contacts needed to identify opportunities are also necessary to obtain the resources required to exploit opportunities. (Low & MacMillan, 1988, p. 155)

The social networks enable knowledge, new opportunities, new technologies, and the entrepreneurship process to circulate in the cluster (Spigel & Harrison, 2018). The network is therefore closely related to the resource flow. Due to the proximity to other firms in the cluster, it allows valuable local networks to develop and therefore access different resources. By having a supportive culture, it encourages entrepreneurs working together and share these resources. Research from local communities reports that entrepreneurs share knowledge, experience, and innovative ideas (Baron, 2016). The entrepreneurs also encourage each other in order to exploit new opportunities.

Social networks connect entrepreneurs to investment (Spigel & Harrison, 2018). From an investors perspective they benefit from the social network by assess and evaluate potential investments. It is likely that resource holders such as investors seek information that measures

the potential of a new venture (Hoang & Antoncic, 2003). Those entrepreneurs that succeeds often remains in the ecosystems as “angel investors, serial entrepreneurs, dealmakers, or advisors” (Spigel & Harrison, 2018, p. 160). From their experience they could both attract support or new investors for new ventures. By sharing this skillset to their network, it could contribute to a better sharing culture as well as encourage new entrepreneurs to start their own companies. Friendship is also an important factor for investors:

After retirement, I was looking for a way to stay active and invest some of my money. A friend suggested joining him at a meeting of his investment club, and I have been a member there since. We often meet outside our official meetings to discuss new opportunities or with the people who seek investment. We found that talking with the actual entrepreneurs is giving us a more substantial insight than just looking at their proposal. (Neumeyer et al., 2019, p. 472-473)

A study from Neumeyer et al. (2019) about social networks illustrated that entrepreneurs and institutional leaders were mostly tied professionally while early-stage investors referred to friendship ties.

Another benefit from social network is knowledge sharing (Spigel & Harrison, 2018). Entrepreneurs could speak to entrepreneurs or other sources of information to help, learn, and discuss potential problems. The entrepreneurs should acquire a different knowledge rather than employees speaking to their manager in established companies with pre-existing routines selected by others (Aldrich & Yang, 2014, p. 60). It therefore becomes important for entrepreneurs to adapt and utilize the social network in a completely different way than as an employee (Spigel & Harrison, 2018). The entrepreneurs must be able to gain knowledge, gather resources, and learn how to create a new venture. Still, the entrepreneurs need to be exposed for the knowledge then learn or develop it by their own (Aldrich & Yang, 2014). By having access to information outside the company to get a competitive advantage by finding new customers and market intelligence (Spigel & Harrison, 2018). Entrepreneurs in high-growth firms could also work like a knowledge integrator by connecting the regional entrepreneurial ecosystems to other ecosystems on a global scale (Stam, 2015). A global linkage could connect companies to product markets and get external partners which could benefit the development of entrepreneurial ecosystems (Mason & Brown, 2014). Especially in the earlier stages of an ecosystem formation, before the local network are available, these international links are important to access both knowledge, resources, and markets. In addition, knowledge could be shared through educational institutions such as universities (Spigel & Harrison, 2018). By

having universities participating in the cluster or entrepreneurial ecosystem it gains the benefit of both skilled workers and research.

2.4.2 Competition within the cluster

It can be argued that competition and cooperation within clusters are not polar opposites (Newlands, 2003). The competition in the clusters or ecosystems therefore seems to be divided (Spigel & Harrison, 2018). There seems to be a lack of competition between the start-ups in many entrepreneurial ecosystems. The opposite is more likely to occur where start-ups is trending to share technology rather than compete for the same customers. Still, this differs from different ecosystems and their culture.

2.4.3 Investors

It is critical for entrepreneurs that financial support is available in entrepreneurial ecosystems (Mason & Brown, 2014). More specific, there need to be big mass of seed and start-up investors to provide entrepreneurs with finance and hands on support. Especially angel investors, current entrepreneurs, seed capital funds, and business accelerators are important.

2.4.4 Flow of resources

As mentioned, the flow of resources is close related to social networks as the entrepreneurs need to access the resources for them to be valuable (Spigel & Harrison, 2018). This can be achieved through social network. Resources that flow in the cluster or ecosystems could be resources such as financing, market leads, knowledge, mentors, and human capital. Since these resources are connected to social networks it could be difficult for entrepreneurs to get access without trust in the ecosystem. Broadening the entrepreneur's social networks can be done through events or gatherings. Still, entrepreneurs could also use their valuable time focusing on their business rather than spending time on bonding.

2.4.5 The positive effects of a cluster

There are several positive effects which the entrepreneurial ecosystem or cluster benefits from. These positive effects could be resources such as human capital (Rocha & Sternberg, 2005),

service providers (Mason & Brown, 2014), financial capital (Stam, 2015), and knowledge (Neumeyer et al., 2018). Other advantages the entrepreneurial ecosystems provide is collaboration with other actors (Spigel, 2017), possibility of expanding networks (Cooke et al., 1997) and a big pool of talented and skilled workers (Mason & Brown 2014). Perks of being in a cluster could lead to imposing barriers which includes memberships or personal invitation to events (Neumeyer et al., 2018).

Human capital could provide new talents, information, and skills to the entrepreneurial ecosystem or cluster (Rocha & Sternberg, 2005). From a company's point of view, they need qualified and skillful workers for a sustained growth (Baron, 2016). When the ecosystem grows it become more attractive for individuals outside to join the ecosystem. Educational institutions are one of the sources of human capital. A successful ecosystem works as 'talent magnets' (Mason & Brown, 2014). By being attractive to students, engineers, scientists could increase the value of the ecosystem and potentially develop new employees and entrepreneurs.

Service providers could be "lawyers, accountants, recruitment agencies and business consultants" (Mason & Brown, 2014, p. 12). By having these providers in the cluster or entrepreneurial ecosystem they can assist start-ups with support and avoiding mistakes. Often such service providers make the support for free as long as a long-term business relationship will eventually appear.

The government contributes to the ecosystem with events like "government-sponsored programs such as incubators and entrepreneurship training centers and more informal institutions such as legal rights and open market" (Spigel & Harrison, 2018, p. 153). There are also some benefits for the government: Since the governmental research laboratories could be ineffective as incubators due to the missing public market exposure, the private businesses could contribute to the research based on competition (Mason & Brown, 2014).

2.4.6 The negative effects of a cluster

It often depends on the culture in the entrepreneurial ecosystem or cluster for the negative effects (Mason & Brown, 2014). A bad culture could be not valuing the societal contribution of entrepreneurs, considering entrepreneurs as low social status, and failure are regarded as something negative.

Rocha & Sternberg (2005) argues that the advantages of being a member of the community could be considered as their weakness in the context of "cluster weakness". Cluster weakness

can be explained as cluster blindness where “negative effects impair the clusters’ innovation and ability to change in the face of competitive pressures or changes in demand” (Rocha & Sternberg, 2005, p. 274). On the other hand, a positive culture could normalize the risks of entrepreneurship and encourage the creation of new companies (Spigel & Harrison, 2018). By inhibiting social capital, it could potentially exclude outsiders, claim group members of the ecosystem, and restrict the member’s freedom (Rocha & Sternberg, 2005). If the entrepreneurial ecosystem has a closed approach, it could increase the focus on local networks instead of other networks.

2.4.7 The role of bigger actors

In Norway, the innovation programs of Innovation Norway (Innovasjon Norge) and the industry programs of the Research Council of Norway (Norges Forskningsråd) are some of the most important instruments for research and development and innovation (Rybalka, 2016). These are business policy measures with public funding where the goals are increased value creation and innovation.

Innovation Norway

"Innovation Norway is a public agency whose aim is to contribute to growth in enterprises through innovation programs, regional support and other business development policies" (Rybalka, 2016, p. 35). At Innovation Norway, companies can receive support through, among other things, "subsidies, innovation loans, risk loans and advice to businesses that will develop a new product, new technology or implement organizational changes" (Rybalka, 2016, p. 35). Support for the companies takes place through applications that are assessed professionally through specific guidelines. Innovation Norway's role is to trigger investments in restructuring, innovation, and internationalization with the aim of developing a more diversified and sustainable business life (Innovasjon Norge, 2020). Innovation Norway's main goal is to work for profitable corporate and socio-economic business development and to unleash the regions' business opportunities (Normann et al., 2022). In addition, they work to bring out more good entrepreneurs, more fast-growing companies, and more innovative business environments.

The Research Council of Norway

The Research Council of Norway (Norges Forskningsråd) finances research both at universities, colleges, and institutes and in business (Rybalka, 2016). The main criterion for

receiving support from the Research Council of Norway is that the projects have operational and social economic potential.

Siva

Siva is *The company for industrial growth* and is a part of the public instrument apparatus for business development with a regional focus (Fjærli et al., 2018). Siva contributes with financial tools such as grants and loans, but also has incubator services and a business garden program. The business garden program will contribute to "increased value creation, growth and development of Norwegian business, preferably in the rural areas" (Fjærli et al., 2018, p. 7).

The business garden consists of a business community that works for development in its region (Fjærli et al., 2018). Here, companies that are based in or connected to the business park, gathers through close cooperation and follow-up. Such a community should contribute to providing the businesses in the district with an innovative, professional, and social environment. Through the business parks, Siva offers services such as "business consultancy, help with the development of business ideas, market planning, networking, internationalization and other development-related tasks" (Fjærli et al., 2018, p. 8). Here the companies get an opportunity to connect to various networks in professional environments, R&D environments, or investment environments.

Siva's incubation program consists of incubators that will contribute to the development and establishment of new growth companies and create growth in established businesses. The companies get access to expertise in business development, commercialization, and mentoring, as well as networking and financing. Here, entrepreneurs get advice on the way from idea to market, but established companies also get advice on growth and budding.

3 Methodology

This chapter of the thesis will explain and justify the methodological choices that have been made in this project. Meaning the choices attached to research approach, research design, and choice of methodology in general. We will also look at the data collection method and explain how we approached this task. Finally for this chapter, the choices that have been made will be evaluated. This will be done to ensure that the reliability, validity, and the ethical and legal responsibilities of the thesis are maintained.

3.1 Research approach

There are two different types of research approaches: inductive and deductive (Saunders et al., 2009). The two approaches can be described as opposite directions, which is illustrated in figure 4 below (Haque, 2022).

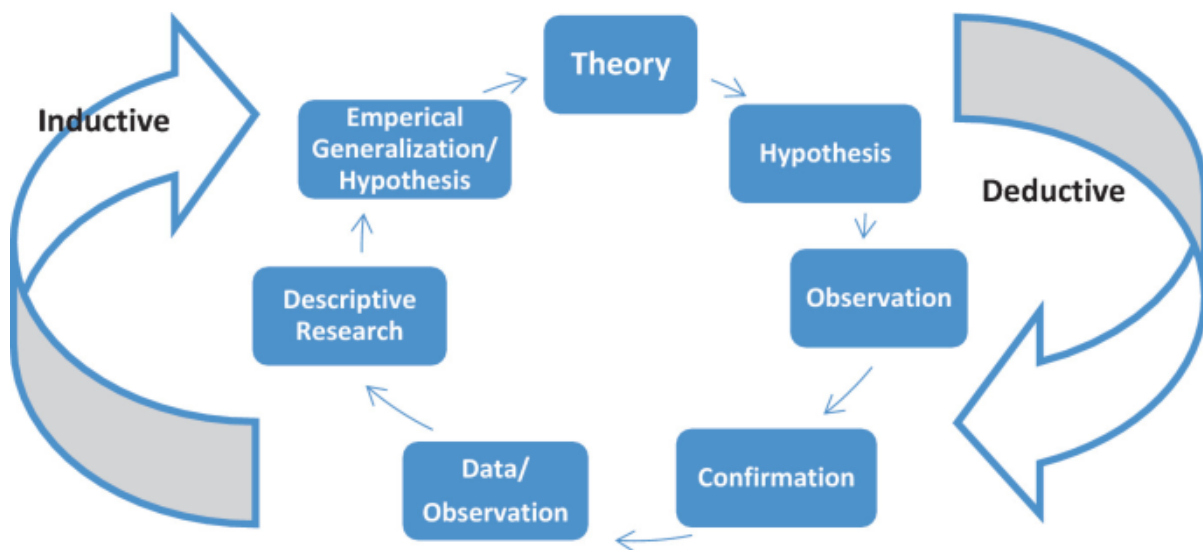


Figure 4 Inductive and deductive research approach (Haque, 2022)

2022). The goal is to make observations that will in turn create a theory which accurately describes the reality. One can of course not observe the entire population, which means that empirical generalization is needed for it to result in a theory. On the other hand, the deductive approach uses existing literature and theory to create ideas and hypotheses which are tested to the reality. By reading the existing literature, different hypotheses are created, which in turn must be observed in order to confirm or deny it. Therefore, the two approaches basically include the same steps, but in the opposite direction of each other. The research approach for this thesis is the inductive approach, because we use observations from interviews to describe a

phenomenon and attempt to draw generalizations from what we see. Further research on this can become a solid theory.

3.2 Research design

There are three different research designs: exploratory, descriptive, and causal (Christensen et al., 2014). When choosing a research design to answer a given issue, there are three factors of significance (Gripsrud et al., 2016). The significant factors are: (1) experience from subject area, (2) familiarity to theoretical studies, and (3) the level of ambition with consideration to identifying connections between variables. Due to little experience from the subject area and rather limited knowledge and familiarity to theoretical studies, we decided to choose an exploratory research design for this thesis.

3.3 Choice of method

Data collection and analysis can be executed in many different ways, but the main differentiation is between qualitative and quantitative research methods (Christensen et al., 2014). Qualitative research methodology attempts to give a deeper understanding about a subject by doing thorough research on few research objects. Quantitative research on the other hand does not give the deepest understanding to how or why something happens, but it helps in understanding a larger phenomenon. Our study is not quantifiable and cannot be explained by just numbers. The goal of our study and this thesis is to explore a single case and gain a deeper understanding of the issue. Therefore, the appropriate choice of method for this case study is the qualitative research method.

3.3.1 Research strategy

A research strategy is a plan for how the research question should be answered, and it provides an overview of which direction the research should develop (Wedawatta, 2011). Which research strategy to choose depends on the research question, the amount of existing knowledge about the subject, time and resources available, and one's own philosophical underpinnings (Saunders et al., 2009). According to Yin (2011) the different strategies that can be chosen are all able to be used on exploratory, descriptive or causal research. However, some strategies are said to be better suited for either inductive or deductive methodology. Furthermore, it is important to

mention that the different strategies are not mutually exclusive, which means they can be combined to achieve better results.

3.3.1.1 Case study

This project is a case study, which means that it is an approach to research that involves an empirical examination of a temporary phenomenon in its natural context (Robson, 2002). A strategy like this is also to be preferred if the lines between the phenomenon and the research context are a bit diffuse (Yin, 2009). Therefore, a case study is a very favourable strategy when the goal is to gain a deep understanding of the context and the processes that takes place. In our exploratory study we wish to find out as much as possible about the dynamics within Media City Bergen. A case study will allow us to get answers to questions about how, what, and why, which makes it well suited to study the dynamics in our project. Furthermore, there are two different dimensions to a case study: single or multiple case, and holistic or integrated case. Our study researches a single business and is focused on a specific unit in Bergen, which makes it a single and integrated case study.

A single and integrated case study brings the advantage of being less time consuming, while also demanding less recourses to implement (Saunders et al., 2009). In our case, the study has a relatively short timeframe, which makes it a cross-sectional study. The timeframe for this project is one semester, or approximately four months. This makes it different from a longitudinal study which gives insight to development over a longer period of time, whereas our study only shows a momentary picture of the situation. However, some of our informants can help us extend the picture of the situation by bringing in their many years of experience. They can contribute by letting us gain insight in the history of the case, which might help better explain why the situation is the way it is today. Though, the data received from the informants will be limited to the information they manage to remember. There are also some disadvantages from having limited time and resources. One is that we are not able to study several businesses and compare them to gain better insight and have more grounds to generalize the findings. Secondly, there is little to no time to have follow-up interviews afterwards if needed. We did however try to compensate this by asking the informants if we could contact them again if necessary. Luckily, most of the informants were positive to this.

3.4 Case description

3.4.1 The start-up and entrepreneurial environment

The purpose of this thesis is to gain a greater insight on the topic of start-ups and entrepreneurial ecosystems. Specifically, the goal is to explore the dynamics within an exciting cluster environment – Media City Bergen. Start-up environments are usually a fast-paced culture where traits like creativity and communication are highly valued (Kerrigan, 2018). A start-up business is typically smaller than large corporations, particularly in the early stages of growth. This creates a great opportunity for the employees to build strong relationships and enables them to exchange thoughts and ideas freely. Therefore, start-ups tend to have strong cultures which are often perceived as less formal than the culture of a larger corporate environment. Also, there is often less emphasis on hierarchy within teams in a start-up environment (Lee, 2014). By exploring this further, the goal is to figure out if this type of environment can contribute to competitive advantages for start-ups.

3.4.2 Media City Bergen

Media City Bergen is the headquarter for the Norwegian Media Cluster, which has evolved into an exciting international environment (*About - Media City Bergen*, 2015). With their 45 000 square meters, Media City Bergen is the largest and tallest commercial building in Bergen (*Media City Bergen - Oslo Pensjonsforsikring*, n.d.). The cluster houses more than 100 companies, including eight major universities as their members. One of the founding partners of the Media Cluster is the University of Bergen, and their department of Information Science and Media Studies is co-located in Media City Bergen. Located alongside them are many leading media and technology companies. There is a huge variety of sensational processes in action within the walls of Media City Bergen. They are said to be a “world leader in augmented reality, graphics, AI, virtual studios, broadcast & IP based video, robotics and tools for workflow and visual storytelling” (*About - Media City Bergen*, 2015, p. 1). Media City Bergen is a leading international hub where innovations within media and technology arise.

3.4.3 Ecosystem in Media City Bergen

Media City Bergen is described as a highly successful environment because it is operated by a unique way of working together. Because of this unique environment and their access to the

best tools on the market, more than 80 percent of the cluster members are launching new innovations every year. This goes to show that the Norwegian Media Cluster can enjoy an innovation ecosystem that works excellently to their advantage. There is also a very high degree of joint innovation projects and high innovation speed (*About - Media City Bergen*, 2015).

3.5 Data collection method

This subchapter will present the empirical foundation for the study. Firstly, we will go through the methods that were used in the data collection process, followed by what kind of data was collected, and lastly the sources the data was collected from. The types of data that will be mentioned in this chapter are primary data and secondary data. Primary data is data which is collected specifically for the purpose of the study (Saunders et al., 2009). In this case that will be the data that is collected for us to answer the research question. Therefore, this thesis will be based on primary data. Secondary data, on the other hand, is data produced for a different purpose than the current study. This type of data, in the form of articles, will be used as a supplement to the primary data, but not as our main source of information.

3.5.1 Interview

The chosen method for collecting primary data is semi-structured in-depth interviews. This happened in the form of conversations with different actors within Media City Bergen. An interview guide (Attachment 1) was made beforehand and worked as a base for the conversation with each of the respondents. The guide was adjusted slightly along the way and there was an attempt to customize some of the questions to what we thought the respondent had more knowledge about. Therefore, we did not waste time asking questions that were completely irrelevant for the respondents. However, it was not always easy to do before the interview and we had to try and test during the interview as well. As a result, we had to add or remove certain questions during the interview. Although, that is the big advantage that comes with a semi-structured interview. It allows for great flexibility, while the interview guide ensures the need for stability (Saunders et al., 2009). All the interviews were recorded on a tape recorder and later transcribed to enable correctly reproducing the informants' answers in this thesis.

We chose to interview one informant at a time, and both interviewers were present during the interviews. However, only one of us were leading the interview and asking most of the questions to avoid the informant feeling overwhelmed. It is often easier and more comfortable

for the respondent to focus on just one person at a time. Therefore, the other interviewer focused more on taking notes and handling the recording, while also asking follow-up questions where it was needed. During the interviews we tried to use a third-person technique to capture the informants' perception on certain topics. This was done to ensure more true answers in situations where the informant might not want or was not able to include their own personal thoughts and experiences. According to Gripsrud et al. (2018), a third-person technique is used when the receiver of the question would not give their true opinion when asked a direct question. Although, we did not ask any very personal or compromising questions, but it helped in getting a better sense of the dynamics within Media City Bergen. The reason for this is that the respondent was able to share both their personal perceptions and experiences, while also including their knowledge about other's experiences where needed.

3.5.1.1 Interview guide

The interview guide works as the framework for the interview, and it includes the different topics that one wish to cover during the interview. Additionally, it shows introductory questions and keywords which can be used for follow-up questions. We divided our interview guide into eight main questions or topics which all had several keywords or sub-questions attached to them. Before the main questions were asked, we made room for a couple of minutes of casual chatting, while also presenting the theme of the interview and the purpose of the study. Furthermore, the informant was asked to present themselves shortly with focus on their role in Media City Bergen and their work experience. Then there were some questions about Media City Bergen and how the informant experiences the interactions withing the cluster. Following, we questioned them about how a cluster like Media City Bergen can help start-ups, and what they perceive as the advantages and disadvantages about being a member of the cluster. The informants were also questioned about bigger companies and their role in the Cluster. They were also asked about which companies had been a part of the initiative of starting the cluster, but we experienced that many of the informants were struggling to answer this question properly. Therefore, we chose to remove that question as it was not critical for the study, and without answers it did not help us anyway. Lastly, the informants were questioned about how they went about to become a member of the cluster in addition to how they experience the flow of resources in the cluster to be. To finish the interview, we asked if they had anything to add or if they wanted to ask us about something.

3.5.2 Secondary data

Secondary data is mainly articles, press releases and information for Media City Bergen's web pages. This type of data was mostly used to supplement the primary data and to fill in the gaps where the informants could not remember exact information. It was also used to design the interview guide which made it easier to create questions.

3.5.3 Sample

In total we interviewed eight informants with different positions in Media City Bergen. We wanted to view the case from different points of view and therefore the sample consisted of members of the cluster, people from the administration in Media City Bergen, and investors. Within the group there were two women and six men, where four are members, two are part of the administration, and two are investors. Considering there are around 1500 people within the walls of Media City Bergen, eight people is a very small percentage of the cluster (*Media City Bergen*, n.d.). However, we considered those eight people to be sufficient to get a glimpse of the dynamics within the cluster. According to Saunders et al. (2009), there is need for a sample size of five to 25 people in a qualitative study where there is use of in-depth interviews. Therefore, our sample is within the required frame according to theory. Thus, due to the relatively short timeframe for the study, and the busy schedules of the employees in the cluster, there was not much time left to include more people in the sample.

3.5.3.1 Description of the sample

To ensure the research subjects' anonymity, the participants are presented as start-ups (S), workers from the administration at Media City Bergen (A), or investors (I). Start-ups are employees of different start-ups within Media City Bergen with various roles. Some of them are the CEO of the company, while others have different roles further down the hierarchy. This way we can see different perspectives from the start-ups. Furthermore, all the information that may impair the participants' anonymity will be changed or left out completely from the thesis.

Table 1 visualises the sample and shows how it is divided into the different groups of informants. This is relevant to show which groups have the heaviest influence in terms of having the most informants. Furthermore, this shows which perspectives we investigated and how many opinions and experiences from each group has been considered.

Table 1 Description of the sample

Informants			
Category	Group code	Number of informants	Exact code
Administration	(A)	2	A1, A2
Start-ups	(S)	4	S1, S2, S3, S4
Investors	(I)	2	I1, I2
N		8	

Based on this distribution, 50% of the sample are from start-ups, while the administration and investors are represented by 25% each. The slightly uneven distribution is due to there being a lot more employees within the start-ups than there are administration workers and investors.

3.5.3.2 Choice of informants

The informants were chosen through non-random sampling, and the specific methods used were a combination of convenience and snowballing (Eisenhardt et al., 2016). We started with the convenience method because this is the easiest method for choosing informants. The reason for this being that we can choose the people who are easiest to reach and get in contact with. In combination with snowballing, this turned out to be the most time-efficient method for us and our project. Snowballing is a method where the researcher starts with a small number of informants that fit the criteria for the study. Then, these informants are asked if they know anyone else who might have the knowledge and experience that we would like to explore. In our case we started by contacting the most relevant people and businesses within Media City Bergen. The first informant took initiative to refer us to someone else, which was very convenient as it was early in the project, and we still needed more respondents. Later, we also had another respondent who recommended someone within Media City Bergen who we should interview. These two referrals are classic examples on the snowballing method.

3.6 Analysis of the data material

After the in-depth interviews we were left with a large amount of raw data in the form of sound recordings. To get a better overview and to easily be able to transfer the data to our thesis, we

chose to transcribe the recordings from the interviews. Transcribing is a process where an interview is reproduced into a written text (Saunders et al., 2009). Because we wanted the written data to be as accurate as possible, we transcribed each interview verbatim. This included filler words and pauses because such things can have a deeper meaning to them. Long pauses could possibly mean that the respondent had or wanted to think thoroughly to be able to collect the response from their memory. A quicker response, on the other hand, is often the first thing which the respondent associates with the question. We also tried to take notes on non-verbal communication such as body language and other visual hints. Furthermore, we divided the data into different categories according to the themes in the theory section. The chosen categories were: (1) interactions and networking, (2) competition within the cluster, (3) investors, (4) flow of resources, (5) the positive effects of a cluster, (6) the negative effects of a cluster, and (7) the role of bigger actors. These categories were chosen because those were the topics where the respondents gave us the best answers. Also, because together these categories describe the dynamics of a cluster, while also explaining how it can affect a start-up's competitive advantage. These have also been described briefly in the theory and will be further explained in the next chapters about the findings and discussion.

3.7 Evaluation of the chosen method

When conducting a study, there are always several challenges tied to the quality of the collected data. This is often connected to the credibility of the study, and whether or not the chosen method is appropriate to answer the research question (Saunders et al., 2009). The quality of the data in a study like this is important, and there are two major properties of good measurement, which is reliability and validity (Christensen et al., 2014). Therefore, to be able to determine the quality of our collected data and findings, the reliability and validity of the research process will be discussed in this chapter.

3.7.1 Reliability

According to Christensen et al. (2014), reliability is about the consistency or stability of the scores the researcher receives from the chosen measurement instrument. In other words, reliability refers to whether the chosen data collection method brings in consistent findings. All measurements are bound to have some random errors, and the less a study has of these errors, the higher the level of reliability is. Also, reliability is a condition for validity and without

reliability, validity is impossible to achieve. However, this does not mean that one is a sufficient condition for the other alone (Gripsrud et al., 2016). If the collected data of this project is unreliable, then the data will be invalid. Therefore, it is natural to go through the reliability of the study first.

Measurement errors can be either systematic or random (Rosner et al., 1989). Systematic errors are connected to how the data collection process is structured and implemented in the study. Random errors, on the other hand, are related to the respondents and other variables which the researcher is not able to control. An example of a common systematic error is when an informant misunderstands a question during the interview (Saunders et al., 2009). This example is categorized as a systematic error because it is related to how the interviewer asks the questions.

To avoid as many systematic errors as possible we tried to be as concise and clear as possible in the way we asked questions. We also attempted to formulate the questions with little to no room for misunderstandings. If the reply of the respondent did not answer our question in the way we wished for, we re-formulated the question to get a more suited reply. However, we could have been better at making a summary at the end of the interview where we did a short recap of the answers and made sure that we had understood them correctly. This way we could have been more certain that the answers of the informants had been received in a way that was true to their opinions and experiences.

Random errors are difficult to avoid completely. However, to make them as minor as possible we tried to facilitate the interviews in a way that made the informant comfortable. We wanted to make them feel like they were in a safe environment where they could speak freely and honestly. Because of this, we started the interviews with a few minutes of informal conversation to loosen any tension or insecurities. It seemed to work the way we wanted to, and we felt like all informants experienced us as friendly and with good intentions. Therefore, we believe that there was built a foundation for mutual trust and honesty throughout the interviews. After the informal conversation we made sure to inform the respondents about their anonymity and that it will not be possible to connect the information in this thesis to them personally. Hopefully this too was a contribution to a more honest and truer interview as the respondents did not have to worry about getting backlash for their answers.

3.7.2 Validity

According to Saunders et al. (2009), validity is about whether the data that is collected can be used to answer the research question. Meaning if the data material is valid and relevant so that it provides information about what it has intentions to measure. Validity has two different dimensions which are external and internal.

Internal validity is related to considering if the results are valid and effective within the sample and phenomenon that are being studied (Christensen et al., 2014). By using semi-structured interviews, we have had the opportunity to ensure a high degree of validity. This is because semi-structured interviews allowed us to explore the theme of the study and do follow-up tests on the answers from the informants (Saunders et al., 2009). We asked follow-up questions to the respondents during the interviews to deepen the understanding about certain topics. This also made the respondent more aware of which topics were the most important and helped them understand the questions better when put in a follow-up question as well. Furthermore, this was done to identify and eliminate any misinterpretations and misunderstandings that could occur. However, we realize that we probably should or could have sent the transcription back to the informants for approval. This would have strengthened the internal validity because we could have been more certain that we had the correct information.

The external validity of a study is high when the findings can be generalized to be valid in other similar contexts as well (Saunders et al., 2009). The transferability of the results in this study may be rather limited because we only look at a single case in one specific organisation. Although, we believe that our findings can provide some pointers on what is happening in the bigger picture.

3.8 Ethical and legal responsibility

3.8.1 Responsibility related to research participants

All research studies are affected and guided by ethical and legal norms (Yip et al., 2016). In studies with human participants, it is especially important to follow and be considerate of such norms. Researchers are obligated to “protect the life, health, dignity, integrity, right to self-determination, privacy, and confidentiality of personal information of research subjects” (World Medical Association, 2013, 'General Principles'). Yip et al. (2016), state that mistreatment of human participants in a study is considered research misconduct. Examples of

such behaviour is failure to follow approved protocol, lack of or insufficient informed consent, or subject being exposed to physical or psychological harm.

3.8.1.1 Consent and possibility of causing harm

According to a common definition, “informed consent is a process by which a subject voluntarily confirms his or her willingness to participate in a particular trial, after having been informed of all aspects of the trial that are relevant to the subject's decision to participate” (Yip et al., 2016, ‘Consent, possibility of causing harm’). It is standard procedure in a study like this to collect informed consent from all participants. There are several components which are essential to include when informing the participants about the study. We have used the guide from Norwegian Centre for Research Data (NSD) to shape the information letter we provided our research subjects with (Attachment 2). Additionally, we had to report the project to them to make sure that what we had planned did not break any rules. When reporting to Norwegian Centre for Research Data, one is asked about the purpose of the study, what the collected data will be used for and if any sensitive personal information will be collected. We had to provide thorough information about the project to ensure the safety and well-being of the respondents was intact, as well as their anonymity and privacy. Therefore, this report was sent in early in the project, as the processing time of the application could take up to thirty days. The approval from Norwegian Centre for Research Data was needed before we could start with the interviews. This was to ensure that all ethical and legal responsibilities were followed the way we assumed, and that our plans fit within the expected frames. Although, we did not collect any sensitive personal information at all, we could have assumed incorrectly due to misinterpretations. Therefore, the report and application to NSD also worked as a verification that we were on the right track before the interviews took place.

4 Findings

This chapter will present the results from the data collection, which will lay the foundation for the discussion in the next chapter of the thesis. It is important to state that the interviews were done in Norwegian, while this thesis is written in English. Because of this, the following chapter will include quotes that has been translated to the best of our abilities. Therefore, the direct quotes that are included in this chapter are technically not direct quotes, but they are as accurate as our interpretation of the translation. There might be some minor differences in wording and meaning behind expressions due to lack of an exact translation or similar words. Nevertheless, we hope we have managed to stay true to the messages of each informant.

4.1 Interactions and networking within a cluster

The respondents from the research highlight the importance of interactions and networking in the cluster. Investors, start-ups, and the management of Media City Bergen particularly highlight the meeting points that the cluster arranges. There are industry events, workshops, seminars, lectures, or themed evenings where the actors can get to know relevant people for their industry. For the companies ideas can be exchanged, new projects discussed and potentially result in new collaborations. A lot of the companies also share offices or sit in open office environments where they can form close ties with each other.

For some of the companies that were interviewed, it appears that they have a number of specific actors they are in contact with that are relevant to their objectives. There is continuous collaboration with institutions such as universities and local authorities. The companies can get ideas, advice, collaborate or do business with some of the actors in the network.

The investors get the opportunity to meet new companies. Most of the start-ups are young companies with little turnover and large capital requirements. During the interviews, it emerges that in Media City Bergen the investors work proactively on this front with both start-ups and scaleups. By attending meetings, those involved form important networks and relationships with both individuals and companies.

The administration has slightly different levels of interactions. It can be inbound and outbound, as well as structured and unstructured. Media City Bergen reaches out to many people using websites, newsletters, and social media. In addition, there is a member contact that reaches out to specific members. Much of the contact is one-to-one communication with businesses and

people in the businesses. Nevertheless, continuous development is taking place so that there are more contact points to establish closer relationships.

It is important that the companies considering membership in the cluster understand how the cluster in Media City works. The companies have to do the work themselves with interactions, but the administration facilitates the companies to form networks and new relationships:

We are not a sales force for you. We do not sell you externally as a marketing company but look at it as a sports team for our industry where you sign up for access to the facilities for the activity offer, but we reserve the right to top the team in the form that those who show up for training get more out of it. Put simply, say that you could very well end up becoming a supporting member here. You pay the dues and may not get as much out of it if you don't show up at our events, don't show up when we had delegations here, and don't present. Then you won't get as much out of it, but if you do, you will get a lot in return for it both in the form of a network and certainly increased sales of services in the long term. We see a very big difference between the companies that have understood how to use the cluster and those that, in a way, try to calculate home money for money in sales, but there was no success. (A1)

Based on this quote, one can see the importance of participating in events for the companies that want to connect the valuable networks. Even if networking is facilitated, companies must be proactive and establish relationships themselves. Nevertheless, the administration tries to match up the member companies as needed: "You should speak to this person in that company to talk more about what it does with green screen technology" (A1). The administration in the cluster accelerates and tries to boost the natural interaction. A concrete way in which this dialogue is facilitated is through the communication tool Slack. Since many companies in the cluster use Slack as their main tool, this was a natural choice. Professional Slack channels are also shared here for the members.

4.2 Competition within the cluster

There is a lot of competition between the companies, but it still emerges that openness and cooperation are core values for success. As with the example of Silicon Valley, the actors in the cluster are concerned with working together rather than having a closed society. The respondents point out that there is an exchange of ideas and labour flows between the

companies. By supporting each other and the cluster, one contributes to a well-functioning arena:

That the way we do it is through collaboration and that we refer each other, rather than saying "don't go to them, we do better here". It is something we also encourage members to do; cooperate where you can and compete where you must. Because together we are greater than the sum of each other. (A1)

Labour is a large part of the competition in Media City Bergen. Especially programmers or more specifically developers, architects, UX-designers are important resources in the media cluster. By showing the company as a good place to work, they attract this workforce. Nevertheless, there are someone who highlight limitations in direct collaboration with what they consider to be direct competitors. Others, however, say they have no competitors in the cluster, but that is typical for niche companies. The investors naturally compete with other investor companies. In Media City Bergen, there are not many investors, and they see each other as colleagues. The administration sees competition for labour as a positive thing in that people jump between the companies in the cluster, but at the same time stick to the industry.

In relation to the competition, it is very divided who has competitors in the cluster. A selection of the start-ups has other companies that do exactly what they do in the cluster, but others like to compete outside the cluster. The administration works to give member companies the same conditions and offers such as introductions or other events for members:

We make a number of introductions through our work to potential customers or partners. So, then you have to look extra at those who are direct competitors, by giving them the same offer. That you don't favour any of them. Equal opportunities are therefore being created on the part of the cluster. (A2)

Depending on which industry the companies belong to, the competitive situation can also be different. Some industries typically collaborate more than others:

For journalists and newsrooms, to be specific, it may be that we all win by sharing some methods and tools instead of everyone sitting around inventing their own wheels. We have the same wheels in operation, but the content they compete on. Then there are the specific cases, "the cases" and the professional source network that are competitive elements there. (A1)

Based on this, journalists may be more willing to share technical solutions. Furthermore, the respondents say that the technology companies in the cluster often have competing products.

Nevertheless, this is not always the case: "In other contexts, they collaborate to integrate each other on other parts of the solution. It is a gain you get" (A1). A reward similar to recruiting labour through the cluster.

4.3 The ability to obtain investors

According to the respondents, being part of a cluster network is a big advantage in terms of getting investors. The companies get an arena to present their ideas and thoughts. Nevertheless, it is the results that are the most important thing on the way to getting an investor, but it can be individual from different investors. In the cluster, there are arrangements such as workshops where the start-ups could be testing their products and ideas, as well as receive feedback. The investors in particular point out that without this exchange of feedback and ideas in the cluster, the start-ups would not have received advice during the process and could often spend more money than necessary on a problem that does not need to be solved. The fact that the investors are also part of the cluster itself gives an advantage in that they are in the same arena and connected with networking and visibility. How the investors get involved will vary:

We are a fairly active investor who not only contributes money but also knowledge, participates in the board, helps with strategy, business development, helps with organization building, helps with partnerships, joint ventures, everything. So then, in a way, the resource is more than money and networks. Then there is knowledge and know-how and work effort as well. (I2)

Others may enter as angel investors. The administration puts the member companies in contact with investors who are relevant to their industry or objectives. Newly established companies are attractive to investors: "There are a lot of investors who circle around a couple of innovative environments looking for opportunities" (I1)

One of the findings is based on why investors choose different companies to invest in. Of course, they must have a good plan and business idea, but "I think your results have quite a lot more to say about which investors you get" (I2). Nevertheless, it is emphasized that the company should be centrally located and easily accessible. Location and the office premises are most important benefit: "Because you often have to go out and visit them, anyway. It's more that we visit them, than that they come to us" (I2). By having good locations, it is easier to gain access to customers and relationships that make the process easier to choose an investment project. If one person had their own small office in a basement or somewhere else in the city,

they wouldn't come across people in the same way. In addition to being centrally located, having access to customers in the cluster will also be considered positive by the investors.

It is essential that an investor has faith in a project in order to provide capital and knowledge. Investors should be confident that what the companies come up with solves a problem that needs to be solved: "A great deal of the enforcement apparatus in Norway is characterized by the fact that companies are kept alive that at least have not proven that they are solving a problem that needs to be solved" (S1). It is often a choice between taking out a private loan or going out of business if the investors do not buy the idea. Nevertheless, there are companies that have other opportunities as well. For example, one of the respondents discusses that they have set aside funds from their profits to invest in an idea. In this way, they have the opportunity to do it as a partnership, but the start-up company can step in as an investor is also a possibility. Therefore, this can develop as either an internal investment or "budding" through another company.

From the survey there were some interesting responses related to finding an investor. One way to do this is to get in touch with someone in the cluster who has been through the same process themselves. In this way, the entrepreneurs can get to know other companies and can pick up advice on what might be a good idea to do. Another method is to attend events that focus specifically on how to raise capital for their ideas. Some of the meetings between investors and start-ups also happen a bit randomly:

It's a bit like that when the kids have to play with someone. They don't always need appointments. Things happen a little more randomly, right, and then you like to meet at a breakfast meeting. See you again in the canteen queue. Then you have a coffee with them. (S1)

In this way, one can make contact with relevant people for their company by making use of the opportunities they get. From the administration's side, they also facilitate the companies to be able to present themselves to politicians, customers, and investors:

Like here today, 6-7 cluster companies have been invited to present themselves to the politicians, just as we do with investors and customers such as business customers who want to, in a way, shop for technology from here. So instead of them "researching" themselves, they ask us to do the research and then we find these products that could be relevant. Then they show up here and hopefully there will be a signed contract after that. (A1)

The way this is presented, the companies can have sort of have an audition or a demonstration of why they should receive support or resources for their ideas.

From the administration's side, they have a job as an industry to get a greater investor focus on the media industry, which is what Media City Bergen was mainly intended to be. It is a task to get the big and heavy investors into this industry. Nevertheless, there have been large projects internationally:

Now we have also been lucky enough to be the Nordic "hub" for two EU projects that aim to develop media tech companies in particular. This has given us an extended network outside Norway. Therefore, we now have very good contact with environments in central Europe, in Belgium, Estonia, Finland and around with various environments. They have a very good overview of which start-ups are in our industry. Now it's more about making arrangements so that we get budding here on that particular one. (A1)

This way, the cluster gets an international focus. It opens up opportunities both for collaboration and expertise, so that there will be a greater investment in media companies in this cluster.

4.4 Flow of resources

In a cluster like Media City Bergen, there are many resources available. The companies get an arena to show off, but there are also physical facilities such as a canteen, cinema hall and auditorium. This facilitates meeting new people, forming stronger bonds or participating in events that can raise the level of competence. There are many available resources at the house itself, and by using this network the companies can get help to solve challenges. There may be challenges such as capital requirements, expertise, or introductions to various networks.

In order to make the best possible use of the resources in the cluster of Media City Bergen, a flow of resources is needed. There are several types of resources that are exchanged in a cluster such as labour, capital, information, or knowledge. According to A1, the cluster is an attractive place to be, but the administration is also working to make the media industry more attractive. In this way, labour and other resources flow better between the companies in the cluster. In general, it is easy to meet when working geographically close. If someone need ideas or assistance, it is often a short distance to other members of the cluster. According to the respondents, cooperation is a very important factor, and this is reflected in what is shared during this flow of resources. Much of the contact begins a new relationship, and then this contact

increases when a company needs support. It can start with an invitation and then a resource flow can develop between the parties.

The workforce in the clusters is an essential part of the development in the cluster: "There are many employees who have worked for many companies in the cluster" (I1). By that, one means that in relation to labour, the cluster shows that employees switch companies across the companies in the cluster. Some change employers and some are hired directly from another company. In this way, it becomes possible for the competence to remain in the cluster and to receive continuous development in the same network: "even if someone quits, they soon show up again somewhere else" (A2).

For the cluster, the flow of capital is a big part of their work. According to A1, Media City Bergen is a non-profit organisation. This means that what comes in from capital goes out again to the benefit of the members. This capital can be used for measures such as innovation projects or skills development. From the investors' side, they contribute with money and networks, but also knowledge and work effort. For the companies and investors, the network will make it easier for them to meet each other and lower the threshold for making contact. In this way, the investors can work both proactively and at the same time be close to companies that are looking for capital for their investment.

Knowledge is a valuable resource in order to drive development further. Based on the findings, information and knowledge is shared with those who are not seen as natural competitors. It can often contribute to a give-and-take relationship: "the exchange of information between those who do not compete becomes prominent" (I1). According to S1, the companies will still not reveal too much about the product they actually sell but rather share their methods of working.

4.5 The positive effects of a cluster

During the interviews we were made aware of several advantages that comes with being a member of a cluster like Media City Bergen. Some of the information came from direct questions about how a gathering point like Media City Bergen can work as a benefit for the members. While other statements were made from answers to different questions. Therefore, there are statements about advantages from several perspectives and categories.

The most common benefit that most respondents seem to agree on is the fact that Media City Bergen works as a very important gathering point, especially in terms of networking. One of the respondents points out that knowledge sharing perhaps could be the most important

advantage that comes from this meeting point: “It is a very important meeting place, maybe primarily for knowledge sharing” (S1). This statement is supported by the administration who claims they have facilitated this: “We have several different networks for skills development and competence sharing, especially” (A2).

Another advantage about being gathered in an environment like Media City Bergen is the many informal and unofficial meeting points in the building: “The best is probably that there is a physical proximity that sort of gives you those unofficial meeting places. Typical example is ‘coffee machine-talk’” (S3). This is a benefit that many of the respondents agreed on, and most of them answered this indirectly when being asked about interactions which is written more about in 4.2 above in the thesis. Meeting important people at lunch was also brought up as an advantage that comes with being in a cluster: “All of the big media companies are here, and there is something about the fact that you meet all these people at lunch or in the elevator” (I2).

Many of the respondents brought up conferences and events as a great advantage that comes with the membership in the cluster: “[...] the company Media City Bergen who is here in the building and arranges a lot for us. That is maybe the main reason we chose to become a member of the cluster, to get access to all the events” (S1). Some of the different events were mentioned: “Here the members can both create and record webinars for free, they can invite to professional days, to workshops, ‘hackaton’ with students and such” (A1). The members of the cluster also get opportunities that they probably would not have gotten without the cluster: “[...] and that creates an opportunity for smaller businesses and start-ups to participate in an international fair and showcase themselves, which they would not have been able to do otherwise” (A2). For smaller businesses these opportunities are a great advantage because they can pay less for it as members of the cluster than they would have to pay on their own: “It is the opportunity to participate on trade fairs abroad, such as IBC in Amsterdam, and stand on a shared stand which we facilitate. That is a lot cheaper than if they had to do it themselves” (A1).

Another great advantage worth mentioning is the great location of Media City Bergen. Many of the respondents speak highly of the placement of the building and are pleased to be located in the city centre with immediate access to all the necessities: “It is in the middle of downtown Bergen. The placement is good, so it is easy to get to” (S2). The aspect of being gathered centrally provides centralization advantages like the opportunity to easily interact with other locations. In the case of international interactions, it is an advantage to be centrally located. As Norway's second largest city, there is good access to international flights. The administration also facilitates this type of interaction: “Then there is also the fact that we bring in people every

year for our conferences here. Very strong, professional international capacities who hold workshops and hold lectures to which they have access, at cost price” (A1). Another interesting finding is the real value of being centrally located. Even though a lot of communication takes place virtually, it still emerges that "There has been a huge 'boost' after the pandemic that people want to meet" (A1). In particular, the administration in Media City Bergen sees a good registration rate for most events. They interpret this as people appreciating the social meeting place they create. Additionally, as mentioned in 4.4, being a part of the cluster can be a big advantage when in the need for investors: “So I think from an investor’s perspective it will be interesting with a start-up who could be successful in such a cluster. Because one might be a bit stronger together» (S1).

4.6 The negative effects of a cluster

The common answer for almost all the respondents on the question about disadvantages or limitations by being a member of the cluster was that there are none. Most of them had to dig deep to find something that could be categorized as negative in any way. The first minor disadvantage is that the companies who work in shared office spaces in Media City Bergen are slightly limited when it comes to the physical layout in the office: “[...] now we are sitting in a common open office with other companies, and that lays some guides for what we can do. Meaning how we can arrange the desks, and how we can arrange the office physically” (S3). However, this was said to be a very minor issue, and not really something to complain about.

Something that several of the respondents mentioned was the fact that the members have a lot of responsibility in terms of making the most out of their own membership: “But we are like a gym, so if you do not use us, you will not get the benefits from it” (A2). This means that the members must be active and participate in the network if they want to experience the benefits that comes from the cluster. Furthermore, another respondent agrees with this point of view: “You must be active when something happens. So, you must participate and seek connections. So, it does not happen automatically, you must be active” (S4). A common thought seems to be that many members might have believed that once the membership deal is signed, all the advantages will start rolling in. However, the respondents confirmed that this is not the case: “The only immediate disadvantage I can think of is that you can end up with paying for something you will not get an effect from if you do not engage” (A1). It was also said that this is not really something they would categorize as a disadvantage, but rather something for the members to be aware of.

During the interviews we discovered that there were some negative opinions about the amount of media businesses in Media City Bergen. It was said that the original intention behind the cluster was to gather only media related businesses, but that is not the reality now: “There is not that many start-ups within media. That was kind of the hope, I think, when they first started. [...] So here at this Media Lab there were supposed to be for only media businesses” (S4). This was followed up by stating that they might not have found the amount that they needed to fill the building with only media related businesses, which is why there are some businesses from other industries: “But I do not think they have found that many media businesses, start-ups, who have gone for media. So, that could have been better” (S4).

There were also shared some concerns about brand new start-ups in Media City Bergen. Due to the high costs and the variations in which stage the businesses are in, there were questions about whether Media City Bergen was the best place to be: “I think if you are a brand new start-up, you will get even better support by sitting at Startup Lab for example. Because there might be more people there who are in the exact same situation as yourself” (I2). Furthermore, it was specified that even though there might be more different industries at Startup Lab, it is the focus on start-ups that is the key: “You can get better help from each other, even though there are a bit more different types of industries” (I2).

Lastly, a disadvantage that comes from being a member of the cluster and a part of Media City Bergen is the price of it: “It is a problem, the rent here is very high” (S4). This was said in combination with the statements from the paragraph above. So, Media City Bergen is a very expensive place to have an office, especially if the intention is to only use it as an office space. Additionally, it is said to be very expensive, particularly for smaller businesses and new start-ups. However, new start-ups can get a discounted price the first few years: “For start-ups it is a bit cheaper the first two or three years after setup” (A2).

4.7 The role of bigger actors

During the interviews, all of the respondents were questioned about bigger actors and their role in and impact on Media City Bergen. This was not that relevant for every respondent, which means that some of them did not answer, and some only gave short answers or assumptions on how they believe others might think. We started off by mentioning a couple of actors that we believed were important due to what we could find via research beforehand. However, it seemed like only one of them really had an impact on most of them.

Innovation Norway has been said to be an important actor for the cluster. The informants seem to be satisfied with the impact Innovation Norway has on the cluster and the recourses they provide: “I attended an event under the aegis of Innovation Norway, to get insight in their devices around internationalization. So that was super interesting” (S1). Most respondents mentioned Innovation Norway as a great actor when it comes to events and courses because it contributes to increased knowledge and competence among the members and attendees. Among other things, webinars were mentioned as a good contribution to continuous learning: “There has been a lot of courses about tax funds and such, and it has been helpful that Media City Bergen informs us about things like this. I have attended webinars and such, arranged by Innovation Norway, so now I have more information about what is possible and available” (S4). Although none of our respondents needed funding from Innovation Norway, it was mentioned by several as a great possibility for those who do need some financial help: “[...] and then they have some programs related to financing towards the start-up environment, where Innovation Norway goes in and contributes financially with the launch of specific products or the development of specific products and so on” (S1).

Innovation Norway was also said to be crucial from 2010 to 2018. However, there has been some restructuring in the cluster program which has been described as a scandal. This has apparently made Innovation Norway more irrelevant: “Innovation Norway was completely and crucially important from 2010 to 2018. Now I would say, considering the restructuring of the cluster program, which is a scandal, that Innovation Norway is more and more irrelevant for the cluster” (I1). Because of this, there are concerns about whether the clusters who are dependent on funding from Innovation Norway could disappear: “I am guessing that you will see a lot of the clusters who have relied on the funding from Innovation Norway will disappear” (I1). The same respondent further explains the history and reasoning behind why Innovation Norway is less important now than before:

From 2010 and up until the restructuring of the cluster program, the policy of Innovation Norway was that one received a given sum of money a year, which we managed to what we perceived was best for the development of the cluster. Then we reported some KPI values to Innovation Norway. Now Innovation Norway has restructured so that you must apply per project. That application process is very bureaucratic and makes the cost of applying for a project about as high as the sum you can receive in funding for the project. (I1)

Therefore, our findings show that Innovation Norway is perceived as an active and important actor for the cluster, but there has been a change in the last few years which is disappointing to those who need them the most financially. Those who only rely on Innovation Norway for events and opportunities for gaining knowledge, seem to still be pleased with the work they do.

5 Discussion

This chapter will discuss the information that was presented in chapter four about findings and analysis along with the previously presented theory. There will be drawn lines from our findings to the previous literature to best be able to answer the research question of the thesis.

5.1 Interactions and networking within a cluster

Based on the research of Porter (2011), the clusters provide a positive impact for start-ups to grow. The same theory applies for entrepreneurial ecosystems where entrepreneurship grows through interactions with individuals and the surrounding environment (Baron, 2016). This fits well with the findings from our surveys. The respondents in the survey highlight the importance of interactions and networking which is supported by the theory of Ketels (2003). These interactions with other actors could lead to higher level of innovation. The way it is structured, the administration will facilitate the ecosystem to grow, but the interactions and networking between entrepreneurs and other actors must be done independently.

For the cluster to have relationships among the members and establish networks, it is important that they use the tools that are available. By participating in industry evenings, workshops, seminars, or themed evenings, they get the opportunity to meet relevant people for their businesses. A supportive network is a large part of the entrepreneurial ecosystems core (Baron 2016), and the respondents mentions the benefit of exchange of ideas, discussing projects and possible new collaborations. In some cases, the network can also help develop the idea the entrepreneurs come up with. Based on the findings, the entrepreneurs have interactions with both investors, other companies, and institutions such as the local university. Through educational institutions, the members of the cluster gain access to human capital such as expertise and labour (Rocha & Sternberg, 2005). By having the various actors this close to each other, it is easy to get in touch with each other (C. H. M. Ketels & Memedovic, 2008). This finding fits well with Martin and Rypestøl's (2017) theory that face-to-face interactions could lead to new relations and cooperation. By having several open office landscapes, a shared canteen, and a common communication channel such as Slack, it is both easy to communicate and meet new people without specific events as well. By meeting in informal settings, it is a bit of a coincidence which people one meet, but also opportunities to form completely different relationships that can later become valuable.

The findings confirm the theory of the benefits of building networks (Spigel & Harrison, 2018). Especially in relation to opportunity recognition, access to resources and motivation sustainment. For opportunity recognition, the respondents stated that by making use of events and facilities, new contacts could be made. If people in the cluster had questions about products and ideas, it was easy to contact someone in the cluster or be referred further by someone they already know. The respondents confirm Feld's (2020) theories about networks and sharing where the networks are becoming larger, and more contacts, combined with the open sharing culture, allows for greater access to, for example, business-related information.

Several of the respondents highlight the advantages they get in relation to access to resources which relates to the benefits of social networks (Hoang & Antoncic, 2003). Nevertheless, recognition and motivation were not mentioned directly by the respondents. Since this is a less visible and private part, it is possible that they did not think about mentioning this part.

5.2 Competition within the cluster

One purpose of the entrepreneurial ecosystem is that it should strengthen the competitive advantage (Spigel & Harrison, 2018). Still, there are competition within the clusters and entrepreneurial ecosystems as well. An open ecosystem is what has historically proven to be the most successful (Feld, 2020). Such as the well-known entrepreneurial ecosystem in Silicon Valley where companies share expertise, and the workforce remains in the ecosystem. This is how Media City Bergen also wants to appear. Although there is competition between the companies, they often cooperate on different levels. Based on the respondents, this usually does not apply in a direct competitive situation, but the culture is based on a culture of sharing. Media City therefore tends to have an open sharing culture which allows the exchange of ideas and collaboration on various projects between the actors in the cluster. Nevertheless, competition for labour is what most respondents mention. In Media City Bergen, especially in the tech environment, there is a lot of competition for expertise and skilful employees. By presenting the cluster as a good place to work and develop, the actors will gain benefits from this. Labour flows between companies either in the form of changing workplaces or hiring out labour. Nevertheless, it is considered positive among the respondents that the competence remains in the ecosystem. In this way, stronger ties are forged between the companies.

The administration makes arrangements for companies to have access to networks and resources in the ecosystem. One aspect is that they try not to differentiate between the

companies so that some actors get greater benefits. That there is no obvious greater inclusion for some or exclusion of others. Especially in relation to networking, but also when it comes to facilities. It is planned that all members should have equal opportunities in the cluster.

Another aspect of the cluster is that the companies often compete for the same customers. As a start-up company, it can be difficult to stand up to established companies and the competition is tough in many industries. Newly established companies also compete for investors. Since many start-up companies have a great need for capital, it is important to stand out and attract investors. The investors can contribute with both financial support and knowledge (Mason & Brown, 2014). In many cases, the investors have to compete with other investors for which companies to invest in, but despite the competition, they see each other as colleagues. This helps emphasize the point of the open culture and that the companies can have a good relationship with competitors. In the cluster the companies both compete and collaborate with each other (Văcărel et al., 2009). With the approach of competing where the companies must and collaborate where they can, a cluster will gain more advantages such as the case of Silicon Valley (Baron, 2016).

According to Spigel and Harrison (2018), there are two ways to increase new companies' competitive advantage. The first is through the presence of companies in the same sector or supply chain. According to the respondents, there are high numbers of media agencies and tech companies in Media City Bergen. Many of these companies compete, but most of the respondent's impression is that firms not in a direct competitive situation are happy to share knowledge or support others if possible. Some individuals or companies are also part of other businesses, such as consultants or if a firm produce a component or software that another company control. This strengthens the cluster's competitiveness against other companies both regionally and abroad. The second method to increase the competitive advantage is to make use of knowledge and expertise in the cluster (Spigel & Harrison, 2018). Such as the journalists that shares technical solutions across the media companies to strengthen the cluster's competitiveness. The geographical proximity in a cluster means that networks are formed, expertise is shared, and resources can flow between the companies. The way it has been laid out; the competitive advantage will be strengthened with the approach the respondents have expressed.

5.3 The ability to obtain investors

For the development of a start-up ecosystem, finance and support have a direct impact (Baron, 2016). As the respondents elaborate, it is an advantage to be part of the cluster in terms of acquiring investors. Here, investors can contribute with support such as financial capital, knowledge, and networks. How the investor's role in a start-up can vary. Some investor companies only support start-ups financially, and some also contributes with knowledge (Mason & Brown, 2014). By taking part in the company, they can participate in important decisions in the board. For many companies, it can be very helpful to get assistance on strategic decisions based on their experiences with other start-ups (Stam, 2015). The same applies to organisational-building, business development and creating new partners (Ketels, 2003). This research emphasized that support therefore becomes more than just the financial investment and the network the investors contribute with. Of the entrepreneurs in our survey, none of the respondents mentioned that they had invested capital in other companies, but that support for each other floats around. Nevertheless, they spoke about the sharing culture in the cluster and how they perceive it to be.

In a start-up environment there will be a need for investors and will thus be a natural place for investors to be present. The administration facilitates the companies to increase their competence, develop their ideas and then present this to potential investors. A part of this facilitation also goes to networking, where they put the member companies in contact with investors, they believe may be relevant for their projects within specific industries or objectives. This means that the cluster comes a little closer to each other, but also that development can take place in a more controlled manner. By actively pushing new relationships towards each other, one creates a kind of matchmaking to find the best possible match for future collaborations. In addition to these findings this also emphasizes the theories for entrepreneurial ecosystems (Spigel, 2017). Since some of the purposes in the cluster is development of innovation, value creation, and competitive advantage, this will benefit both involved parties and geographical areas.

According to the respondents the advantage of a cluster is the gathering point and that one has access to various resources. By having a short distance for contractors to investors in the same building or close geographically, the threshold is slightly lower for having a meeting or seeking each other out. Nevertheless, according to the investors it will vary how an entrepreneur goes about finding an investor or vice versa. From the entrepreneur's side, it is important to put forward an idea that the investors have faith in and want to join. It can be an event like show-

and-tell, but it can also be a bit more random who one bump into or contact. To sell their idea or project, one can therefore use the network to ask how this should be done. Even if one is not in the same industry, the procedure may be the same. If there is potentially a competitor, for example, the advantage of increasing competence in the cluster and attracting more skilled workers means that one can get its benefits from helping each other. From an investor's perspective, there will be many aspects that play into the choice of investment objects. First and foremost, it is important that the investors have faith in a project in order to assist with support and capital. Therefore, it is important that the project looks profitable and actually solves a real problem rather than spending a lot of time and resources on something that will potentially never be realized or successful. If the companies can show customers in the network, this will also count positively. Nevertheless, the investors elaborate location and facilities are something they will find important. If the company is located centrally and appears tidy, this will give a good impression. A close location between the investment means that the investor can keep an eye on what is going on in the premises and the operation in general.

There are different methods of investing in a company, whether it is internal or external. Internally, an entrepreneur can set aside their own funds to invest in their own ideas, but they can also go into other companies they believe in as a partner or investor. This emphasizes the theory where successful entrepreneurs help other start-ups with financial resources or advice (Baron, 2016). Another option is to choose an angel investor, where they don't plan to take control of the company but pay for a lower ownership stake in an early phase. This means that the company has greater freedom to develop with the guidance of the angel investor and their network. This can be an advantage for distributing the ownership in the cluster and letting the contractors be in control of their projects.

5.4 Flow of resources

A big advantage by gathering into a close area such as clusters or entrepreneurial ecosystems is the available resources (Neumeyer et al., 2018). Capital, information, labour, competence, and networks can be highlighted as important resources (Spigel & Harrison, 2018). By being so close to each other, these resources can flow between companies, institutions, investors, and others involved through networks (Neumeyer et al., 2018). The cluster administration can facilitate a resource flow at Media City Bergen. This is done physically in the form of the arena in which the actors operate and could meet. By providing a meeting place, this opens the way for resources to flow in the entrepreneurial ecosystem. Since the geographical proximity is so

close in combination with an open sharing society, a natural flow of resources is facilitated. Collaboration is therefore an important factor for flow of resources in the cluster.

Human capital is one of the most important resources in a cluster or entrepreneurial ecosystem (Stam, 2015). This applies both in terms of contractors and labour (Baron, 2016). Since this is the core for further development, the actors around will become part of the interaction of buying and selling services, starting new businesses, and exchanging expertise. The entrepreneur's motivation to succeed in creating something thus becomes one of the driving forces behind such a flow of resources. The human factor makes it possible to establish networks and relationships. These contacts in turn contribute to an opportunity to exchange resources between several agencies. It may be an entrepreneur who has an idea but does not have the financial capital to realize this idea. Then an investor can be relevant and contribute with financial support. It can also be competence, where the contractor does not have enough knowledge about how an idea should be implemented. Here, other contractors can contribute with advice or collaborate on realizing the defined problem. This is also linked to labour since many projects are demanding and require the right skills. From the findings, we confirmed that the expertise from labour is often found in the cluster, and that it is therefore easy to look in the immediate vicinity for employees who can strengthen the work staff. It is also easier to recruit someone without the geographical aspect of relocation having to be decided upon. The authorities are also involved in this flow of resources through education. Since the university has a connection to Media City Bergen, expertise and recent graduates will also provide a natural addition to the entrepreneurial ecosystem.

The flow of financial resources is also very visible. As previously discussed, there will be different forms of financial support in an entrepreneurial ecosystem (Mason & Brown, 2014). This contributes to value creation in the cluster. The players can buy goods and services from each other, but they can also contribute to various forms of investment with each other. In Media City Bergen, both investors, entrepreneurs, institutions, and the administration are represented. The various actors interact with each other, and resources flow naturally between each other and across industries. Since start-ups often have a large capital requirement, there will be limited purchasing power compared to other companies. In the start-up phase of a company, one sees a tendency for other companies to be helpful in contributing knowledge and information, but as they get bigger, the other party often wants to get something in return for it. Here, ownership shares in the company can act as a currency for buying labour or expertise.

This means that the company gets opportunities to develop, but also that the cluster weaves itself together and strengthens itself.

In the cluster, expertise, ideas, knowledge, and information will be a strong driving force for development as they contribute to economic growth (Văcărel et al., 2009). Due to the networks the cluster allow these resources to flow inside the cluster (Mason & Brown, 2014). Keeping up to date with technology or having the right tools to solve a problem will be necessary in terms of development and competition which entrepreneurs or institutions such as the university could contribute with (Spigel & Harrison, 2018). Expertise, knowledge, and information are easy resources to share as long as the platform allows it. By participating in events or workshops in the cluster, one can exchange ideas or meet people who have knowledge of various projects. In Media City Bergen, it is planned by the administration that entrepreneurs will be introduced to new relationships. The activities and the physical facilities act as a driving force so that resources can flow between several parties through extended networks in the cluster. The dynamic between these parties depends on an organised interaction where necessary resources are exchanged in an appropriate manner. Through the findings, we see that the flow of resources in the cluster occurs continuously at different levels.

5.5 The positive effects of a cluster

There are several positive effects that can come from a cluster from what we have seen in our findings and in previous literature. As mentioned, Ketels (2003) divided the advantages of a cluster into three dimensions. The second dimension claimed that companies within a cluster can achieve higher levels of innovation because of knowledge spill-overs and the opportunity to get closer to both customers and other companies. According to our findings, this appears to be true. Most of our respondents seemed to be pleased with the knowledge sharing within the cluster and mentioned the closeness to everything as a big advantage. From what we could tell, there was a lot of information and knowledge sharing going on between the different companies and actors at Media City Bergen. According to Ketels (2003), this can be a great competitive advantage, and allows the companies within the cluster to be better put than their competitors outside of a cluster. Spigel and Harrison (2018) also support this and acknowledge the fact that the presence of other companies can lead to a competitive advantage. Therefore, our findings are consistent with the theory and the companies within Media City Bergen are able to gain more of a competitive advantage due to their closeness to other companies.

Closely related to the statements above, there is another advantage within a cluster, which is the many informal and unofficial meeting points in the building. This relates to the closeness to other companies but is also related to the culture within a cluster. Feld (2020) explains that the sociology framework is an essential part of a cluster, and this should be solid in order to lay a foundation for knowledge sharing. If there is a good foundation and a culture of information sharing across companies within a cluster, it is said that the companies can achieve better development. Therefore, the informal meeting places at Media City Bergen can contribute to a better culture for knowledge and information sharing, which can lead to better development and a competitive advantage.

Something that was mentioned a lot during the interviews was all the events and conferences that the members can get access to. This can be categorized as a resource within the cluster and is part of the resource flow at Media City Bergen. Spigel and Harrison (2018) state that such events and conferences can be very important for the companies and especially the entrepreneurs in a cluster. It is said that one can broaden an entrepreneur's social network through gatherings or events. However, there needs to be a foundation of trust in the ecosystem if the members are going to be able to get access to the resources. Therefore, this also connects to the statements above about networking and culture. There needs to be a good culture and a solid foundation of trust within the cluster for all the members to feel comfortable enough to both share and receive information. Without the trust, some might not be comfortable with participating in events or gatherings, and they might not trust the information they receive. Also, the members of the cluster would stop casually sharing information with each other if there was no trust involved. With that said, it seems as if Media City Bergen has accomplished the needed level of trust for them to have a good flow of resources and for the companies to be able to gain a competitive advantage through the resources they have access to in the cluster.

Lastly, a final advantage for Media City Bergen is related to their geographical location. According to Rocha and Sternberg (2005), the cluster can access more people when they have a well-suited location, compared to places with smaller masses of people. With this in mind it can be said that Media City Bergen has chosen a strategic location in the city centre of Bergen. Several of the respondents mentioned the location as a major advantage and compared it to places further from the city centre. They mentioned that they have access to more resources and that it is easier to get to, both for employees and customers. This supports the theory of Rocha and Sternberg (2005) in that a strategic location can attract more resourceful people, which

contributes to innovation in their field. Therefore, the geographical location of Media City Bergen can be categorized as a factor to gain a competitive advantage.

5.6 The negative effects of a cluster

According to previous literature, the negative effects of a cluster are often dependent on the culture (Mason & Brown, 2014). The information we received from our respondents gave an indication that there is a great culture at Media City Bergen. The reason for assuming this is because all of them had to dig deep to find anything negative with being a part of a cluster. Some of them could not even think of any disadvantages although they tried. However, there were five things in total that could be described as negative: (1) the lack of ability to choose the physical layout in a shared office space, (2) the responsibility to participate to experience benefits, (3) the amount of media businesses in the cluster, (4) the support for new start-ups, and (5) expensive rent.

These disadvantages are not consistent with the theory that has been presented earlier in this thesis. The cluster weaknesses presented by Rocha and Sternberg (2005), cannot be described as an effect of these minor issues. Not being able to move some desks in an office does not affect the businesses' or the cluster's innovation or ability to adjust to competition or changes in demand. Also, the responsibility to participate to experience benefits was described by the respondents as something to be aware of, more than a disadvantage. The fact that there are less media businesses in the cluster than expected may not be something negative at all. Arguably, it could be positive with more diversity in the cluster, which could boost innovation rather than impairing it. The support for start-ups and the expensive rent can be considered as a disadvantage for a smaller portion of the members, but it does not affect all. Therefore, there are probably better alternatives for those who are most affected by this. Because it does not affect the entire cluster, it probably will not impair the competitiveness and innovation of the cluster itself. It does however refer to Mason and Brown's (2014) theory about the fact that a bad culture could be not valuing the societal contribution of entrepreneurs. Then again, it was said that start-ups pay less their first few years in the cluster, so Media City Bergen try to adjust to those who are in a less favourable position economically.

5.7 The role of bigger actors

Bigger actors can make a difference for smaller start-ups by offering support and financing among other things. This was something that many of the respondents could agree to. However, financing and support from bigger actors such as Innovations Norway, was not needed for all the businesses we interviewed. Some have managed to achieve success on their own or through a different path. Spigel and Harrison (2018) claim that start-ups should use local resources, support, and financing from the ecosystem in order to become globally competitive. Therefore, one can argue that the start-ups in Media City Bergen who make use of the support and financing that those bigger actors like Innovation Norway offers, will be more globally competitive than those who do not. Furthermore, finance and support are considered to have direct impact on the development of a start-up ecosystem (Baron, 2016). This implies that a start-up can develop faster and better with the financial help and support from others. So, those start-ups at Media City Bergen who actively use the offers they receive from bigger actors, might be doing themselves a huge favour.

As mentioned previously, many of the businesses within Media City Bergen rely on bigger actors for knowledge and networking through events and conferences. Innovation Norway was brought out as one of the main contributors and actors in this field. Therefore, the bigger actors in and around a cluster can be used for more than just financing and support as mentioned above. This relates to the statements from 5.5 about the positive effects of a cluster. Spigel and Harrison (2018) claims that entrepreneurs could broaden their social network through events and conferences. So, bigger actors, like Innovation Norway, help entrepreneurs at Media City Bergen with knowledge and networking through all the conferences and events that they host. Furthermore, one can argue that a wider network and more knowledge can provide a stronger competitive advantage, and that the dynamics between bigger actors and entrepreneurs in a cluster is a driver.

6 Conclusion

Clusters and entrepreneurial ecosystems have emerged based on the desire to strengthen economic competition in an area. Through a set of activities and networking, the clusters and entrepreneurial ecosystems can generate innovation, economic growth, and job creation. Research shows how the various players collaborate with each other and communicate to achieve a competitive advantage.

The purpose of the research was to examine how the dynamics between the various players in a cluster or entrepreneurial ecosystem affect a start-up's competitive advantage. The research is based on previous research and theory on start-ups, clusters, entrepreneurial ecosystems, and the actors involved. This research is based on a case design and interviews with several actors in the cluster in Media City Bergen. In the research, that competitive advantage is linked to the elements within interactions and networking, competition within the cluster, investors, flow of resources, the positive and negative effects on cluster, and the role of bigger actors.

6.1 Theoretical contribution

This research illustrates and emphasizes previous research on clusters, entrepreneurial ecosystems, and the dynamics between the actors. Based on established theory, the research emphasizes how the dynamics affect start-ups and which actors must interact in such a network in order to use their strengths to gain an increased competitive advantage that clusters and entrepreneurial ecosystems entail.

6.2 The dynamics effect on competitive advantage

In this research, one sees how actors and the surroundings influence each other and carry out interactions with each other. How the dynamics are between the various actors directly influences the interaction. Culture will to a large extent influence how resources are shared, but also the competition and cooperation between the parties involved. An open culture leads to a greater focus on sharing than a closed culture where one looks after one's own interests to a greater extent.

This culture of sharing was something that all the respondents mentioned. The entrepreneurs had access to resources and the flow of information was good between the actors. The investors were given a wide selection of potential investment objects, and because of the network they

could easily be contacted or get in touch with start-ups that needed support. Institutions such as universities also have a close collaboration with the cluster through recent graduates who contribute with increased competence among the start-ups. The research confirmed these findings from existing theory. With great access to resources, networks, and a culture of sharing, it shows that the members of the cluster gain major competitive advantages from being a member.

6.3 Methodological limitations

Research on clusters and entrepreneurial ecosystems can have several barriers when collecting data and basis for comparison. Especially related to causality, there may be differences between clusters.

By researching this specific cluster, we can not prove whether the companies come up with better innovations than companies that do not belong to a cluster. This can also be relative as needs can be different based on geographic affiliation and market. Turnover has also not been examined, which would also be a difficult task since companies have different sizes, different life spans and may focus on different markets. Based on the data collected, we cannot say whether the businesses get a larger competitive advantage as a result of the cluster. Since the study on Media City Bergen is a single case study as the only cluster examined, this will not necessarily be representative of other clusters or entrepreneurial ecosystems.

6.4 Further research

Further research will address the methodological limitations and thus strengthen the theoretical basis. By looking at different industries in different areas, this will be able to strengthen the theories about the dynamics between the actors in clusters and entrepreneurial ecosystems and competitive advantage. Research on several clusters may be relevant to look for similarities or differences. Furthermore, companies in the same industry may be worth comparing for a deeper understanding of collaboration, competition, and networking. By obtaining a broader data base and varied methods, one will be able to obtain a greater basis for comparison and thus look for similarities both regionally, nationally, and internationally.

Based on previous research and this study, arrangements are made for verification in this context or by using several methods. With further research, the theoretical basis of dynamics and competitive advantage will therefore be even stronger.

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