Mahima Dhakal

Creating a Functioning Startup Ecosystem: Case Study Finland

Metropolia University of Applied Sciences

Bachelor of Business Administration

International Business and logistics

Bachelor's Thesis

04.05.2020

Author Title Number of Pages Date	Mahima Dhakal Creating a Functioning Startup Ecosystem: Case Study Finland 51 pages + 2 appendices 05 May 2020
Degree	Bachelor of Business Administration
Degree Programme	International Business and Logistics
Instructor/Tutor	Michael Keaney, Thesis Supervisor

The main aim of this thesis is to understand what a startup ecosystem is in practice, what it provides to startups and answer the research question "How to build a functioning startup ecosystem?" The startup ecosystem of Finland is taken as the subject for this case study in order to conduct an in-depth analysis of the ecosystem. This research is descriptive in nature. The data collection is done using a qualitative approach by taking semi-structured interviews of five active members - entrepreneurs - of the Finnish startup community. The inductive thematic method was taken for data analysis.

This study aims to provide a detailed understanding of startups, their impact and the startup ecosystems in which they develop. The main findings of this thesis points that universities, incubators and investors have the biggest impact to form a successful startup ecosystem. Additionally, this study shows that Finland's strategy to adopt a hyper collaborative startup community was helpful to succeed in becoming one of the top global startup ecosystems. The results of this study verified the claim that entrepreneurs should lead the process of building the startup ecosystem. This research provides a framework comprising all the key components along with the explanation of key role players and how they contribute in building a successful startup ecosystem. This thesis can be beneficial to all the stakeholders of the startup community who want to form a sustainable and functioning startup ecosystem in their city.

Keywords	Startup, Ecosystem, Entrepreneurship, Finland, Innovation

Contents

Appendices

List of Figures

1 Introduction

1.1 Research Background

The global startup scene is booming and many startups with new ideas and technologies are emerging every day. Approximately, 4,000 new startups commence their operation each year in Finland alone (Business Finland, 2020). Creating $2.8 trillion in value just during the period 2016 to 2018, the global startup economy is growing continuously (Startup Genome, 2019). A rare phenomenon of Unicorn startups, a startup with a valuation over $1 billion, is not so rare anymore as more than 400 startup unicorns exist as of April 2020 (CB Insights, 2020). The interest in startups is escalating and several studies have been conducted to understand startups and their impact, with the main focus on entrepreneurship.

Witnessing this increase in the startups and valuable contribution that they make to the economy, the need to build an ecosystem to foster the startups has been identified. A few decades back, Silicon Valley seemed to be the only functional startup ecosystem for a long time. However, the idea of startup ecosystem is spreading all over the world and many cities are now home to top global startup ecosystem including New York, London, Beijing, Tel Aviv, Paris, Berlin and many more (Startup Genome, 2019). Moreover, the concept of startup ecosystem is also spreading widely which has increased the existing literature in the topic. An in-depth knowledge of the startup ecosystem helps decision makers to correctly decide on their actions to build and grow the ecosystem. However, the literatures available are loosely defined and lack concrete data to provide an overview of how startups ecosystem are built. The ecosystem of Helsinki is valued at $3.4 billion (Startup Genome, 2019) but the Finnish startup ecosystem is understudied. The lack of evident research on Finnish ecosystem along with the lack of concrete information of the formation of ecosystem implies a research gap, which this research intends to fulfill.

1.2   Research objective and question

The main objective of this thesis is to understand what a functioning ecosystem provides to startups and how such startup ecosystems are built, which will be done in part by analysing the Finnish startup ecosystem. The secondary aim of the research is to explore the concepts of startups and startup ecosystem, understand the role of key players in the ecosystem, explore the components of the ecosystem and analyse the global startup ecosystems.

The research question:

> *How to build a functioning startup ecosystem?*

Sub-questions:

> *Why are startup ecosystems necessary?*
> *Who are the key players of the ecosystem?*
> *How did Finland build its ecosystem?*

The primary expected outcome of this thesis is to explore the answer to the research question, sub-questions, and make a valid conclusion based on the findings.

1.3   Research Design

To achieve the research objectives, this research is designed to be descriptive and qualitative. The main reason for selecting descriptive research method is that it will enable the researcher to describe, identify, explain, and validate research findings. Descriptive research is intended to cast light on the current issues, which is exploring the Finnish startup ecosystem, through a process of data collection that enables the researcher "to describe the situation more completely than was possible without employing this method" (Fox & Bayat, 2007:47). The data collection methods in descriptive research can be both qualitative and quantitative methods, but only the qualitative method is selected for this research (See chapter 4.1 for more details). The data analysis is conducted by using inductive thematic analysis as a part of qualitative research methods (more in chapter 4.2).

1.4 Thesis Structure

The first chapter of the thesis provides the introduction to the whole thesis, states the research gap, research question, explains the research objective, research design, and the structure of the thesis. The second chapter comprises of literature review where different definitions of relevant terms will be clarified. Existing literature related to startups and startup ecosystems will be discussed. This chapter will also attempt to form a theoretical base by finding out the key role players of the ecosystem. Moreover, in this chapter, two models of ecosystem pillars are explained, analysed, and compared.

The third chapter of the thesis explains the Finnish startup ecosystem using the theories featured in chapter 2. Finnish culture and its impact on the ecosystem will be analysed. This chapter will also explain the findings of how the Finnish startup ecosystem was built and about different people, organizations, and events that helped to shape the Finnish ecosystem. The fourth chapter describes the research methodology. The reasoning for selecting the qualitative method for data collection and approach to analysing the data using inductive thematic analysis are discussed and clarified.

The fifth chapter consists of the outcome of data analysis. The results of the data analysis, together with the literature review, will be discussed in detail, and these will be integrated with the research objective. Finally, the sixth chapter will provide a conclusion by answering the research questions and discussing the results obtained from the data analysis, literature view and presenting whether this research met with the initially set expected outcome. This chapter will also discuss the limitation of the study and state the possibility of further research on the topic. Lastly, relevant recommendations to the Finnish ecosystem will be given, which concludes the thesis.

2 Literature Review

2.1 Startup

The term "startup" is not a new word anymore and is used widely in all business sectors. Although widely popular, startups do not have one universally accepted definition. To understand its meaning, different definitions are explored in this chapter.

The traditional definition of a startup, as defined by the Oxford Dictionary, is that a start-up is ''a newly established business" (Oxford Dictionaries, 2015). Similarly, the Cambridge dictionary defines a startup as ''the act or process of starting or making something start," which refers to starting a new Business (Cambridge Dictionaries, 2015).

But the definition has changed over the years, and a startup is no more just a recently started small business. As defined by Eisenmann et al. (2011), a new venture is not always a startup unless the main purpose of its creation is to launch new products in the market. For Blank (2007), the main objective of startups is to find a business model that is repeatable and scalable.

If a person starts a new restaurant business or acquires a franchise, then it is not a startup as the business is not high-risk or has the scalability of a startup. Moreover, if the company has a market and a business model from day one, like restaurants and franchises, then it cannot be called a startup. Reis (2010) describes startups as a human institution designed to perform under conditions of extreme uncertainty to create a new product or service. Similarly, Christensen and Bower (1995) compare successful startups as disruptive technologies as they perform under extreme uncertainty and are good at quickly changing product and market strategies to adapt, grow, and conquer the market. The researcher also agrees with the definition given by Reis (2010) and Christensen & Bower (1995) as it defines the current world of startups comprehensively.

A tech-startup is a startup that uses technology (new or revised) to bring products or services in the market to solve a problem (Guzzetta, 2016). Due to the massive growth and spread of digital technology, most of the startups that we see or hear of today are

tech-startups. Startups, especially tech-startups, are significant sources that help to spark innovation, aid to increase productivity, and provide more employment opportunities (World Economic Forum, 2015). The 3rd Industrial revolution (Digital Revolution) and the current, 4th Industrial revolution (AI, Robotics, Internet of things, 3D printing, genetic engineering, quantum computing, etc.) is bringing disrupting changes in all industries due to which more startup nowadays are tech-based (McGinnis, 2018).

Facebook, Airbnb, SpaceX, and Uber are the example of some of the most popular and successful startups (tech-startups) that are now startup graduate/mature companies.

Tesla Motors, founded in 2003, was still considered to be a startup even after more than ten years of its establishment due to its continuous innovation and lack of profitability as Tesla has never reported annual profit even after generating $24.6 billion in revenue in 2019 (O'Kane, 2020). As "startup" has many different definitions, the point where a company stops being a startup and transforms into a mature company or startup graduate also depends on various factors such as scalability, profitability, product-market fit, communication, and innovation (Winn, 2018). The time frame taken for a startup to turn to a mature company also depends on the industry in which the startup operates.

2.1.1 Dotcom Bubble

The use of the word "startup" grew dramatically in the 1980s, as shown in Figure 1 below.

Figure 1. Analyzing the apparition of the term "startup" in books published from 1900-2008 (Ngram View, 2013)

The popularity of the word "startup" grew in the late 1980s. One of the reasons for this rise in popularity was the arrival of the dot-com business in 1990. The internet was commercialized in 1990, which led to a rise in many internet-based startups and companies. Most of these companies operated through a website (using domain ".com") and thus, are called dot-com businesses (Kagan, 2019). Many investors and VC companies invested large amounts of money into internet startups during the 1990s with the hope that companies would become more profitable with the increasing use of the internet. Many companies were overvalued due to this speculation that the internet would improve the company's productivity and increase their expected profits, which led to the dotcom bubble (Kohn & Pereira, 2017).

The dot-com bubble brought a rapid rise in technology stock equity valuations during 1995-2000, and the Nasdaq index had risen by five-folds (Kagan, 2019). The dot-com bubble burst in 2001 and through 2002. From March 10, 2000 to Oct 2, 2002, the Nasdaq index fell by 76.81%, from 5048.62 to 1139.90 (Kagan, 2019). Many dot-com businesses went bust during that time. Amazon, eBay, Priceline, and Shutterfly were some of the startups that survived even during and after the dot-com bubble (Seitz, 2015). During the period of dot-com bubble, the rise and fall of dotcom business and startups, the concept of startup, especially technology-based startup or tech-startup, began to spread widely.

2.2   Startup ecosystem

2.2.1   Definition

Encyclopaedia Britannica (2020) defines a biological ecosystem as the complex community of living organisms, their interrelationships with both living and non-living elements of their physical environment, and how they interact with one another. In the business field, there are various concepts of an ecosystem. Mäkinen & Dedehayir (2012) explain that the business ecosystem is a complex ecosystem comprising of interactions and collaboration between companies to provide value for service users and clients. The innovation ecosystem, as defined by Jackson (2011), is the ecosystem comprising of institutions and other diverse actors that enables technological development and innovation.

Metropolia
University of Applied Sciences

Similar to the business and the innovation ecosystem, where the ecosystem deals with various stakeholders to create business and innovation, respectively, the startup ecosystem's primary aim is to create new startups.

Aleisa (2013:5) states that a startup ecosystem is a collective society with all entities that interact and assist each other with a common goal to increase the value of a startup. Cervantes & Nardi (2012) describe the term ecosystem, as used by the startup community, as a network of all key role players of the ecosystem (people and institutions) and resources needed to build startups. Similarly, Startup Commons (2018) states that a startup ecosystem is an interactive system comprising of people, startups, and different organizations in a physical or virtual location to facilitate new startup companies. Tripathi et al. (2018: 66) explore various definitions of the term "startup ecosystem" and concludes that a startup ecosystem involves different stakeholders and supporting organizations, who collaborate in the environment of a particular region to form new startups and provide momentum to the existing ones.

2.2.2   Why is it necessary to build a startup ecosystem?

It is important to understand why it is necessary to build a functioning startup ecosystem before exploring how to build a startup ecosystem. The researcher could not find any research opposing the claim that startup ecosystems are necessary for startups.

> Left to their own devices, these nascent companies with scarce resources, both in terms of money and knowledge, are highly unlikely to be able to compete against more established entities in their target markets. Ecosystems can also explain why so many successful startups have originated in academically and economically strong areas such as Silicon Valley or Singapore (Aalto Venture Program, 2019: para. 3).

The statement that nine out of ten startups fail might not be mathematically exact, but it shows the picture that many startups do fail (Griffith, 2014). Startups are volatile, and most startups fail (Startup Genome, 2019). When startups come in contact with the ecosystem, it is possible to lower the rate of failure. When one active startup within the

ecosystem fails, other startups can learn from the experience and save themselves from repeating the same mistake that would lead them to failure (Aalto University, 2020).

The need for the ecosystem is not only limited to the survival of startups but also involves growth, operation, and the reach of startups. In this era of globalization, appealing to not only local but also global consumers help the startup to expand its operations. Foreign investors evaluate not only the startup but also the ecosystem in which the startup operates (FiBAN, 2018).

Mason and Brown (2014), in their paper for the OECD LEED program, state that the startup ecosystem is the best means to increase the number of high growth firms. Devireddy (2018), in her article for *Entrepreneur India*, states that a functional and supportive ecosystem can generate successful startups. Startups are important as they can help to spark innovation, create competition and can build transformative companies with exceptional technologies which, in turn boost economic growth (Aleisa, 2013: 7). Moreover, startup ecosystems also have a significant economic impact, as they increase domestic product development and create new employment via startups or within the ecosystem (Tripathi et al., 2018: 66). A functioning ecosystem ensures the flow of ideas, knowledge, talent, and resources within the ecosystem (Singh, 2018). If the ecosystem in which the startup is rooted thrives, it will be easier for the startup to flourish and achieve its goal faster.

2.2.3   Key role players of the Startup ecosystem

To create a startup ecosystem that can survive and thrive for decades, it is important to understand who the participants are of the ecosystem, what roles do they play, how does their roles contribute to the formation of the ecosystem, and provide a platform to improve, grow and strengthen each key role player.

Feld (2012, ch. 4) divides all key participants into two roles: leaders and feeders. Entrepreneurs are the leaders of startup communities, and everyone else, including government, universities, investors, mentors, incubators, service providers, and large corporations act as feeders. Cervantes and Nardi (2012) also state that the startup

ecosystem includes diverse entrepreneurs, funding institutions (private or governmental), large companies, and universities.
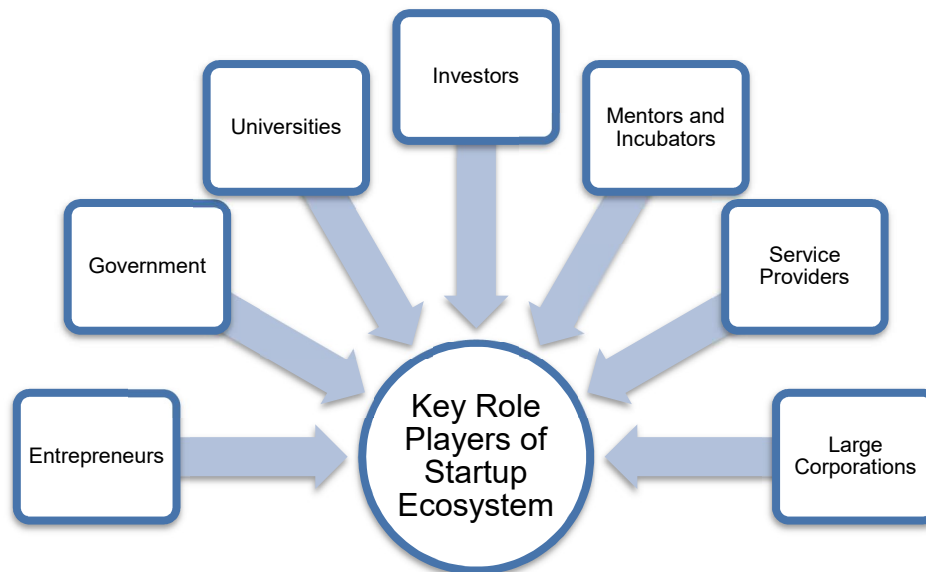
Figure 2.   Key Role Players of Startup Ecosystem

As shown in Figure 2 above, all key players have their different roles in the ecosystem.

Entrepreneurs: Entrepreneurs, those who want to or have their own startup business, are the leaders and primary members of a startup ecosystem. "….Absence of entrepreneurs as leaders, or the overwhelming leadership by feeders, will doom a startup community" (Feld 2012, ch.4). The role of entrepreneurs is crucial in forming a viable ecosystem. Without the presence and active role of entrepreneurs, there will be no formation of a new startup and existing startups will not be able to scale in the ecosystem which defies the ecosystem's main goal (to facilitate new and existing startups). Entrepreneurs understand the need for a new startup better than any other stakeholders in the ecosystem and should take the lead to shape their ecosystem in the way that best suits the startup community.

Metropolia
University of Applied Sciences

Government: Government and Startups fall on the opposite ends of a spectrum in terms of how they function as an entity. The government, on one hand, goes by the rules and is restricted by many bureaucratic processes, while startups on the other hand, function in a highly unstable and risky environment, constantly innovating and adapting themselves to survive and grow (Poon, 2018). Nonetheless, the role that government plays to build and grow the startup ecosystem is critical. Government plays an important role in strengthening the efforts of all other key role players and by giving equal access to information (Acharya & Dixit, 2019) Moreover, Government can also develop a startup culture in the city, or nation and de-risk the entrepreneurial challenges by providing different schemes of funding, creating better policies, reducing the tax burden, having a better infrastructure to support the ecosystem and making the ecosystem globally accessible (StartupBlink, 2019; Startup Commons, 2018). StartupBlink (2019) has ranked over 900 cities in terms of their startup ecosystem and claims that government-supported ecosystems are ranked higher and their rank keeps increasing, compared to the ecosystems where there is less support from the government's side.

Universities: Most of the successful startup communities in the world are located close to at least one major University. Universities help the startup ecosystem to grow by providing students, professors and technology transfer office, making research labs accessible, and promoting entrepreneurship programs, which are all relevant to build a startup ecosystem (Feld, 2014, ch.4). The education system also plays an important role for innovative ideas to bloom. The study by Markham et al. (2016) shows that lack of education, necessary entrepreneurship knowledge, skilled and experienced entrepreneurs in the community, the startups face many challenges which can lead to the failure of a startup. Another valuable contribution of Universities for the ecosystem is providing entrepreneurship courses to attract young minds towards entrepreneurship and eventually to the startup ecosystem. Many universities also have student entrepreneur societies which act as a pull-factor to invite students into the startup ecosystem (Ong, 2018).

Investors: In his article for *Forbes*, George Deeb (2019) states that "The best ideas and the best talent are useless without the capital to fund their vision." Marjo Ilmari, executive director at Business Finland, explains that entrepreneurship drives economic growth, and for entrepreneurship to grow, it requires basic investment (Ong, 2018). To turn any

idea into reality, funding is very important. Startups should ensure that they have enough funding to operate and run the business before they generate their first profit. This is when investors play a role in supporting the startup ecosystem. Presence of enough public funding, angel investors, venture capital firms, private equity firms, and other forms of funding, make it easier for an entrepreneur to start a new venture. However, investors should not only be present but also accessible.

Incubators: A startup incubator is a facility that provides entrepreneurs with the necessary support needed to run their business smoothly, such as affordable workspace, shared offices, peer support, seed funding, mentoring, and training (Business Dictionary, 2020). Willson (2019) writes in her blog that "the sole purpose of a startup incubator is to help entrepreneurs grow their business." Incubators not only help to facilitate startups but also provide a community with many startups where they can interact with one other, solve each other's problem using the expertise and resources available, expand business networks and motivate each other. The benefit of incubators is not only limited to providing physical facilities but also different scopes of collaboration, knowledge sharing opportunity within the community, different trainings to boost skills, mentoring programs, etc. (Maria 01, 2019; Aura Bear, 2019). Incubators also help to reduce the basic cost of being an entrepreneur. During the initial stage, every penny counts, and saving basic costs can mean having more money to fund the operations. Saltzman (2018) explains in his article for *Entrepreneur Europe*, that it is important for incubators to understand the balance between support and autonomy given to entrepreneurs Incubators should shape startups by providing enough support to entrepreneurs and improve the startup environment, but at the same time, give freedom to the entrepreneurs to pursue their passion, express their ideas and creativity.

Mentors: Along with incubators, mentors play a big role for any startup to turn into a successful mature company. Feld, in his book *Startup Communities* (2012, ch. 4), describes mentors as "…experienced entrepreneurs or investors who actively contribute time, energy, and wisdom to startups and can be a key part of a startup community." Mentors are different from business advisors or consultants, as consultants provide their service in exchange for economic gain. In contrast, for mentors, the aim is to share the knowledge and help the community without primarily expecting any monetary value or rewards. The availability of mentors in the ecosystem firstly, helps entrepreneurs to ask

questions from experienced leaders in the field and increases the growth pace to move forward in the learning curve. Secondly, it decreases the chances of making the same mistakes as their forerunners, which then decreases the chances of failure of the startup (Deeb, 2019).

Service Provider: Entrepreneurs need investors and mentors to run their business operations smoothly. However, there is another key role player in the startup ecosystem who are often hidden and not talked about: Service Providers. Service providers can be a company or individual consultant who assists the startup community with their work. No entrepreneur can be an expert in every field, and it is important for entrepreneurs to build a good relationship with service providers (Kawtharani, 2017). External consultants, lawyers, accountants, recruiters, contract CFOs, etc. are some examples of crucial service providers that startups need from the early stage. The availability of good service providers in the ecosystem helps to lower the barriers for an entrepreneur. The best service providers provide their time and service for no charge in early-stage companies to build a good and long-term business relationship with the startup (Feld, 2014, ch.4). At the early stage, most startups are not able to hire a full-time CFO, accountant, lawyers, HR professional, recruiter, or any other professional help (Kawtharani, 2017). Hiring an external service provider can also be costly to new businesses. Many service providers, especially lawyers and accountants, provide their service on a pro bono basis to assist the startup community. This helps both entrepreneurs and service providers to build a professional network.

Large Corporation: Large corporations are important and unconventional part of a startup ecosystem as they provide both direct and indirect help to the startup community. One of the main direct impacts is funding that large corporations provide to startups. Feld (2012, ch.4) points out two main ways that large corporations have an impact on the startup ecosystem. Firstly, they can provide space and resources for free or low cost to startups, as Google and Microsoft have done. Secondly, large corporations can, encourage entrepreneurs to build their startup in a field that will enhance the business of both startup and large corporations, and also be potential customers of some startups, especially in the tech field where large corporation outsources some projects to startups. For some startups, large corporations also act as an exit point as some entrepreneurs sell their startups to large corporations and change their status from startup to mature

companies (Desjardins, 2018). All startups need to keep a healthy relationship with large corporations that have similar goals and interests in mind, as large corporations have helped startups to grow and startups can help large corporations to be up to date with the latest innovation and their market reach (Deeb, 2019).

2.2.4 Components of the Startup ecosystem

In this section, the researcher compares two models of entrepreneurial ecosystem components with key role players mentioned in the previous section 2.2.3. to better understand the foundation on which the startup ecosystems are built. The components are referred to as both foundation and pillars of the startup ecosystem.
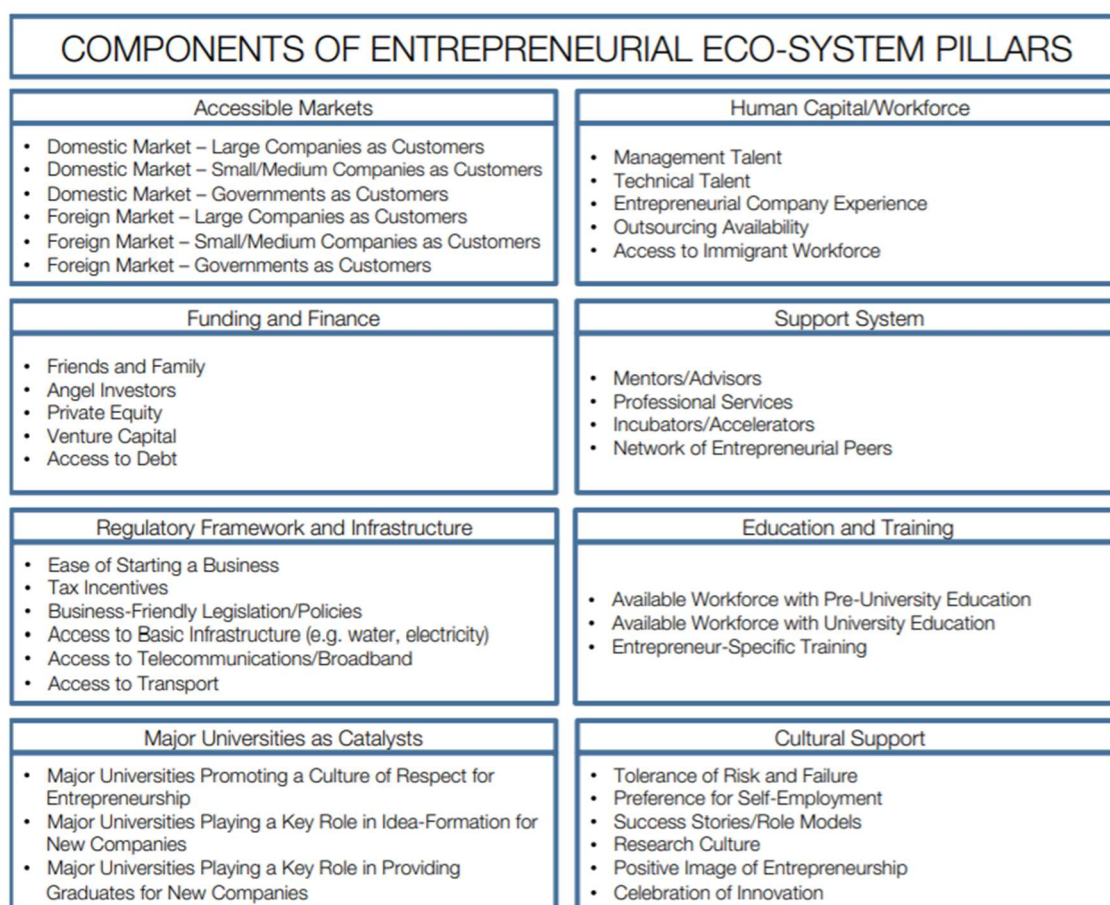

Figure 3.   Components of Entrepreneurial Eco-system Pillars (World Economic Forum, 2013: 7)

As illustrated in the figure 3 above, the first model consisting of the components of startup ecosystem pillars is derived from the study done by the World Economic Forum (2013:6-7). This model comprises of 8 major components on which a startup ecosystem is built, which are accessible markets, human capital, funding & finance, support system, regulatory framework & infrastructure, education & training, major universities as a catalyst and cultural support. Each component has a different sub-component that supports the functionality of the main component. When the key role players (see section 2.2.3), and this model of components of startup ecosystem are compared, we see that funding & finance, support system, major universities as catalyst, education & training, and regulatory framework & infrastructure come under both key players and components with some additional sub-components.

This study by World Economic Forum (2013), a survey conducted to 1042 entrepreneurs and individuals with experience in startups from 43 countries all over the world, concluded that out of 8 components, entrepreneurs view accessible markets, human capital/workforce, and funding & finance as three quintessential components when it comes to the growth of their startups. However, the interaction and presence of all components are necessary to form a startup ecosystem.

The second model is given by Tripathi et al. (2018: 66-70), where the key components in the startup ecosystem are explored.
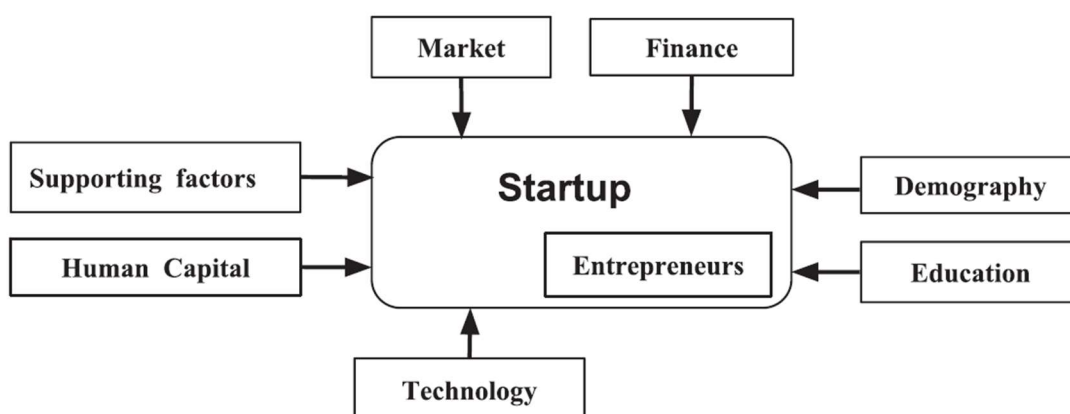

Figure 4.   Key components in a Startup ecosystem (Tripathi et al., 2018: 71)

As the above figure 4 illustrates, this model explains the key components of the startup ecosystem. However, in contrast to the first model by World Economic Forum, in this model, startup and entrepreneurs are also taken into account to be the central focal point of the ecosystem where entrepreneurs are the subset of a startup. Along with Entrepreneurs, other key components discussed in this model are support factors, finance, demography, market, education, human capital, and technology. All the key components interact with the startup in the leadership of an entrepreneur to form a startup ecosystem. Furthermore, each key component comprises different sub-components.

Entrepreneur	Support Factors
• Entrepreneurs	• Incubators • Accelerators • Co-Working Space • Events • Government • Legal Framework • Media • Mentors
Finance • Funding • Established Companies • Seed Investment • Venture Capital • Bank • Crowd Funding • Government	**Demographics** • Cultural & Language • Gross Domestic Product • Geography • History • Society • Immigrants
Market • Local Market • Global Market • Customer • Economic	**Education** • Education • Educational Institutiom • Accelerator & Incubator • Experience • Media • Family
Human Capital • Talent • Education • Accelerator & Incubator • Experience • Government • Young Talent • Policy	**Technology** • Technology • Education • Established Companies • Founders • Industry • Geography • Innovation • Product

Figure 5. Key Components and their sub-components

As shown in figure 5 above, all sub-components contribute to their main components. For example, the sub-components such as understanding of the local market,

accessibility of global market, power and role of customer and economic condition, all play a vital part to form a market for a startup ecosystem (Tripathi et al., 2018). Not all sub-components are unique as some sub-components like education plays a vital role in both technology, human capital, and the education itself. All the key role players mentioned in the previous chapter act as sub-components of one or more components of the startup ecosystem. A good understanding of the sub-components aids in the formation or development of a strong component, which again aids the formation of a sustainable startup ecosystem (Tripathi et al., 2018).

Accessible market, human capital, education and trainings, finance, and support factors are the five components of the startup ecosystem that both models have highlighted. Other additional elements that both models have added are Entrepreneur, Demography, Technology, Regulatory Framework and Infrastructure, Major Universities as Catalyst, and Cultural Support. Combining all the elements of both models, the ecosystem would have 11 key elements which acts as the pillars of the ecosystem.

2.2.5   Silicon Valley

The dotcom business acted as a catalyst for the concept of the startup and startup ecosystem to spread (as mentioned in the section 2.1.1). However, it is Silicon Valley, the top ecosystem of the world, that is known as the birthplace of today's information technology start-ups or tech-startups (Steiber, 2016:51). Silicon Valley is a region in the South San Francisco Bay Area that serves as the headquarters of many technology companies and technological innovations. Ester (2017:22) describes Silicon Valley as "a magnet for high-tech startup entrepreneurs who want to excel, and its business climate is based on a unique combination of talent, ideas, creativity, competitiveness, perseverance, and passion" as it has the highest concentration of the startups in the world today (approximately 19,000).

Silicon Valley received its name from the silicon-based microprocessor, integrated circuit, and semiconductors, which were developed in this region between 1939 and early 1980s (Bernard, 2017). Despite facing the dot-com bubble and also the global economic crisis of 2007-08, the ecosystem of Silicon Valley has transformed tech-industry, diverted the focus to high-growth startup firms, and provided an environment to foster startups

that have turned into some of the wealthiest companies in the world (Kushida, 2016). The list of the ten largest global companies in 2018 was dominated by tech companies, with seven out of ten largest companies being technology-based and three of those originating from Silicon Valley (Startup Genome, 2019:11). Many trend setting hardware and software companies like HP, Shockley Semiconductor Labs, Xerox, Intel, Oracle, Yahoo, PayPal, etc. were founded in Silicon Valley (Amadeo, 2019). The Valley now serves as the headquarters of many world-renowned tech-companies like Apple, Facebook, Google, LinkedIn, Salesforces, etc. (Ester, 2017:22). However, there is a shift in the global startup ecosystem now.

> Instead of one new centre or two new centres (of entrepreneurship, besides Silicon Valley), there will be 30, and there will be clusters in different places that don't quite get to the density of the Bay Area but get beyond critical mass (Altman Quoted in Startup Genome, 2019: 12).

Although Silicon Valley is still the largest ecosystem, other ecosystems are catching up. Startup Genome (2019:12), states that instead of having one giant ecosystem which is Silicon Valley, we are seeing budding hubs, the top 30 global ecosystems, distributed around the world, interconnected to each other and forming a global startup ecosystem. This could lead the world to have a complex, hyperconnected ecosystem, where each top 30 ecosystems act as a branch ecosystem that not only caters to the local needs but acts as a part of one global ecosystem.

2.3   Culture and Innovation

Merriam-Webster dictionary defines culture as a collection of norms, beliefs, moral-ethical values, and material traits of a racial, religious, or social group. Kluckhohn (1951: 86) defines culture as the "… patterns of thinking, feeling and reacting, acquired and transmitted mainly by symbols, constituting the distinctive achievements of human groups, including how to make the products; the essential core of culture consists of traditional ideas and values associated." Culture, as defined by Hofstede (2001), is a collective architecture of the mind that differentiates the members of one group from another category of people where "category" can mean a group, society, organization,

or country. Culture influences every aspect of human development (National Research Council and Institute of Medicine, 2000:3). Culture is what unifies people, gives the feeling of belonging, and also makes each individual unique (Cohen, 1978).

Cultural diversity helps to boost creativity among the people, and creativity leads to innovation (Abudheen, 2015). Entrepreneurs and entrepreneurial activities are influenced by many formal and informal factors, where culture acts as one of the key informal factors for the development of entrepreneurship (Castillo-Palacio et al.,2017: 15). Culture acts as a moderation to influence an entrepreneur's intention (Cristina and Dwayne, 2009). Sajjad et al. (2012: 4-5) conclude, in their research about the impact of culture on entrepreneur intention, that culture influences entrepreneur's intention and decision making. Chakraborty et al. (2015) argue that the culture of entrepreneurship can be used, to some extent, to explain the variance in economic development across different nations.

3   Finnish Startup Ecosystem

3.1   Finland's Culture

As described by Global Business Culture (2017), Finnish culture is a cultural enigma. Finland is a Nordic country that shares more similarities in its culture with its Scandinavian neighbour and fewer similarities with its Slavic neighbours (Jacobsen, 2015). In this section, the culture of Finland is explored and compared to the culture of the United States, the country of Silicon Valley, using 6-Dimension Hofstede's Model, where a country is given a score for power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence. The score scale is between 0-100, where a score under 50 signifies a low score received by the culture on that scale and a score exceeding 50 signifies a high score received by the culture on that scale.
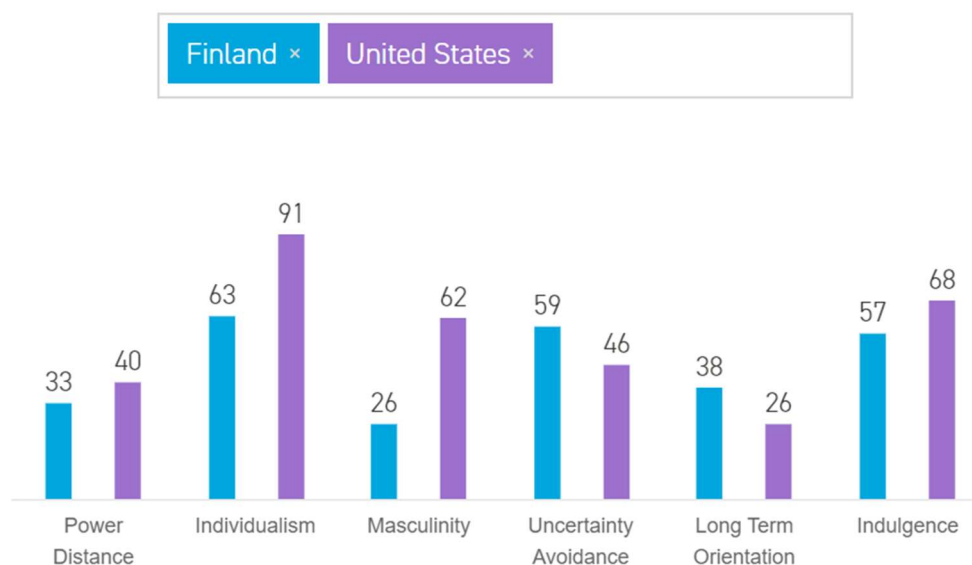
Figure 6.   Culture of Finland and the United States through 6-D Model (Hofstede Insights, 2020)

As the above figure demonstrates, the United States scores low (score of 40) on power distance, but it is fairly higher than the score of Finland, which scores 33, which means power is more decentralized in Finland than the US and control is disliked. The Finnish nature is characterized by being independent, advocates equal rights, and hierarchy is present only for convenience. Communication and attitude towards managers are direct, honest, informal, and participative, which allows everyone in the team/organization to express their ideas. (Jacobsen, 2015; Hofstede Insights, 2020).

Finland scores 63 in individualism, which shows the individualistic culture of Finland as they prefer to be independent and look after their immediate family only. The US, however, scores 91, which denotes a very high individualist trait. The individualistic trait is also consistent with hiring and promotion decisions being merit-based. (Hofstede Insights, 2020)

Hofstede has categorized countries in terms of what motivates people in that culture, where wanting to be the best signifies masculine culture, and liking what you do signifies feminine culture (Hofstede Insights, 2020). A masculine culture is competitive, success-oriented, and materialistic. The US scores 62 on masculinity, which reflects the American success-driven competitive culture. Finland scores 26 on masculinity, which means

Metropolia
University of Applied Sciences

Finland is a feminine country where the main focus is well-being. The display of success and status is not favoured. The Finnish culture measures success in terms of quality of life and leans toward flexibility, healthy relationships, and harmony. (Hofstede Insights, 2020)

With a high score of 59 on uncertainty avoidance, Finland shows a high preference for avoiding any uncertainty or unknown situations as opposed to the US, which scores a relatively low score of 46. American culture displays more acceptance for new ideas and innovation as compared to Finland, who tends to prefer security and certainty. This trait also highlights punctuality, precision, and emotional need for rules in Finnish culture (Hofstede Insights, 2020).

Finnish culture scores 38 for long term orientation, which indicates their normative behaviour: respect for traditions, preference to maintain norms, and views societal changes with skepticism. American Culture scores lower, a score of 28, which indicates strong normative behaviour with a fixed idea of what is considered "good" and "bad" (Hofstede Insights, 2020).

For indulgence, the extent to which the culture is indulgent or restraint, Finland scores a high score of 57, which makes Finland an indulgent country which is similar to the US, which scores 68, stating work hard and play harder. Both American and Finnish society does not hesitate to express their desire to enjoy life and possess an optimistic characteristic.

3.2   Introduction of the Startup ecosystem in Finland

Startups and entrepreneurship are not a new phenomenon in Finland anymore. Rovio (famous for its game Angry Birds), Supercell (famous for its game Clash of Clans), and Wolt are some of the most renowned Finnish startups which have defined the startup scenario in Finland. From a handful of startups in the 1990s, Finland now has around 4,000 startup companies that are starting their operations each year (Business Finland, 2020).

Finland has not only given birth to renowned companies but also to worldwide known startup-community ventures like Slush. Founded during the global economic crisis of 2007-08, Slush played an important part in attracting many entrepreneurs and investors into Finland and making the Finnish startup ecosystem more accessible and interconnected globally. It was during the time of crisis that many ventures started in Finland. Arctic startup, Helsinki Open Coffee, Slush, and Aaltoes were all founded between 2007-2008 (Kaufmann, 2018). The main aim of all these ventures was to provide a platform or community where people could come to network, connect, share, and build a bigger ecosystem that Helsinki is today.

> Helsinki's ecosystem is unique through its connectedness and ambition level. World-changing solutions are born out of encounters, joint efforts, and quick experiments, and Helsinki offers a functional and attractive platform for this. (Startup Genome, 2019:115)

The main startup ecosystem in Finland lies in the Greater Helsinki area (metropolitan area, including Helsinki, Vantaa, Espoo, and Kauniainen). The startup ecosystem of Greater Helsinki, with its strength in AI, Big Data & Analytics sector, falls under the top 10 Global Ecosystem for Connectedness and top 20 for the Gaming industry (Startup Genome, 2019). The Finnish ecosystem is thriving as a challenger Startup Ecosystem and could be the next ecosystem to challenge the top 30 global ecosystems (Startup Genome, 2019:34).

Metropolia
University of Applied Sciences

Challenger Startup Ecosystems	Country	Continent
Greater Helsinki	Finland	Europe
Hangzhou	China	Asia-Pacific
Jakarta	Indonesia	Asia-Pacific
Lagos	Nigeria	Africa
Melbourne	Australia	Asia-Pacific
Montreal	Canada	North America
Moscow	Russia	Europe
Mumbai	India	Asia-Pacific
São Paulo	Brazil	South America
Seoul	Korea	Asia-Pacific
Shenzhen	China	Asia-Pacific
Tokyo	Japan	Asia-Pacific

Figure 7. List of cities who are Challenger Startup Ecosystems (Startup Genome, 2019)

As noted in figure 7 above, Greater Helsinki has established a cohesive ecosystem. The ecosystem of Helsinki is strong and powerful enough to challenge the top 30 global ecosystems of the world and is thus categorized in the *Global Startup Ecosystem Report* by Startup Genome (2019), as a challenger startup ecosystem. Greater Helsinki ranks at the same level as Montreal, Seoul, Tokyo, and Mumbai, where the population and resources are many times higher than that of Helsinki (WorldOMeter, 2020).

3.3   Key role players of the Finnish startup ecosystem

With 5.5 million population as a whole and only 1/3 of that population in Greater Helsinki region, Finland did not have all the required capital, talent or resources that would make it possible for Greater Helsinki to be at a comparable level of successful ecosystems like Silicon Valley, New York, Singapore, London or Berlin. However, in the recent decade, the Finnish ecosystem transformed from a small community in Helsinki into a high-functioning global startup hub. Aalto Venture Program (2019) points to a particular reason for the success of the Finnish startup ecosystem, "Hypercompetition to Hypercollaboration." While most ecosystems thrive by extracting the best candidates in

Metropolia
University of Applied Sciences

every aspect of the ecosystem and endorsing a hypercompetitive environment, Finland has adopted a more inclusive policy and promotes the environment of hyper collaboration where collaboration and teamwork help to compensate for the lack of resources and talent. (Aalto Venture Program, 2019)

Tommi Lehtonen, CEO at Blueprint Genetics, cited by Good News Finland (2018), says that the ecosystem of Helsinki has evolved rapidly in just the last decade. To understand how the Finnish ecosystem has evolved, the researcher will explore the key role players: leader and feeders (mentioned above in section 2.2.2) and their impact on the Finnish startup revolution.

3.3.1 Entrepreneurs

Before 2007, Finland didn't have a well-defined startup community but instead had many different ventures, events, and companies which brought audiences of specific interests together, mostly in the field of digital art, games, graphics, and mobile. Starting from the 1990s, numerous hackathons or demoscenes became popular in Finland, including Assembly Computer Festival and Alternative party. Assembly Computer festival was founded by John Kavaleff, who organized the first event, collaborating with few other demoscenes groups. Markus Kantonen (Founder of Fleetonomy.ai) and Jussi Laakkonen (Co-Founder of Applifier) later joined the movement to make the festival into the global event it is today. The first Assembly computer festival, which gathered around 700 visitors for a 3-day gaming event, has now become a bi-annually run top global event with more than 25,000 visitors and 200 volunteers (Assembly Winter, 2020).

Along with Assembly computer festival, Finland witnessed many tech-growth companies like Hybrid Graphics and Remedy in the early 1900s. The budding demoscenes of Finland, which was a small attempt at the beginning by Finnish entrepreneurs, has now helped to show the path for the Finnish ecosystem to be more tech driven. Aula community in Helsinki, which was an urban living room for the networked society, was set up by six entrepreneurs who later individually founded or co-founded Jaiku, Now Office, Moves, Hybrid, and Dopplr (Kaufmann, 2018).

Some of the early startup communities were founded by entrepreneurs who later founded their own startup or became investors. This led to a cycle of ecosystem development in Finland in the leadership of entrepreneurs. Slush is another best example where entrepreneurs have influenced the cycle of ecosystem development. Slush is the brainchild of many entrepreneurs working together. The same entrepreneurs have founded more companies after Slush, with the help of Slush and its networks, which created a wave of startup and entrepreneurship in Finland. Blok, Wolt, Singa, Bou, Work Ahead, Wave Ventures, Inklussiv and Hello Ruby are some of the examples of companies founded by Slush Alumni (Turula, 2019).

Turula (2019) quotes statistics by Global Entrepreneurship Monitor, which states that a fifth of Finnish people under the age of 25 aim to start a company in the next three years. The few early entrepreneurs, who continued to establish one startup after another in the Finnish ecosystem, meanwhile recruiting many people into the startup scene, helped to ease the idea of becoming an entrepreneur in Finland.

3.3.2 Government

Due to Finland's history of war, harsh weather, and lack of resources, Finnish society has always been risk-averse (Hofstede Insights, 2020). The government policies has played a crucial role, in shifting the nation's risk-averse culture towards entrepreneurship, risk-taking, innovation and in developing a startup culture in Finland (Chakraborty et al., 2015). The first action by the government that makes Finland unique is the approach that Finland has to education. The Yidan Prize Foundation (YPF)'s Worldwide Educating for the Future Index (WEFFI), ranked Finland as number 1 in both 2018 and 2019 among 50 economies, for providing the best future-oriented skills and education for youth through its teaching environment, access to technology, policy and innovation in education (Gunawardena, 2019; Good News Finland, 2019; Yidan Prize, 2020).

Finland is unable to make the best use of all of its natural resources due to its harsh climate and, thus, took the challenge to develop and utilize the intangible resource to prosper: Education. Finland has not only given priority to quality education but has also made it free of cost and accessible. Finland is growing as a knowledge economy where "growth streams from innovation and is based on the use and creation of knowledge,

rather than mere exploitation of natural resources..." (Ali-Yrkkö et al. 2017:66). The investment that the government has made in education is reflected in the society where people are not afraid to take leadership and be innovative.

The government has also played a huge role in developing an entrepreneurial mindset in Finnish society by de-risking entrepreneurial actions (Ong, 2018). One key act by the Finnish government to de-risk entrepreneurship is to provide startup grants. The startup grant ensures the income of an entrepreneur, approximately €700/month for a maximum of 12 months, which gives time for the entrepreneur to set up the business and run it without having to worry about monthly income (TE-palvelut, 2020). Tekes (Finnish Funding Agency for technology and Innovation) and Finpro, combined to form Business Finland, which is a government venture, which provided funding to 820 Finnish startup companies from its innovation fund in 2017 alone and 150.8 million euros of funding for early-stage companies (Business Finland). Both the Startup grant and availability of public funding in early stage has helped to lower the entry barrier to become an entrepreneur and join the startup community in Finland.

The Talent Boost Program and Helsinki Business Hub are other examples of the government initiative to help attract international talents and investors (StartupBlink, 2019). Moreover, the Finnish Government has also introduced a new type of residence permit called the Startup Residence Permit in 2018 to attract international entrepreneurs in the Finnish startup ecosystem and has also simplified the application process as well as the processing time of the residence permit (Ministry of the Interior, 2017).

3.3.3 Universities

In Finland, the major role universities played to enable a successful startup ecosystem was represented by university students of Aalto University who formed the Aalto Entrepreneurship Society in 2009, known as AaltoES (Aaltoes, 2019). After a trip to top Universities in the US, three students from Aalto University saw the need to have a student-run entrepreneurship society in Finland, which gave birth to AaltoES. AaltoES is now the most active and largest student-run entrepreneurship community in Europe (Aaltoes, 2019; Kauffmann, 2018). Another student movement was Slush. Miki Kuusi, the former CEO of Slush, describes Slush as an extension of AaltoES on a bigger scale

(Turula, 2019). Slush was staffed mainly by student volunteers from AaltoES during its first few events. Even today, the main Slush event in Helsinki is organized with the help of 2000+ volunteers mainly comprising of University students (Slush, 2020).

AaltoES brought a boom in student entrepreneurship society and inspired students, almost all over Finland in every major University, to create their own entrepreneurship society including Boost Turku organized by students of Turku School of Economics, MetropoliaES, HankenES, HelsinkiES, TampereES, OuluES, KuopioES and JyväskylaES (Kauffmann, 2018; Ong, 2018). This not only gave birth to student entrepreneurship movement but also started spreading awareness about entrepreneurship in universities and media all over Finland. AaltoES's growth, from a few students to an annual budget of between 500k to 800k euros, has helped to direct Finland's attention towards entrepreneurship (Ong, 2018).

In addition to the role of students, the universities have also added more entrepreneurship courses including Aalto Ventures Program by Aalto University and one or more entrepreneurship courses/degrees in almost all universities (Aalto Ventures Program, 2019). This has made it possible for an interested entrepreneur in Finland to take part-time, full-time entrepreneurship courses or take open university and enhance a specific skill related to their field.

3.3.4   Investors

Finnish Business Angels Network ry (FiBAN) and Finnish Venture Capital Association ry (FVCA) collected statistics about the Finnish startup ecosystem which showed that early-stage growth companies in Finland raised 479 million euros in 2018, which is the highest amount of funding ever received in Finland so far. Out of that amount, 208 million euros were foreign investments (FVCA, 2018). When comparing the VC investments in European countries, the statistics collected by FVCA (2018) shows that Finland received more VC investments in early growth startups as compared to other European countries in 2018.
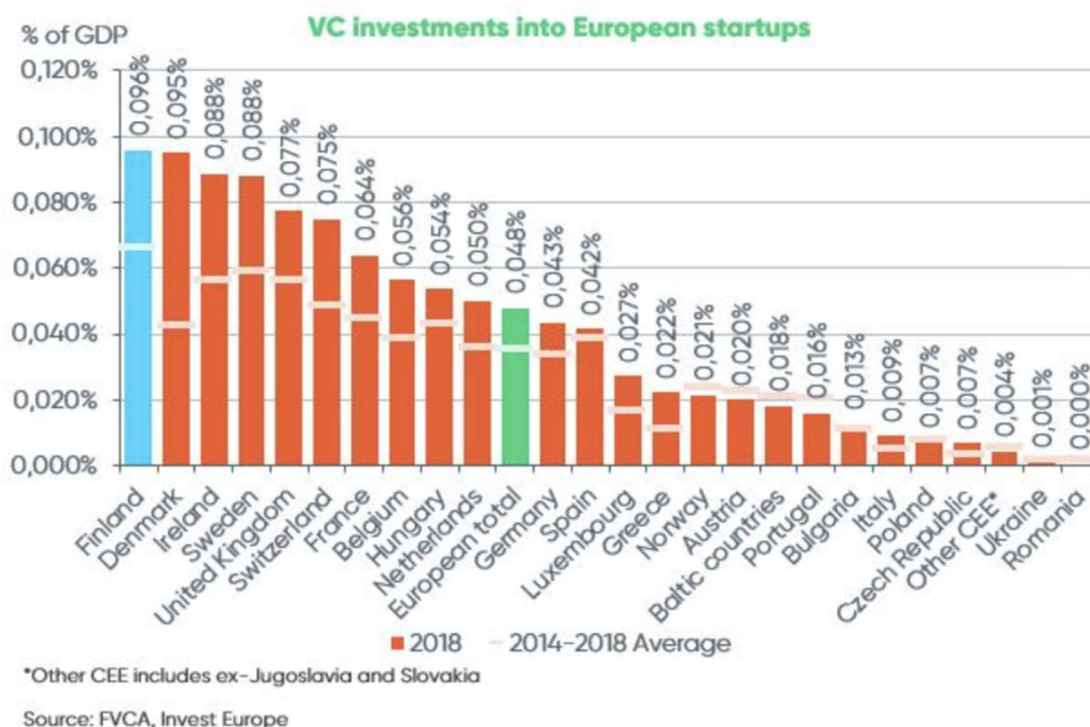
Figure 8.   VC Investments in European Startups (FVCA,2018)

As figure 8 illustrates, Finland leads in the amount of VC investments as a percentage of GDP into European startups, closely by followed Denmark, Ireland, and Sweden. The figure also states that the investment received by Finland is almost double than that of the average investments received by European countries. Moreover, on average, from 2014-2018, Finland has also received the highest investment among all European countries. FiBAN (2018) stated that the maturing Finnish startup ecosystem conveniently attracts more foreign investors.

Another finding by FVCA (2019) shows that in the past 10 years, the number of foreign investments has increased tenfold. Due to this rise in both internal and foreign investors investing in Finnish startups in early-stage growth companies, Finland has been attracting both local and international entrepreneurs into its ecosystem.

Slush, FallUp, and Dash are some examples of an event that has made it easy for entrepreneurs to connect to investors and vice versa. Moreover, FVCA has also played a huge role in making investors accessible to entrepreneurs. Their website is user-

friendly, and entrepreneurs can easily find suitable investors for their company along with the list of all investors and VC firms (FVCA 2019).

3.3.5 Incubators, Mentors and Service providers

The reason for grouping incubators, mentors, and service providers together is because, in Finland, all three entities are related most of the time, and some organizations have two or more functions. Realizing the importance of mentorship for a startup, Mege (Multicultural Encounters, Growth, Entrepreneurship) organizes mentor day in Helsinki, which brings together business experienced mentors and international entrepreneurs to create a long-lasting relationship among the parties (Mege, 2020).

Many incubators in Finland are specific to the field like Cleantech Invest, which facilitates business focused on clean energy and creating solutions for efficient use of natural resources (TallyFox, 2015). Other examples of incubators operating in Finland are Startup Sauna, Kiuas, KoppiCatch Accelerator, etc. (TallyFox, 2015).

Maria 01 is a non-profit startup campus, located in an old Maria's hospital building in Helsinki, especially for tech startups, which provides common low-cost space for startups, free of cost common working area, free of cost printing facility, meeting rooms, gym, along with restaurant within the facility. With the increase in field-specific incubators and accelerators in Finland, it has helped entrepreneurs to reduce basic costs during initial stage (Maria 01, 2019). Moreover, service providers, like NewCo Helsinki, is easily accessible, which provides startups with free of cost consultation service.

3.3.6 Large Corporations (Rise and Fall of Nokia)

In a small country like Finland, other than the benefits that large corporations provide to the ecosystem, their actions and operations can bring drastic changes to the whole country. Nokia, which started as a paper mill in 1865 and became Nokia Corporation later in 1967, defined the global mobile industry in the late 1990s. Nokia's rise and fall had a big hand in shaping the startup ecosystem of Finland (Mitzner, 2015).

Nokia accounted for 4% of the total Finnish GDP in 2000 (Ali-Yrkkö, 2010:10). Lehmuskoski, the co-founder of Gorilla Ventures, cited by Mitzner (2015), says that high quality demoscene that existed in Finland in the early 1990s and Nokia's rise later had created a pool of highly skilled developers in Finland. Nokia was one of the top employers in Finland in the late 1990s, and after its downfall, the job cuts released approximately 10,000 highly skilled R&D based employees into the Finnish job market (Kelly, 2013). Moreover, due to Nokia's huge influence, many young students that acquired ICT related degree, suddenly had nowhere to go. After the job cuts by Nokia and Nokia's mobile phones unit being bought by Microsoft, the pool of highly skilled engineers and developers started exploring their own startup ideas, opted to be entrepreneurs in the field of tech and brought a tech-startup boom in Finland (Kelly, 2013; Mitzner, 2015; Ong, 2018).

To fuel this boom, Nokia introduced its Nokia Bridge Incubator program (from 2011-2014) where each ex-employee would be provided €25,000 and a group of up to four ex-employees would receive the seed fund of €100,000 (with the possibility of additional €50,000 funds) from this bridge program (Kelly, 2013). More than 1,000 companies were established globally via the bridge program (Kelly, 2013). In Finland alone, 400 companies were established by 500 dismissed Nokia employees (Kang et al. 2017: 5). Other than the bridge incubator, former Nokia employees have joined or started their own startup. Pekka Rantala, former Senior Vice President of Marketing in Nokia, later started working as CEO in Rovio and is now the CEO of ePassi Payments; Tero Ojanperä, chairman of the board of Kiosked, a Finnish AdTech startup, was former CTO of Nokia; One of the Founders of Supercell, Niko Derome, was a software engineer at Nokia (Mitzner, 2015).

Another example of how large corporations helped the Finnish ecosystem was when one of the first co-working spaces introduced in Helsinki was by Hewlett-Packard. It was called HP Mobile E-Services Bazaar and acted as a catalyst for mobile e-service creation (Kaufmann, 2018). HP Mobile E-Service Bazaar, together with Assembly hackathon and Nokia, organized a mobile multiplayer game making competition in 2003, which was won by three students of Aalto University who later established their own startup Rovio that made the Finnish gaming industry widespread in the world (Kaufmann, 2018).

Alexander Stubb, former Prime Minister of Finland, explains the main change that Nokia brought was in the mindset of Finnish people, who have normative characteristics and were not used to both huge success and failure (Kelly, 2013; Hofstede Insights, 2020). Nokia gave Finland both a huge success and failure story, which eased the concept of risk-taking to Finnish population.

4 Methodology

4.1 Data Collection

The data collection is done using a qualitative method as it provides a deeper understanding of involved participants, their opinions, perspectives and attitudes regarding the field of study, by collecting a rich, comprehensive data, which matches with the intended aim of this research (Nassaji, 2015). Data will be collected via interviews with a set of open-ended questions (see appendix for the list of questions), and a semi-structured approach was taken for the interviews. This approach seemed to be the most appropriate for this research as it allows flexibility for the researcher to observe and interact with the interviewee and gain valuable insights from in-depth conversations while covering necessary topics at the same time.

The interviewees comprise of people who work as or are associated with different components of the ecosystem, such as Entrepreneurs, Incubators, Accelerators, Universities, Student Entrepreneurs Society, large corporations, and Investors. The reason for a diverse selection of interviewees is to expand the range of data collected and to understand the ecosystem from different perspectives.

The process of data collection began by contacting various entities and role players of the ecosystem. Due to the pandemic COVID-19, only one interview was conducted face-to-face, and the rest were conducted online via Hangouts. The face-to-face interview was recorded, with permission from the interviewee, for further analysis. For the interviews conducted online, the interviewer made notes of the answers and discussion during the interview.

Individual interviews were conducted in March 2020 with five interviewees who were:

- Aaro Isosaari: CEO at Kiuas, leading startup accelerator in Finland. His passion for Entrepreneurship shows in his career path. He has co-led Slush's investor operations for the 2018 event. He was a team member of the Aalto Entrepreneurship Society during 2017-2018. He has seen the Finnish startup ecosystem from the angle of an entrepreneur, incubator, accelerator, and student entrepreneurship society.

- Bikash Gurung: Co-Founder of Sanzaal. Board Member of Inklussiv. He has worked as a team leader in both Production and Stage at Slush for one year and later was appointed as the head of Volunteer operations. Currently working as the program and production head at Arctic15, he has a good insight of the Finnish startup community from both entrepreneur's view as well as incubators and accelerators in Finland.

- Valeria Gasik: Entrepreneur and active member of the Finnish startup ecosystem. She entered the entrepreneurial world with her first startup SoundShade App. Currently, she is the Co-Founder and Lead Designer of Selma Finance, which has its office in Finland and Switzerland. During her initial phase as an entrepreneur, she spent three years learning, growing, and expanding her business in Maria01.

- Sanni Ishfaq: Currently doing her Bachelor's in Business administration (European Business Administration) at Metropolia UAS. She is the Co-Founder of StepOut. StepOut won "The Audience's Favourite" title at Hatch Incubator 2019 Demo day and won first place on the Startup Circus Helsinki 2019 pitching Competition.

- Kim Oguilve: Chief Marketing Officer at Maria 01. Maria 01 hosts 110 startups, VC firms, corporations, and other ecosystem players in its location of 20000 m^2 space, comprising of 1100 members. She is well acquainted with the startup ecosystem and interacts with many startups on a daily basis.

4.2 Data Analysis

The analysis of the collected data is done by taking the qualitative approach. The reason for selecting the qualitative research method for data analysis rather than the quantitative method is because it provides the freedom to analyse non-quantified topics related to the research, enables to understand and explore the Finnish startup ecosystem in-depth.

Thematic analysis is a qualitative research method which comprises of 6-phase data analysis (Ryan & Bernard, 2000; Nowell et al., 2017). In order to analyse the data systematically, the thematic analysis framework given by Braun & Clarke (2006) with additional information by Nowell et al. (2017) will be used, following the recommended actions in all six phases.

Phase 1: Familiarizing yourself with the data. The first phase of thematic analysis begins when the researcher starts to gather and becomes familiar with the data. In this phase, the collected raw data via interviews were in the form of audio recordings and notes. The data, both audio recordings, and notes were revised at least twice, to become familiar with the data and to check if all questions were answered properly.

Phase 2: Generating Initial Codes. After completing phase one, the second phase involves producing codes from the revised data to match the research aim and objectives. In this phase, the revised data, in their raw forms, were first transcribed and re-organized according to the semi-structured interview questions. Different answers given by interviewees were grouped together under a group of similar questions to generate initial codes. This step of coding the data helped to categorize the data and seek some similarities or differences in the answers given by the respondents.

Phase 3: Searching for Themes. The coded data are then sorted and analysed to extract recurring themes. A theme can be defined as "an abstract entity" (DeSantis & Ugarriza, 2000: 362), which can be identified by bringing different components together to capture something important that relates to the overall research aim and research question (Braun & Clarke, 2006). To search for themes within the data, inductive thematic analysis, "a process of coding the data without trying to fit it into a pre-existing coding frame or the researcher's analytic preconceptions" (Nowell, et al., 2017: Ch. 3), was

conducted. After coding the data in phase 2, some similar patterns were detected, which were categorized according to their nature, and different themes within the coded data were spotted.

Phase 4: Reviewing Themes. After spotting the themes, it is important to refine, review, validate the themes, and distinguish a coherent pattern within the themes (Nowell et al., 2017). This process might also require to re-visit and re-code the initially coded data, identify new themes until the themes are not specific enough to be clear and distinct, and then summarize the whole data (Braun & Clarke, 2006). In this phase, the previously identified theme was reviewed and validated in order to make sense in relation to the research question. After reviewing the themes, five distinct themes were identified (see chapter 5 for a detailed explanation of the themes).

Phase 5: Defining and Naming Themes. The identified themes now need to be clearly defined. This involves knowing different aspects, scopes, and contents of each theme, identifying how the themes fit into the comprehensive story in relation to the entire data and the research question (Braun & Clarke, 2006). In this phase, the process of identifying and reviewing the themes was extended to review the data further and see the relations between each theme. After finalizing a set of well-defined themes, suitable names were given to each theme.

Phase 6: Producing the Report. The last phase of this analysis begins after the researcher finalizes the themes and starts to produce an analysis report. In this phase, a detailed report of results from data analysis in relation to their themes is presented in the following Chapter 5.

5   Results of data analysis

This chapter is divided into five sub-chapters, where each part explains a theme spotted from data analysis.

Metropolia
University of Applied Sciences

5.1 The need for a Startup Ecosystem

All five interviewees immediately agreed that a startup ecosystem is necessary for startups to survive and scale, expressing their opinion around this theme. Four entrepreneur interviewees shared their insight on how the Finnish startup ecosystem has played a big role for their startups to grow. Interviewee 4 expressed that the ecosystem acted as a catalyst to turn the initial business idea into reality. "These startup and entrepreneurship communities are doing a great job in offering mentoring and workshops which eventually help you to build a strong network and contacts which is very important for entrepreneurs," added interviewee 4. Moreover, interviewee 3 says that if the Finnish ecosystem was not present or functioning, their company would not be able to operate this successfully and would take thrice longer to even begin any operations.

"The Finnish ecosystem supports not only existing entrepreneurs but also inspires potential entrepreneurs to join the community," said interviewee 1. Interviewee 1 and 5 share that the Finnish startup ecosystem has also made it easier for entrepreneurs to reach out to the global startup community and other ecosystems around the world, either for collaboration, knowledge sharing, expanding the business or to get investments from foreign investors. This clearly shows that a startup ecosystem is necessary for startups to survive and succeed.

5.2 Hyper collaborative environment

All interviewees expressed similar opinions on what makes the Finnish ecosystem unique, which was around the theme of "collaboration." All interviewees agreed that the hyper collaborative environment of the Finnish ecosystem is what makes it the point of interest globally (see ch. 3.2 above). Interviewee 3 mentioned that most of the entities in the Finnish ecosystem want the company (startups) to grow. This positive attitude towards startups and entrepreneurship has enabled entrepreneurs to trust and collaborate with different entities. Interviewee 1 pointed out the "giving back" nature of Finnish ecosystem where new entrepreneurs use the resources of the ecosystem, and after they become successful in their venture, they give back to the community by

Metropolia
University of Applied Sciences

coaching young entrepreneurs, forming a cycle of knowledge sharing and enabling a platform for collaboration among new and old members of the ecosystem.

"Helsinki is a small and interconnected city, and most people involved in the ecosystem know each other," stated interviewee 2. He added, "After attending a few events or conferences in the ecosystem, you start to see many familiar faces, and this makes it easier to make a connection or expand networks." The collaboration is not only among different entities but also among entrepreneurs. The sense of familiarity also makes collaboration easy. The researcher reached out to all interviewees separately, but all five interviewees knew and had collaborated with at least one other interviewee. This also shows how close the Finnish ecosystem is and provides strong evidence of the hyper-collaborative environment of the ecosystem.

Moreover, the observation of the researcher while contacting candidates for the interview also says that many people are willing to meet, virtually or physically, for a coffee, to talk about the ecosystem and share their knowledge. Reaching out to anyone for collaboration (regardless of the position they hold) is not stigmatized due to the Finnish culture of equality and inclusivity (see ch. 3.1 above).

5.3   Role of Universities and Student Entrepreneurship Societies

The main motivation for starting their entrepreneurship journey or joining the ecosystem for all five interviewees was because of universities or student entrepreneurship societies. Two out of five interviewees considered that the biggest role player of the ecosystem, especially the Finnish ecosystem, is the Student Entrepreneurship Societies, originating from AaltoES. "Student societies, for example, AaltoES in Finland, are the most important players if you want to build an ecosystem, as they attract entrepreneurs to the ecosystem, and there is no ecosystem without entrepreneurs and startups," stated interviewee 2. Interviewee 4 added that the entrepreneurship course provided by the university and the activities of student-led entrepreneurship societies has played a huge

role in inspiring students to be entrepreneurs, grab the attention of media and attract other entities towards the Finnish ecosystem.

5.4 Importance of Incubators

The interviewees who were entrepreneurs, emphasized the positive impact of incubators that resulted in the growth of their startups. Interviewee 4 shared her experience saying, "Incubators provide guidance, consultation and facilities that equip you to move forward with your journey as an entrepreneur." Interviewees 3 and 5 selected incubators to be the biggest role player in building the startup ecosystem as incubators act as the central point of contact for all entities. Interviewee 5 stated that "the nature of incubators itself is to act as a smaller version of the ecosystem for startups. Without the presence of incubators and accelerators, startups would not have an ecosystem."

This theme shows some association with the second theme: hyper collaborative environment, as interviewee 5 expressed that incubators and accelerators are the best places to find networks to build your contacts and enable collaboration with other like-minded entrepreneurs. Interviewee 1 explained, "one reason for the Finnish ecosystem being more collaborative than competitive can be because most incubators and accelerators in Finland are non-profit or not-for-profit and are focused more on creating impact in the society rather than making profit." Interviewee 3, on the same note, added, "the focus of incubators here (in Finland) would be to collaborate and measure impact as KPIs over profit."

5.5 Investors

The importance of investors (both public and private) in the ecosystem was acknowledged by all interviewees. The ecosystem cannot thrive without the presence of sufficient public, private, and foreign investments. The initial investment received by some of the interviewed entrepreneurs was from Tekes, a government funding agency in Finland (and now absorbed into Business Finland). The interviewees claimed that getting the first investment from the government makes it easier to receive additional funding from private investors (see section 3.3.2 above). Interviewee 3 stated that "Tekes

is on the same side as entrepreneurs, and although legal and administrative formalities are time-consuming complex processes, the Finnish government is doing its best to make the process easy and provide help where necessary. Being efficient is a win-win situation for both parties."

This theme also intersects with two previous themes, 'role of Universities and Student Entrepreneurship Societies' and 'Importance of Incubators', as interviewee 1 claimed, "Investors not only invest in startups but also in other components of the ecosystem such as student societies and incubators. One of the key agendas of Slush was to attract foreign investors to Finland." Interviewee 4 pointed out that, "Some incubators in Finland also provide entrepreneurs access to different investment opportunities by organizing pitching competition or other earned exposure."

6 Conclusion

6.1 Conclusion

Startups are crucial for technological development, job creation, innovation, and economic growth. This thesis aimed to identify what a startup ecosystem provides to startups and how to build a functioning startup ecosystem. A thorough analysis of the literature review and qualitative analysis of the collected data was conducted, and in order to meet the research aim, three sub-research questions were formulated, which guided the whole research to answer the primary research question, "How to build a functioning startup ecosystem?".

The first sub-question is "Why are startup ecosystems necessary?". The research clearly presents the importance of the ecosystem for startups, not only to survive and grow but to be formed in the first place. Based on the qualitative analysis of the collected data, a potential entrepreneur knows about the startup scene through the ecosystem. This study reveals that a functional ecosystem first ignites interest, attracts potential entrepreneurs and talent pool into the ecosystem, and inspires entrepreneurs to start their journey. Startups, being highly volatile, cannot survive on their own and needs the guidance of the ecosystem as it helps the entrepreneurs to polish the necessary skills and provides

resources to survive and sustain the venture. The ecosystem is crucial to attract, not only entrepreneurs but also other entities like investors, mentors, and service providers, which helps the startups to scale. The results of data collection has also shown that the role of the ecosystem is vital, not only after a startup has begun its operations, but also before and during the formation of a startup.

For the second sub-question, "Who are the key players of the ecosystem?", the research was successful in identifying all the key role players of the ecosystem, their roles, the components of the ecosystem, and their connection with each other by exploring existing literature on the topic. Eight main key role players of the ecosystem were identified, which are: Entrepreneurs, Government, Universities, Investors, Incubators, Mentors, Service providers, and large corporations. The result of the data analysis shows that among all the key players of the ecosystem: investors, universities and incubators, play the biggest role in building the startup ecosystem. Moreover, the ecosystem can sustain when entrepreneurs, with a long-term commitment towards the startup community, become the leader of the ecosystem.

The third sub-question, "How did Finland build its ecosystem?" is answered by analysing the Finnish ecosystem using descriptive methods. The theoretical findings of the second sub-question were put to the test to answer the third sub-question. The case study of Finland provided a better understanding of the role of each key player of the ecosystem and showed the importance of identifying how each key player can influence the ecosystem. Moreover, the study of the Finnish ecosystem also shows that collaboration is the key to build an ecosystem. The Finnish strategy of moving from hyper-competition to hyper-collaboration to form an ecosystem proves to be effective to scale the ecosystem and to standout from other ecosystems. Moreover, the research also shows that knowing the ecosystem's strength is valuable to determine the focal point to improve the ecosystem. The case study of the Finnish ecosystem also supports the claim that entrepreneurs should lead the ecosystem. The research also highlights the importance of investing in education and providing students with autonomy to run entrepreneurial communities.

This research clarifies that the process of building a startup ecosystem takes many years and is a joint effort of various stakeholders. This research provides a framework

comprising all the key components along with the explanation of key role players and how they contribute in building a successful startup ecosystem. In fact, to conclude, this research has been successful, in its attempt, to sketch a picture of the formation of the Finnish startup ecosystem and simultaneously show how a functioning and sustainable startup ecosystem can be built over time.

6.2   Limitations

The first limitation of this research is the language barrier. The researcher does not understand Finnish and is limited to access the information only available in English. This also limited the interview participants to only English speakers in order to avoid misinterpretation of information. This research took place during the COVID-19 pandemic, and most interviews were conducted online to maintain social distance, which was an additional limitation of this research. The researcher could not control the environment of respondents during the interview as most respondents were at home, and the researcher, additionally, could not evaluate all the factors that could affect the respondent's answers, opinions, and view of the topic. The researcher's personal experience and knowledge regarding the topic can also make the research biased. The focus group is another limitation of this research. The researcher could not reach out for an interview with some key role players of the ecosystem, such as government personnel, Tekes, private investors, etc. due to the pandemic which limited the diversification of respondents. Finally, the data collected by this research cannot be statistically represented, and the participants have more control over the data as the research is qualitative in nature.

6.3   Further research

Acknowledging the limitations of this research, the following recommendations for further research are proposed below.

Firstly, to have an extensive understanding of the Finnish ecosystem, an in-depth analysis, by interviewing all the key role players of the ecosystem that the researcher could not interview, can be conducted. The Finnish ecosystem is evolving, and the

Metropolia
University of Applied Sciences

research conducted today will not be reliable in few years. The role of key players, the data of startups, and ecosystems presented now can be studied and updated continuously.

Secondly, this research can be used as a base to conduct a quantitative analysis with a larger sample size, to understand the role of different entities within the ecosystem as well as to explore how each component of entrepreneurial ecosystem impacts startups and ecosystem.

Thirdly, diversity and inclusion are trending topics in the Finnish ecosystem, which can be further explored from different angles. The role of expats and foreigners in the Finnish startup ecosystem is one of the angles that can be explored in detail. The distribution of funding among different genders, ethnic groups, and backgrounds within the Finnish ecosystem is another topic which could be examined to highlight some of the underlying barriers of the ecosystem.

Lastly, the functionality of different startup ecosystems around the world can be compared to better understand how ecosystems are formed in different cultures. The Finnish startup ecosystem and its global position can be further studied, along with its neighbouring ecosystems.

6.4   Recommendation to the Finnish Startup ecosystem

Based on the researcher's knowledge, experience, and information gathered during this research, the following recommendations to the Finnish startup ecosystem in order to improve and scale the ecosystem are mentioned below.

- Enable the possibility of more collaboration not only between entities within the ecosystem but also collaboration with other ecosystems.
- Focus on gaming, AI, big data and analytics. These sectors are Finland's strengths and can build a competitive advantage by using resources to invest and expand in these sectors.

Metropolia
University of Applied Sciences

- Retain already existing talent pool in Finland. It is cheaper and more efficient to retain the existing talent than to hire an expert from abroad.
- Aim to change the ecosystem's phase from early-globalization to attraction phase by introducing more events like Slush, targeting different sectors, to attract foreign investors. Depending on just local investors is not enough to scale the ecosystem.
- Expand the market for startups and make it global. The local Finnish market is small, competitive and can easily reach a saturation point.
- Involve students in different entrepreneurship programs to build a base for future entrepreneurs.

7   References

Aalto University, 2020. Starting Up. [online course] Available at: < https://starting-up.org/en/starting-up/explaining-startups/the-startup-ecosystem/> [Accessed 14 April 2020]

Aalto Ventures Program, 2019. *What Makes the Finnish Startup Ecosystem Different?* [online] Available at: <https://avp.aalto.fi/blog/what-makes-the-finnish-startup-ecosystem-different/> [Accessed 23 February 2020]

Aaltoes, 2019. *Europe's leading entrepreneurship society.* [online] Available at: <https://www.aaltoes.com/> [Accessed 3 February 2020]

Abudheen, S. K., 2015. *"Latin American startup ecosystem is 10-12 years behind India".* e27 [online] Available at: <https://e27.co/latin-american-startup-ecosystem-is-10-12-years-behind-india-20150708/> (Accessed on 20 March 2020)

Acharya, S. R., Dixit, T., 2019. *Technology Entrepreneurship: Role of Government in Enabling Startup Support Ecosystem.* Conference: SSIP Annual Conference on Student Start-ups, Innovation and Ecosystem At: Gujarat, [online pdf] Available at: < https://www.researchgate.net/publication/333816283_Technology_Entrepreneurship_Role_of_Government_in_Enabling_Startup_Support_Ecosystem> [Accessed 2 March 2020)

Aleisa, E., 2013. *Startup Ecosystems: Study of the Ecosystems Around the World; Focusing on Silicon Valley, Toronto and Moscow.* Project Report. [online] Available at: <http://www.janrecker.com/wp-content/uploads/2013/02/20130213_FinalReport_-Startup-Ecosystems.pdf> [Accessed 15 March 2020]

Ali-Yrkkö, J., 2010. *Nokia and Finland in a Sea of Change.* ETLA – Research Institute of the Finnish Economy. Helsinki: Taloustieto Oy, [online pdf] Available at: <https://www.etla.fi/wp-content/uploads/2012/09/B244.pdf> [Accessed 11 February 2020]

Ali-Yrkkö, J., Lehmus, M., Rouvinen, P., Vihriälä, V., 2017. *Riding the Wave: Finland in the Changing Tides of Globalisation.* Helsinki: Taloustieto Oy.

Amadeo, K., 2019. *Silicon Valley, America's Innovative Advantage.* Thebalance.com, [online] Available at: < https://www.investors.com/news/technology/-click/15-years-after-dot-com-crash-tale-of-stock-survivors/> [Accessed 10 February 2020]

Assembly Winter, 2020. *History.* [online] Available at: <https://www.assembly.org/-winter20/about-us/history> [Accessed 20 January 2020]

Metropolia
University of Applied Sciences

Aura Bear, 2019. *The Comprehensive Guide to Finnish Startup Ecosystem – P1/2.* [online] Available at: <https://www.aurabear.com/blog/the-comprehensive-guide-to-finnish-startup-ecosystem-p1-2/> [Accessed 23 February 2020]

Bernard, Z., 2017. *Here's the story behind how Silicon Valley got its name*. Business Insider, [online]. Available at: https://www.businessinsider.com/how-silicon-valley-got-its-name-2017-12?r=US&IR=T [Accessed 10 Feb. 2020].

Blank, S., 2007. *The Four Steps to the Epiphany: Successful Strategies for Products that Win*. Cafepress.com, CA.

Bower, J. L., Christensen, C. M., 1995. *Disruptive Technologies: Catching the Wave.* Harvard Business Review. January-February Issue. [online] Available at: <https://hbr.org/1995/01/disruptive-technologies-catching-the-wave> [Accessed 7 February 2020]

Braun, V., Clarke, V., 2006. *Using thematic analysis in psychology*. Qualitative Research in Psychology. doi:10.1191/1478088706qp063oa

Business Dictionary, 2020. *Business Incubator.* [online] Available at: <http://www.businessdictionary.com/definition/business-incubator.html> [Accessed 17 February 2020]

Business Finland, 2020. *Finnish Startup Environment*. [online] Available at: <https://www.businessfinland.fi/en/do-business-with-finland/finnish-business-environment/startup-environment/> [Accessed 21 February 2020]

Cambridge Dictionaries, 2015. *Definition/English/Start-up*. [online] Available at: <http://dictionary.cambridge.org/dictionary/english/start-up> [Accessed 9 February 2020].

Castillo-Palacio, M., Batista-Canino, R. M., Zuniga-Collazos, A., 2017. The Relationship between Culture and Entrepreneurship: From Cultural Dimensions of GLOBE Project. Espacios, Vol, 38, No, 34, Pg, 12. [online] Available at: <https://www.revistaespacios.com/a17v38n34/a17v38n34p12.pdf> (Accessed 13 March 2020)

CB Insights, 2020. *The Global Unicorn Club*. [online] Available at: < https://www.cb-insights.com/research-unicorn-companies> [Accessed 19 April 2020]

Cervantes, R., Nardi, B., 2012. *Building a Mexican startup culture over the weekends*. Proc. 4th Int. Conf. Intercult. Collab.

Chakraborty, S., Thompson, J. C., Yehoue, E. B., 2015. Culture in Development. The World Bank Economic Review.[online] Available at: <

Metropolia
University of Applied Sciences

https://pages.uoregon.edu/shankhac/-uploads/Culture-WBERP&P.pdf> (Accessed 10 March 2020)

Cohen, R., 1978. *Ethnicity: problem and focus in anthropology.* Annual Review of Anthropology. https://doi.org/10.1146/annurev.an.07.100178.002115

Cristina, J. & Dwayne, D., 2009. *An exploratory study of competitive strategies among hotels in a small developing Caribbean state*. International Journal of Contemporary Hospitality Management, 21(4).

Cukier, D., Kon, F., Lyons, T. S., 2016. *Software Startup Ecosystems Evolution: The New York City Case Study*. 2nd Int. Work. Softw. Startups.

Deeb, G., 2019. *How to Build A Startup Ecosystem?* [online] Available at: <https://www.forbes.com/sites/georgedeeb/2019/04/04/how-to-build-a-startup-ecosystem/#6b134da76130> [Accessed 27 February 2020]

DeSantis, L., Ugarriza, D., 2000. *The concept of theme as used in qualitative nursing research.* Western Journal of Nursing Research, 22. doi:10.1177/019394590002200308

Desjardins, J., 2018. *The biggest tech companies in the world have bought up a lot of smaller startups*. Business Insider. [online] Available at: <https://www.businessinsider.com/big-tech-companies-buying-smaller-startups-2018-3?r=US&IR=T> (Accessed on 17 March 2020)

Devireddy, S., 2018. *Organizational Success is Only as Functional as the Ecosystem That Supports it.* Entrepreneur India, [online] Available at: <https://www.entrepreneur.-com/article/310339> [Accessed 31 January 2020]

Eisenmann, T., Ries, E., and Dillard, S., 2011. *Hypothesis-driven entrepreneurship: the lean startup.* Harvard Business School Background Note 812-095, pp. 1-23.

Encyclopaedia Britannica, 2020. *Primary Succession.* Definition. [online] Available at: <https://www.britannica.com/science/primary-succession> (Accessed 3 March 2020)

Ester, P., 2017. *Accelerators in Silicon Valley: Building Successful Startups.* Amsterdam University Press.

Feld, B., 2012. *Startup Communities: Building an Entrepreneurial Ecosystem in Your City*. Of John Wiley & Sons.

FiBAN, 2018. *Investments Into Finnish Startups Hit A New Record High At 349m€ – Foreign Investors Increasingly Attracted To The Maturing Startup Ecosystem*. [online] Available at: <https://www.fiban.org/news/investments-into-finnish-startups-hit-a-new-

record-high-at-349meur-foreign-investors-increasingly-attracted-to-the-maturing-startup-ecosystem#> [Accessed 7 April 2020]

Finnish Venture Capital Association. 2018. Investments into Finnish startups hit a new record high at 349M€ – foreign investors increasingly attracted to the maturing startup ecosystem. [online] Available at: <https://paaomasijoittajat.fi/startup-funding-finland-2017/> [Accessed 15 February 2020]

Founder Institute, 2018. *An Updated Guide to the Helsinki Startup Ecosystem: 250+ Resources for Finnish Entrepreneurs*. [online] Available at: <https://fi.co/insight/the-definitive-guide-to-the-helsinki-startup-ecosystem-200-resources-for-finnish-entrepreneurs> [Accessed 20 January 2020]

Fox, W., Bayat, M.S., 2007. *A Guide to Managing Research.* Juta Publications.

Global Business Culture, 2017. Doing Business with Finland. [online] Available at: <https://www.worldbusinessculture.com/country-profiles/finland/culture/> (Accessed 18 March 2020)

Good News Finland, 2018. *Helsinki startup ecosystem recognized globally*. [online] Available at: <https://www.goodnewsfinland.com/helsinki-startup-ecosystem-recogni-sed-globally/> [Accessed 14 February 2020]

Good News Finland, 2019. *Finland leads in educating for the future*. [online] Available at: <https://www.goodnewsfinland.com/finland-ranked-the-global-leader-in-educating-for-the-future/> [Accessed 15 February 2020]

Griffith, E., 2014. *Why startups fail, according to their founders.* [online] Available at: <http://fortune.com/2014/09/25/why-startups-fail-according-to-their-founders/> [Accessed 20 April 2020].

Gunawardena, L. D. V., 2019. *Finland's Education System Leads Globally*. Inter Press Service News Agency, [online] Available at: <http://www.ipsnews.net/2019/07/finlands-education-system-leads-globally/> [Accessed 15 February 2020]

Guzzetta, M., 2016. *Why Even a Salad Chain Wants to Call Itself a Tech Company.* Inc. Magazine [online] Available at: <https://www.inc.com/magazine/201605/marli-guzzetta/tech-company-definition.html> [Accessed 1 April, 2020]

Hofstede Insights, 2020. *Geert Hofstede's: The Dimension Paradigm.* [online] Available at: <https://hi.hofstede-insights.com/models> [Accessed on 12 March 2020]

Hofstede, G., 2001. *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations. Thousand Oaks*. CA: Sage Publications.

Hofstede, G., Hofstede G. J., & Minkov, M., 2010. *Cultures and organizations: Software of the mind. Revised and Expanded 3rd Edition*. New York: McGraw-Hill.

Jackson, D. J. (2011). *What Is an Innovation Ecosystem?* Washington, DC.

Jacobsen, D., 2015. Recognizing Across Cultures: Scandinavia. Workhuman [online] Available at: <https://www.workhuman.com/resources/globoforce-blog/recognizing-across-cultures-scandinavia> (Accessed 25 March 2020)

Kagan, J., 2019. *Dotcom.* Investopedia, [online] Available at: <https://www.in-vestopedia.com/terms/-d/dotcom.asp> [Accessed 5 February 2020]

Kang, B., Rannikko, H., Tornikoski, E. T.,2017. *How a laid-off employee becomes an entrepreneur: The case of Nokia's Bridge program.* Institute of Innovation Research, Hitotsubashi University.

Kaufmann, R. V., 2018. *Slush and other Finnish Startup Stories.* [online] Available at: <https://medium.com/@richievk/slush-and-other-finnish-startup-stories-69f3ba320113> [Accessed 10 February 2020]

Kawtharani, S., 2017. *4 Crucial service providers for early stage startups.* Corl, [online] Available at: <https://medium.com/corl/4-crucial-service-providers-for-early-stage-s tartups-6005d9904ce> [Accessed 28 February 2020]

Kelly, G., 2013. Finland and Nokia: an affair to remember. Wired, [online] Available at: <https://www.wired.co.uk/article/finland-and-nokia> [Accessed 20 February 2020]

Kenton, W., and Segal, T., 2019. *Silicon Valley.* Investopedia, [online] Available at: <https://www.investopedia.com/terms/s/siliconvalley.asp> [Accessed 2 February 2020]

Khan, K. U., Shah, S. M. A., Jan, M. A., 2014. The Impact of Culture on Innovation: the moderating role of Human Capital. International Journal of Accounting and Financial Reporting, Vol 4, No. 2, [online] Available at: <http://dx.doi.org/10.5296/ ijafr.v4i2.6871> (Accessed on 18 March 2020)

Kluckhohn, C., 1951. *The study of culture*. The policy sciences. Stanford, CA: Stanford University Press.

Kohn, M. H., Pereira, P. V., 2017. *Speculative bubbles and contagion: Analysis of volatility's clusters during the Dotcom bubble based on the dynamic conditional correlation model.* Cogent Economics & Finance, 5:1, Ch-3, DOI: 10.1080/23322039.2017.1411453

Kushida, K., 2016. *Japan's Startup Ecosystem: From Brave New World to Part of Syncretic "New Japan."* [pdf] Asian Research Policy.

Mäkinen, S., Dedehayir, O., 2012. *Business Ecosystem Evolution and Strategic Considerations: A Literature Review*. Proceedings of the 18th International Conference on Engineering, Technology and Innovation 2012, ICE.

Malecki, E. J., 2018. *Entrepreneurship and entrepreneurial ecosystems.* Onlinelibrary.wiley.com, [online] Available at: <https://onlinelibrary.wiley.com/doi/full/10.-1111/gec3.12359> [Accessed 16 April 2020]

Maria 01, 2019. Members Directory. [online] Available at: < https://maria.io/community-/directory/> [Accessed 19 March 2020]

Markham, N., Kruger, M., Cacioppe, J., 2016. *Startup Ecosystem Report: Regional Queensland 2015.* Queensland Department of Science, Information Technology, Innovation and the Arts, [online] Available at: <https://www.slq.qld.gov.au/blog/startup-ecosystem-report-regional-queensland-2015> [Accessed 1 March 2020]

Mason, C., Brown, R., 2014. *Entrepreneurial Ecosystems And Growth Oriented Entrepreneurship.* OECD LEED. [online] Available at: <https://www.oecd.org/cfe/leed/Entrepreneurial-ecosystems.pdf> [Accessed 20 April 2020]

McGinnis, D., 2018. *What is the Fourth Industrial Revolution?* Salesforce. [online] Available at: <https://www.salesforce.com/blog/2018/12/what-is-the-fourth-industrial-revolution-4IR.html> (Accessed 15 March 2020)

Mege, 2020. [online] Available at: <https://www.mege.fi/> [Accessed 10 March 2020]

Merriam-Webster, 2020. *Definitions for Culture.* [online] Available at: <https://www.merriam-webster.com/dictionary/culture> (Accessed on 10 March 2020)

Miller, J. W., McKenna, M. C., 2016. *World Literacy: How Countries Rank and Why It Matters*. DOI: 10.4324/9781315693934.

Ministry of the Interior Finland, 2017. *Finland is planning to introduce a new type of residence permit for startups*. Press Release 101/2017, [online] Available at: <https://intermin.fi/en/article/-/asset_publisher/suomeen-suunnitteilla-uusi-startup-oleskelulupa> [Accessed 27 February 2020]

Mitzner, D., 2015. *Nokia´s Fall Means The Rise Of Startups In Finland.* TC, [online] Available at: <https://techcrunch.com/2015/11/11/nokias-fall-means-the-rise-of-startups-in-finland/> [Accessed 25 February 2020]

Moore, J. F., 1997. *The Death of Competition: Leadership and Strategy in the Age of Business Ecosystems*. Harper Paperbacks.

Nassaji, H., 2015. *Qualitative and descriptive research: Data type versus data analysis. Language Teaching Research*. [online] Available at: <https://journals.sagepub.com/doi-/full/10.1177/1362168815572747> (Accessed 1 April 2020)

National Research Council and Institute of Medicine, 2000. From Neurons to Neighbourhoods: The Science of Early Childhood Development. *National Academic Press.* Washington (DC).

Ngram Viewer, 2013. [online] Available at: <https://books.google.com/ngrams/graph?-content=Startup%2Cstartup%2Cstartups&year_start=1800&year_end=2019&corpus=1 5&smoothing=20&share=&direct_url=t1%3B%2CStartup%3B%2Cc0%3B.t1%3B%2Cst artup%3B%2Cc0%3B.t1%3B%2Cstartups%3B%2Cc0> [Accessed 15 April 2020]

Nokia. 2020. *Our History.* [online] Available at: <https://www.nokia.com/about-us/what-we-do/our-history/> [Accessed 17 February 2020]

Nowell, L. S., Norris, J. M., White, D. E., Moules, N. J., 2017. *Thematic Analysis: Striving to Meet the Trustworthiness Criteria.* International Journal of Qualitative Methods [online] Available at: <https://journals.sagepub.com/doi/full/10.1177/1609406917733847> (Accessed 2 April 2020)

O'Kane, S., 2020. *Tesla's record 2019 has bought it some breathing room*. [online] Available at: <https://www.theverge.com/2020/1/29/21113987/tesla-q4-2019-earnings-results-profit-revenue-model-3> [Accessed 8 February 2020]

Ong, Y., 2018. Startups: Finland's ray of light. *Business Times.* [online] Available at: <https://www.businesstimes.com.sg/brunch/startups-finlands-ray-of-light> [Accessed 20 February 2020]

Oxford Dictionaries, 2015. Definition/ English/ Start-up, Oxford University Press. [online] Available at: <http://www.oxforddictionaries.com/definition/english/startup?-q=startup> [Accessed 10 February 2020]

Pandey, K. N., 2018. *An Analysis of Startup Ecosystem in Metropolitan City in India*. International Journal of Engineering and Management Research. Volume-8, Issue-2. Doi: doi.org/10.31033/ijemr.v8i02.12029

Poon, L., 2018. *'Startup in Residence' Builds a Bridge Between Tech and City Hall*. [online] Available at: <https://www.citylab.com/solutions/2018/09/startup-in-residence-city-hall-tech-sector/571108/> (Accessed on 28 March 2020)

Protin, C., Stuart, M., Matt, W., 2017. *Animated timeline shows how Silicon Valley became a $2.8 trillion neighbourhood,* Business Insider, [online] Available at: <https://www.businessinsider.com/silicon-valley-history-technology-industry-animated-timeline-video-2017-5?r=US&IR=T> [Accessed 20 February 2020]

Reis, E., 2010. *What is a startup?* [online] Available at: <http://www.startupon-lessonslearned.com/2010/06/what-is-startup.html> [Accessed 7 February 2020]

Rogoff, B., 2003. *The Cultural Nature of Human Development.* Oxford University Press

Ryan, G., Bernard, H., 2000. *Data management and analysis methods*. Handbook of qualitative research. Thousand Oaks, CA: Sage

Sajjad, S. I., Shafi, H., Dad, A. M., 2012. *Impact of Culture on Entrepreneur Intention.* Information Management and Business Review, Vol. 4, No. 1, PP. 30-34. [online] Available at: <https://www.monroecollege.edu/uploadedFiles/_Site_Assets/PDF-/Impact%20of%20Culture.pdf> [Accessed 20 March 2020]

Saltzman, J., 2018. *The Importance of Creating Incubator Programs for Entrepreneurs*. Entrepreneur Europe, [online] Available at: <https://www.entrepr-eneur.com/article/320670> [Accessed 18 February 2020]

Sawers, P., 2011. Nokia´s ex-employees are building Finland´s future. Tnw, [online] Available at: <https://thenextweb.com/eu/2011/06/26/nokias-ex-employees-are-building-finlands-future/> [Accessed 22 February 2020]

Seitz, P., 2015. *10 big tech stocks that climbed back from the dot-com crash*. Investor's Business Daily, [online] Available at: <https://www.investors.com/news/technology/-click/15-years-after-dot-com-crash-tale-of-stock-survivors/> [Accessed 12 February 2020]

Singh, P., 2018. *Why is it Important to Build a Startup Ecosystem?* Ye! [online] Available at: <https://yecommunity.com/en/blog/why-is-it-important-to-build-a-startup-ecosystem> [Accessed 10 April 2020]

Slush, 2020. This is Slush. [online] Available at: <https://www.slush.org/about-slush/> [Accessed 15 March 2020]

Snellman, E., 2018. *Finnish Startups Attract The Most Venture Capital In Europe.* Slush, [online] Available at: <https://news.slush.org/news/finnish-startups-attract-the-most-venture-capital-in-europe/> [Accessed 10 February 2020]

Startup Commons, 2018. *Building a Startup Ecosystems and Government role.* [online] Available at: <https://www.startupcommons.org/blog/building-a-startup-ecosystems-and-government-role> (Accessed on 25 March 2020)

Startup Genome, 2019. *Global Startup Ecosystem Report 2019.* [online pdf] Available at: <https://startupgenome.com/reports/global-startup-ecosystem-report-2019> [Accessed 1 February 2020]

StartupBlink, 2019. *How Are Governments Influencing The Success Of Their Startup Ecosystem?* [online] Available at: <https://www.startupblink.com/blog/-how-are-governments-influencing-the-success-of-their-startup-ecosystem/> [Accessed 25 February 2020]

Steiber, A., Alänge, S., 2016. *The Silicon Valley Model: Management for Entrepreneurship*. Springer International Publishing

Tallyfox., 2015. *The Best Finnish Incubators and Accelerators*. [online] Available at: <https://www.tallyfox.com/insight/best-finnish-incubators-and-accelerators> [Accessed 21 February 2020]

TE-palvelut, 2020. *A startup grant supports a new entrepreneur.* [online] Available at: <http://www.tepalvelut.fi/te/en/employers/for_entrepreneurs/services_new_entrepreneurs/startup_grant/index.html> [Accessed 21 February 2020]

Tripathi, N., Seppänen, P., Boominathan, G., Oivo, M., Liukkunen, K., 2018. *Insights into startup ecosystems through exploration of multi-vocal literature.* Information and Software Technology. 10.1016/j.infsof.2018.08.005.

Turula, T., 2019. *How Slush gave Finland its mojo back- and built a thriving ecosystem.* [online] Available at: < https://sifted.eu/articles/slush-startups-tech-finland/> [Accessed 19 February 2020]

Willson, N., 2019. *What is a Startup Incubator?* TopMBA, [online] Available at: <https://www.topmba.com/blog/what-startup-incubator> [Accessed 14 February 2020]

Winn, B., 2018. *When Is A Tech Company No Longer A Startup?* [online] Available at: <https://betakit.com/when-is-a-tech-company-no-longer-a-startup/> [Accessed 5 February 2020]

World Economic Forum, 2013. *Entrepreneurial Ecosystems Around the Globe and Company Growth Dynamics.* Report Summary for the Annual Meeting of the New Champions 2013. [online] Available at: <http://www3.weforum.org/docs/WEF_EntrepreneurialEcosystems_Report_2013.pdf> (Accessed on 21 March 2020)

World Economic Forum, 2015. *Does culture matter for entrepreneurship?* [online] Available at: <https://www.weforum.org/agenda/2015/06/does-culture-matter-for-entrepreneurship/> (Accessed 16 March 2020)

WorldOMeter, 2020. *Countries in the world by population.* [online] Available at: <https://www.worldometers.info/world-population/population-by-country/> [Accessed 19 February 2020]

Metropolia University of Applied Sciences

Yidan Prize, 2020. *Yidan Prize Foundation Releases WEFFI 2019, Finland Continues to Top the Index*. [online] Available at: <https://yidanprize.org/yidan-prize-foundation-releases-weffi-2019-finland-continues-to-top-the-index/> [Accessed 11 February 2020]

Appendices

Appendix 1. List of Interview Questions to Finnish Startups' Entrepreneurs

For interviewees who are entrepreneurs:

- **When did you first think about being an entrepreneur? What obstacles did you come across while establishing your company? Did you get any external help?**
- **How has the Finnish ecosystem helped you to establish your startup?**

For interviewees who are other stakeholders:

- **When did you first think about being a part of the Finnish ecosystem? What motivated you?**

For all Interviewees:

- **What is the best thing about Finnish startup ecosystem that other ecosystems should learn or implement?**
- **Who (according to you) plays the biggest role in forming a startup ecosystem: Government, Universities, Investors, Incubators, Mentors, Service Providers, or Large Companies?**
- **If any other stakeholders, then mention them, and what role did they play?**
- **Do you see any prominent changes in the Finnish ecosystem in the past ten years? If Yes, what are they, and was there any specific reason that you found out for the changes? Was the change in the favor or against entrepreneurs and startup?**
- **Do you think there is something in particular that needs to be changed/improved in the Finnish ecosystem?**

Metropolia
University of Applied Sciences

Appendix 2. Table comparing components of Startup Ecosystem given by Tripathi et. al and World Economic Forum

Components of Startup Ecosystem by Tripathi et. al	Components of the Startup ecosystem by WEF
Entrepreneur Demography Technology	Regulatory Framework and Infrastructure **Major Universities as Catalyst** Cultural Support
Accessible Market Human Capital **Finance** **Support Factors** **Education and Trainings**	

Metropolia
University of Applied Sciences