



UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

How Startups Approach Internationalization

*A study of the early stage of Swedish healthtech startups
and the support from the Regional Science Park*

Master Degree Project in International Business and Trade, Spring 2022

School of Business, Economic and Law, University of Gothenburg

Authors: Shijia Ma & Jonathan Sarge

Supervisor: Mikael Hilmersson

Abstract

In response to a certain gap of lacking research, lacking international implications in the healthtech startups' pre-internationalization stage, and limited insights into the science parks' roles when it comes to the startups internationalization. This thesis is aiming to in-depth analyze the multi-elements of a science park as an intermediate support for those startups who choose to be situated at the science park. It provides a systematic view of how science parks within the regional innovation system interplay between Swedish startups with a focus on the healthtech industry during their pre-internationalization process. This thesis finding indicates that there is a positive correlation between startups' internationalization plans with support from the science park under a RIS. The implications of the thesis findings in this particular industry and future research directions are also highlighted.

Keywords:

Startup, Internationalization, Science Park, Networking, Entrepreneur, Regional Innovation System, Healthtech

Acknowledgements

First of all, we would like to extend our sincere gratitude to our supervisor, Mikael Hilmersson, for his instructive advice and valuable suggestions on our thesis. We are deeply grateful for his help in the completion of this thesis. We would also like to thank the students within our supervision group for their valuable insights and comments which has helped us in finding the path to make this thesis possible.

Secondly, we are deeply indebted to all lecturers and professors in the IBT program, from whose devoted teaching and enlightening lectures, we have benefited a lot and academically prepared for this thesis.

At last, we also wish to thank all the interviewees during our empirical research. Thanks for being so helpful and understanding when participating in the interviews. Without the help from all of you, we would have never been able to conduct this thesis.

Thank you!

Table of Contents

Abstract	2
Acknowledgements	3
Table of Contents	4
1. Introduction	6
1.1. Background	6
1.2. Problem Discussion	8
1.3. Research Question	10
2. Theory	11
2.1. Regional Innovation System	11
2.1.1. Science Parks	12
2.2. The Internationalization of a Startup Firm	14
2.2.1. Born Global, International New Venture, and Born Digital	16
2.2.2. Networking's Role for the Startup and its Internationalization	19
2.3. Startups	20
2.3.1. Entrepreneurs' Effect on Startups' Views on Internationalization	22
2.3.2. Advantages of Being a Startup Within a Regional Innovation System	23
2.3.3. Challenges Facing the Startups' Internationalization	25
2.3.4. Risk Management for the Startup Firms	27
2.4. Model	29
3. Methodology	31
3.1. Research Approach	31
3.1.1. Abductive Method	31
3.1.2. Qualitative Approach	32
3.2. Research Design	33
3.3. Data Collection	34
3.3.1. Primary Data	34
3.3.1.1. Semi-Structured Interviews	35
3.3.1.2. The Interviewees	35
3.3.1.3. Secondary Data	37

	5
3.4. Data Analysis	38
3.5. Qualitative Assessment	39
3.6. Ethics	40
4. Empirical Findings	41
4.1. Interviews With the Supportive Systems and Other Data	41
4.1.1. Sahlgrenska Science Park	41
4.1.2. Interviews With Firms and Institutions at Vitalis Fair	45
4.2. Interviews With Startup Firms	48
4.2.1. Case 1	48
4.2.2. Case 2	53
4.2.3. Case 3	56
4.2.4. Case 4	60
4.2.5. Case 5	63
5. Analysis	67
5.1. The Startup and the Regional Innovation System	67
5.2. Science Parks and the Development of the Startup	68
5.3. How Startups View and Approaches Internationalization	69
5.4. Regulations within the Healthtech Market	70
5.5. Networking As a Startup to Internationalize	71
5.6. The Science Parks Support With Networks	72
5.7. Entrepreneurial Capabilities	73
6. Conclusion	74
6.1. Future Research Direction	76
7. References	77
8. Appendix	87
9. Index	89
Interview questions for the startups	89
Interview questions for the science park	90
Interview questions for the Vitalis Fair	91

1. Introduction

1.1. Background

The global market has become more and more developed and has played an increasingly important role over the 20th and 21st centuries. Compared to the pre-industrial revolution, the world has become more connected with the trade of goods and services stretching all over the globe (World Economic Forum, 2019). However, in the later years, there has been a shift in the perception for many about globalization and many have started to wonder if there is a future for globalization (The Economist, 2019; Harvard Business Review, 2021). With the global spread of the Covid-19 pandemic and some countries' failure to respond timely, it comes that many nations decide to move away from the globalized perspective (The Economist, 2019). For example, some MNCs have started moving their supply chains back to, or near, their home country, reducing reliance on foreign supplies, and pro-domestic production and financial measures. In general, the international order and the rhythm of globalization have been adjusted at an accelerated pace.

This phenomenon does not necessarily mean that the trend of deglobalization is leading to international trade disappearing, instead, it is shifting. While the world appears to be moving towards a more regional approach, the basic driving force of globalization, and the long-term development environment, have not fundamentally changed. Even after the Covid-19 pandemic, the trade of goods on the international stage is going strong (Harvard Business Review, 2021). The healthcare and healthtech industry has not only seen a growth of 260% in investments since 2016 (Mobilehealthnews, 2021), but also some data in 2020 shows that in this field, for example, the total procurement of the United Nations took the largest proportion, and it has continued to grow since the pandemic (Zhang, 2022). The Covid-19 pandemic has certainly given a huge boost to the development of health technologies such as telemedicine, wellness, education tech e-learning, and supporting business communication solutions such as teleconferencing and remote office meetings (KPMG, 2020). Furthermore, combined with the facts that the improvement of economic level, the continuous pursuit of high-quality life by the people, and a series of challenges such as environmental problems, population pressure, aging trend, and the spread of chronic diseases, have also promoted the vigorous development of the health tech industry. The medical attention and healthtech scale continue to increase and it has great potential in the international trading market (ibid.). At the same time, a new round of

technological revolution continues to subvert traditional economic and industrial models, and digital transformation continues to accelerate. This together with the growth of investments in healthtech firms has created a large opportunity for new firms to enter the industry (Mobilehealthnews, 2021). A lot of the focus on the effects of the pandemic on global trade and internationalization has been on larger multinational firms. However, as small and medium enterprises account for 90% of the world's economy (The World Bank, n.d.), they are of interest to study as they greatly affect the world economy. As the Covid-19 pandemic has also created a larger need for digital healthcare as mentioned above, it is thus interesting to look at how the healthtech industry, especially healthtech startups.

Given the above, the healthtech industry is the main interest of the thesis, especially the healthtech startups at the regional science parks. Startups are considered by many to be an increasingly important factor when it comes to economic growth for a country or region (Baraldi, et. al., 2019), and nowadays a large number of governments have used science parks globally to stimulate the regional economy by promoting the development of new technology-based firms and science-based industries (Theeranattapong, et. al., 2021). Furthermore, it is suggested that the startup firms inside the science park are expected to perform better and benefit from greater added value than those that are not (Lindelöf and Löfsten, 2002; Radosevic and Myrzakhmet, 2009). In other words, startups at the science park have the potential to grow and internationalize faster from the support. While there exist many different articles on the positive aspects of science parks, such as the support in developing networks (Ng, et. al., 2021) and the close proximity to universities and other institutions (Ng, et. al., 2021; Theeranattapong, et. al., 2021), there is not much written about why some startup firms decide not to work within the science parks. All in all, it is interesting to see what drives a startup firm to work and connect with the science park and how this affects the startup and its internationalization, with a factor of the Covid-19 may influence.

1.2. Problem Discussion

As previously mentioned, the world is currently undergoing profound changes unseen in a century, and the Covid-19 crisis has further impacted the world economy. Simultaneously, startup hubs in Europe are increasing in numbers at a fast pace, especially for tech-based firms (Startups and places, 2021). Although their scaling up can bring powerful growth capabilities to the local economy, it is noticeable that the transformation and upgrading of the healthcare economy, a complex and changing external environment, and the long-term impact of Covid-19 that they are facing can have serious implications (KPMG, 2021). Under these circumstances, running a startup is a risky venture. Not only does the firm most often have few resources with which to expand its business (Baraldi, et. al., 2019), but it also often lacks the critical knowledge that it needs to thrive in the local and global market (McGrath, 2010).

Startups and entrepreneurs have been a prominent phenomenon in contemporary research. Corporate internationalization certainly is a challenge for all economies and requires research on certain risks, strategies, and data. The fact is that many startups internationalize at an early stage in their life. Over 50% of startups internationalize within the first year, and in the EU over 86% internationalize within the first 3 years (Startups and places, 2021). This may even lead them, for example, to become international new ventures (INVs), born globals, or even born digital firms nowadays. While many studies exist on INVs, not much research exists on how entrepreneurial startups become such as INVs, born digitals, or why they look at internationalization in an early stage of the firm's existence. Moreover, while there are a lot of studies focusing on internalized firms, only a few studies focus on the pre-internationalization stage. Thus, the literature suffers from a survival bias where existing knowledge is based on successful cases. As healthtech is a novelty emerging industry (KPMG, 2020), the area of investigation regarding internationalization is still new. Also concerning many other challenges will occur when it comes to internationalization and combining the fact that the post-Covid-19 pandemic has made this particular industry grow (KPMG, 2020). Hence, looking into some healthtech startup firms' early-stage developments to understand the pre-internationalization phase even if they fail to enter foreign markets in the end, is absorbing. It is engrossing to systematically analyze healthtech startup firms, a variety of factors namely, the capabilities dealing with the newness,

entrepreneurs, networking, and so on, if the power of the intermediate support (science parks) has been fully utilized in the internationalization process.

Furthermore, startups might also not have existing relations with other actors. It can therefore be difficult for them to establish themselves in existing networks or create new networks due to the liability of newness (Baraldi, et. al., 2019). It has been believed that networks are an integral part of the existence of startups (Baraldi, et. al., 2019) and their path to internationalization (Johanson and Vahlne, 2009). Science parks are one of the ways startups can build networking capabilities and enter new networks (Ng, et. al., 2021). Considering networks growing importance within internationalization research, looking into how startups use networks and how they might be able to enter into networks through the use of science parks is of great importance, especially due to networks' effect on a firm's internationalization (Johanson and Vahlne, 2009). Since many RIS and startup articles have already talked about networks being a large part of the RIS, there are not many that go into its international implications. There exists a gap in RIS research regarding how science parks and RIS affect firms' ability to enter into international networks, also the limited research regarding science parks and RIS part in the startup networking as well as how it affects the firm's attitude towards internationalization.

Additionally, Theeranattapong, et. al., (2021) mentions universities often play a key role in both the RIS and science parks. They usually form a key and integral part of RIS and have tight links with the science parks. People such as taxpayers, generally have an uncertain view of how science parks, which are invested by universities, are being helped by the RIS. However, while there exists a heap of research considering the startup firms, not a lot of them take into consideration the use of science parks or other types of external research centers and how they affect the startup's internationalization. There are also limited insights into the dynamics of this relationship regarding the specific role of science parks (Theeranattapong, et. al., 2021). Seeing as RIS greatly contributes to regions and firms' competitiveness (Lindelöf and Löfsten, 2004), it is also intriguing to investigate how science parks could support the creation of internationally competitive firms and regions, especially how they connect and support startups in the early stage of their existence combining the influences from networks, and affect these startups' outlook about the international market. For example, if it has affected their decisions in the

internationalization processes and whether there is a positive correlation between startups working within a RIS together with science parks. Understanding these, could also further explain why some firms become born globals, INVs, or even born digitals.

Given the above, the research question is as follows:

1.3. Research Question

What support do science parks offer startups and how does it affect their internationalization?

2. Theory

2.1. Regional Innovation System

The regional innovation system (RIS) is a collection of many different factors, such as those supportive institutions, networks, and firms, e.g., that together form an environment that allows firms to compete on a global scale (Asheim, et. al., 2011; Coll-Martínes, et. al., 2022). The formation of a regional innovation system depends on the network relationships formed by various participants in innovation activities (Zhang, et. al., 2018). Participants in a regional innovation system form a network with the help of industrial networks and social networks or follow a common technological paradigm, which means in this innovation network, firms use the innovation resources to develop new products and technologies and form the output of the regional innovation system (ibid.).

The RIS helps with the knowledge transfer of firms which in turn helps the region to improve competitiveness. This knowledge transfer can occur through the exchange of information and people between firms and universities, having better access to networks (Lindelöf and Löfsten 2004). For example, universities are in many parts at the forefront of RIS (Brenner, et. al., 2011). The universities partake in R&D that might not be done by regular firms but will work with firms to implement their research to make it economically viable to sell. One of the benefits of being situated close to a university is that the knowledge spillovers can greatly affect the innovation of a firm (ibid.). In addition, being close to a university also brings with it the benefit for smaller firms that have fewer resources for R&D, since they can collaborate with the university to produce and sell their innovations (ibid.). Furthermore, firms can to a greater extent take advantage of newly graduated students searching for jobs when situated within a region containing a university (Ng, et. al., 2021). Consequently, these students will bring with them the knowledge that these universities see as important and will help the firms' hiring them to absorb the knowledge. This of course will be more effective if the firm's business is in line with what is being taught at the university. Lindelöf and Löfsten, (2004) also see that RIS greatly contributes to regions' and firms' competitiveness. Having a well-functioning RIS does not only support the region's economic development but also that of the individual firm (Lindelöf and Löfsten, 2004). This can be explained by the fact that it allows the region's entrepreneurial

capabilities to further be expanded, and firms that are closely linked with the institutions and actors within the RIS will see a greater amount of innovation.

The regional innovation system allows for the sharing of knowledge between different actors situated within the RIS network which in turn allows for greater innovation and entrepreneurship (Asheim, et al., 2015). Its purpose is to promote the generation, flow, update, and transformation of new technologies or new knowledge in the region. It is an interactive network system for the creation, knowledge transfer and storage, skills, and new products. The RIS participants form the network with the help of industrial and social networks or follow a common technological paradigm, which means innovation resources help to develop new products and technologies that form the output of the regional innovation system (Zhang, et. al., 2018). However, while being situated within a RIS might lead firms to come into contact with local networks they might not be able to enter into global ones (Chaminade, et. al., 2021). It is greatly affected if the industry demands it and the firm itself sees it as necessary for its competitiveness. However, being situated within a RIS will give the firm benefits, the construction of the regional innovation system will inevitably promote the development of high-tech firms and science parks in the region, and it will lead to the formation of emerging industries and new economic growth points in the region (ibid.). Science parks can certainly help startups to spread technology and form a larger-scale economic growth effect, which will be explained in the next chapter.

2.1.1. Science Parks

The number of science and technology parks has grown rapidly as more and more countries have begun to use science and technology parks as part of important economic development strategies and national or regional innovation systems (Chung, 2002; Cooke, et., al, 1997; Freeman, 1995). One of the institutions that often exists within a well-functioning RIS is the science park. As mentioned above, science parks can be briefly described as an institution that supports startups while most often being closely connected with universities and other higher learning institutions (Ng, et. al., 2021; Theeranattapong, et. al., 2021). The closeness to universities is also a factor that many of the firms within the science park sees as important when situated within it (Ng, et. al., 2021). The science parks are also more effective when situated closer to universities due to

the spillover effects not being as effective the further away the science park is situated (ibid.). A case study by An and Wang (2008) compared three successful science parks namely Stanford research park in the United States, Cambridge science park in the United Kingdom, and Hsinchu science park in Taiwan. After comparing and analyzing them from multiple perspectives, the common features of the above three university science parks have been found as follows. First, the science parks all build construction themes around the advantageous disciplines of nearby universities or research institutions. Second, all have maintained close cooperation and contact with local universities or research institutions. Third, all of them have established financing methods suitable for their development. At last, the government has played a certain role in promoting development. Also, according to Zacharewicz, et. al., (2017), a common feature of firms at science parks is that they are primarily knowledge-based businesses, which generally means a higher degree of technological innovation and utilization than the traditional businesses. And they are usually constantly exposed to the phenomenon of globalization and its inferences.

Because the firms within the science park often are in greater need of knowledge, the effect that science parks can have on these firms' knowledge gains is not negligible. Science parks as institutions work to further increase the knowledge distribution within a RIS which can be seen in its work supporting new startups (Ng, et. al., 2021). According to Ng, et. al. (2021), science parks can help with economical development by working together with firms to allow them to further expand their innovative capabilities. Their particular call seeks to help high-tech firms with their innovation. Firms that are active within science parks, in general, produce new patents at a higher rate than firms that are not active within science parks (Löfsten and Lindelöf, 2004). This can come as an effect of the knowledge spillover that is bound to happen when firms work close together (Ng, et. al., 2021). It is argued that science parks will lead to better networking capabilities for firms as they will be more likely to collaborate with other firms and institutions (Löfsten and Lindelöf, 2004; Ng, et. al., 2021). The science park allows firms to network at a greater ease and creates relations with firms within the science park at a higher rate, something which Ng, et. al. (2021) also found to be important while working within the science parks. Ng, et. al. (2021, p.4), describe the science park as being a “...policy tool to promote linkages between industry, research institutes, and universities”. Considering this, one can say that the science park itself is helping the firm develop its networking capabilities by being situated within

the science park. The science park can allow firms to come into contact with networks. Be that within the science park itself or external (Ng, et. al., 2021). The external network can be both regional and international and allows the science park to connect the startup with investors. This comes as an effect of the managerial capabilities of the science park.

For the science park to be effective its managerial capabilities must be taken into consideration (Ng, et. al., 2021). This is due to it being the staff within the science park that is responsible for the firms to be able to fully utilize being within a science park. Without the management and the staff of a science park, the firms would only be working together within a shared office. The managers help the firms with their networking within the science parks and make sure the environment of the science park is beneficial for the firms working within it (ibid.). It also allows for the firms to partake in the information that will be useful for firms when conducting business. This managerial capability also includes the administrators within the science park choosing which firms are allowed to be situated within the science park. They also help with lowering costs for firms. Together with often providing lower costs for office spaces, it will allow the firms working within the science park to spend those resources on other things that can be beneficial for their business (ibid.). This will allow the firms working within the science park to punch above its weight. What can be seen is that the science park greatly affects the entrepreneurship of firms and its networking capabilities. It also helps firms with their business while acting as a bridge between the academic world and the regional economy.

2.2. The Internationalization of a Startup Firm

Theoretical and empirical studies related to enterprise internationalization emerge in an endless stream. The 1977 Uppsala model represented by Johanson and Vahlne (1977) believed that each internationalization step cannot be regarded as an independent stage, so the object of analysis should be the whole process of internationalization. The model uses the research methods of the theory of corporate behavior, develops an independent theory to explain the continuous process of corporate internationalization, and proposes the stage theory of corporate internationalization. The model also proposed that the process of enterprise internationalization is a process in which firms gradually acquire, recognize and utilize international market and business knowledge,

emphasizing the importance of learning by doing. This in turn will further expand the amount of resources that the firm utilizes with their internationalization as they weigh risk versus reward. Furthermore, Forsgren (2002) pointed out that the international growth of enterprises depends on various learning opportunities, including imitative learning, cooperation with other firms, and the introduction of professional talents.

In sum, the traditional internationalization theories of firms described by the various scholars mainly involve two aspects. First, the way to enter foreign markets is to continuously extend along the sequence of value-added in the value chain, and the second is the expansion of markets to external countries is to proceed along the sequence of increasing psychological distance (An and Wang, 2008). However, these are not sufficient for people to fully understand firm internationalization behavior at the micro-level. Although the traditional theories have a significant influence on the research on the internationalization of firms.

In the period of the early 1990s, a considerable number of SMEs appeared that did not gradually internationalize as predicted by the internationalization process model, but began to internationalize rapidly and went international from the very beginning of their establishment, instead of stepping into the international market through a series of gradual stages (Madsen and Servais, 1997). These firms are known as born global firms. Knight and Cavusgil (2004) defined a born global firm as a technology-oriented small firm that was established and operated in an international market. For some small-scale high-tech firms which are considered born global firms, the traditional and progressive export route is not the only model. These startup firms have export business activities from the very beginning of their internationalization, they have sought a huge competitive advantage by utilizing their resource advantages and selling in different countries (ibid). Hence, if decision-makers in the startups have considered hastening the internationalization process, have had an international perspective or mindset, i.e., these firms see the whole world as a market at the beginning, aim and serve international markets, have a clear customer orientation, and strong ability to quickly adjust products to meet specific customer requirements, but only see the home country as a support for its international business, etc. If they had these characteristics of the internationalization process, unlike traditional nationalization processes, they are likely to have the potential to become born global firms.

While internationalization has always been considered a "dynamic process" (Johanson and Vahlne, 1977; Welch and Luostarinen, 1988), much of the research in the mid-1990s remained in a static paradigm (Casillas et al., 2012). Except for the "born global", the new internationalization theory researches appeared in the past three decades sorted by Liu (2012), also including the concept of an international new venture (INV) proposed by McDougall and Oviatt (1994), and the high concept proposed by Jolly et al., (1992) and technology start-ups concept. In addition, similar concepts include new venture firms, international entrepreneurship, global start-ups, small knowledge-intensive firms, and early-stage technology-based firms.

2.2.1. Born Global, International New Venture, and Born Digital

As discussed above, the rise of the concepts of "born global" and "international new ventures" (INVs) has highlighted the importance of accelerating internationalization as a core feature. McDougall and Oviatt (1994) defined an INV as an organization that has actively used multinational resources to seek competitive advantage and one that has sold products in multiple countries since its inception. This phenomenon is based on the higher and faster internationalization speed, which is opposed to Johanson and Vahlne's (1977) 1977 Uppsala model of traditional progressive internationalization. The explanatory power of traditional incremental internationalization stage theory is increasingly limited (Oviatt and McDougall, 1994; Kalinic and Forza, 2012; Cavusgil and Knight, 2015). This kind of international theory puts more emphasis on combining the concept of the time dimension to analyze the speed characteristics of the internationalization process, as well as pay attention to the time or speed at which firms enter overseas markets, and measure the speed of internationalization by the time interval between the establishment of the enterprise and the first year of internationalization (Ramos et al., 2011; Musten et al., 2010).

The revisited Uppsala model (Johanson and Vahlne, 2013) considers internationalization as a process consisting of two sorts of change variables: decisions committing the organization to a certain party, project, or strategy; and ongoing inter-organizational processes of learning, creating, and trust-building. International start-ups or born global firms also show different

behavioral logic in their strategic decisions such as overseas market selection, entry mode selection, and operation mode selection (Zahra and George, 2002), which often increase resource commitment or further expand the market scope to achieve (Jone and Coviello, 2005). The speed of internationalization includes two dimensions, first, its breadth includes geographical scope and product market scope, and its depth which is resource commitment level and choice of international market entry mode (Wang, et al., 2017).

In summary, in the past 30 years, there has been a new development trend in the research on international new ventures. Scholars no longer study the formation, growth, and performance of INV from a single aspect. Instead, it integrates other theoretical disciplines to explain the INV phenomenon in depth from multiple perspectives (Liu, 2019). First, the behavior-based INV theory pays attention to the analysis of entrepreneurs, studies the psychological characteristics, social attributes, and learning and innovation ability of entrepreneurs, and focuses on the driving role of the international network. Second, the comprehensive application of entrepreneurial theories, such as INV-driven theory and organizational learning theory, not only explains the factors of enterprise growth but also reveals the sustainable competitive advantage of enterprises. Third, by integrating economics, international business, and entrepreneurship theories, and conducting cross-study research from multiple perspectives, many new viewpoints and theories under different theoretical backgrounds emerge.

Moreover, Oviatt and McDougall (2005) pointed out that the entrepreneur's global vision and overseas experience are the key driving factors in determining international new ventures. Thus, the entrepreneurial spirit that will be mentioned later in this thesis may also be a strong factor to consider why a firm could become a born global during the beginning stage of the startup's approach to internationalization, which is, the higher entrepreneurial spirit, the higher the tendency of transnational operation of the firm may have.

Regarding born digital firms, these firms are characterized by business models that facilitate a higher degree of digitization, which in turn allows easier access to global markets (Vadana et al., 2019). Born digital firms are easily scalable (Hennart, 2014; Tippmann et al., 2018), and the broad market reach provided by digital means that born digital firms can quickly gain insights

from many users in many international markets (Monaghan et al., 2020). Digital technologies provide firms with increasingly effective ways to internationalize by digitizing parts of the value chain (Wentrup 2016). The reason is that user engagement is based on the digital processes, the relationship is immediate and has significant scale and scope. This helps to identify opportunities promptly, thereby accelerating further efforts to penetrate international markets or expand into new ones (Monaghan et al., 2020). Born digitals also have flexibility in how to configure and coordinate their international campaign system (Autio et al., 2018), which shows a certain degree of technical foundation. Its flexibility is also manifested in other aspects, such as a lower level of investment in physical infrastructure and possibly fewer related commitments in international markets, bringing physical flexibility. Another example is taking advantage of young firms' learning of new things (Autio, Sapienza, and Almeida, 2000). And there are also innate digital technologies that are inherently agile and responsive. These firms learn faster because they have more direct contact with international markets and the environment than traditional multinationals as Johanson and Vahlne (2009) argue. Their internationalization decisions reflect technical, physical, and cognitive flexibility. Automation through digitization has changed the nature of trust-building, opportunity identification, knowledge creation, and relationship development. The timing of establishing and nurturing the relationship assumed by Johanson and Vahlne (2009) is less critical for internationalization and new market penetration (Monaghan et al., 2020).

In addition, Monaghan et al (2020) state that the network effects that born digital firms have can rapidly internationalize, direct and indirect network effects that together provide this innate digital with the ability to rapidly create and coordinate user networks (Brouthers et al., 2016; Nambisan et al., 2019). This builds gravitational pull from the size of the user base, pulling the firms to internationalize as it begins to serve new national markets in response to the intensity of user interactions in those markets (Chen et al., 2019). Brouthers et al. (2016), Nambisan (2017), and Wentrup (2016) also indicate this kind of digitization as a developmental phenomenon in entrepreneurship. However, not all startup firms can become born-digital firms even if they are planning to at the very beginning.

2.2.2. Networking's Role Internationalization

Networks have become an increasingly important subject in explaining internationalization. Without networks, internationalization would become more costly for firms and business opportunities might be missed (Johanson and Vahlne, 2009). Johanson and Vahlne (2009) write about what they defined as the “liability of outsiders”. They argue that firms that are not a part of a network will have greater difficulties when it comes to internationalization as they can not take part in the advantages that come with being in a network. In addition, Johanson and Vahlne (1990) hypothesized that the network of relationships is part of how a firm gains market knowledge, which is based on experience with existing business activities or existing business exchanges. As firms collaborate within a network they stand to gain knowledge from other firms regarding markets and other parts of the firm's business. This would mean that the firm could gain market knowledge without ever having done any business there before, which, however, is in stark contrast with the 1977 Uppsala model by Johanson and Vahlne (1977) on how a firm gains knowledge. Furthermore, Johanson and Vahlne (1990) also assumed that direct or indirect bridges exist between firms and between different national networks, which are important for firms to go overseas initially or to enter new markets later. Being a part of a network can greatly affect firms' entrepreneurial capabilities (Baraldi, et. al., 2019). This might in turn lead to new business opportunities for the firm as they collaborate with different actors in foreign and local markets and get knowledge about the different opportunities that they might have missed if outside the network (Johanson and Vahlne, 2009; Schoonjans, et. al., 2013).

However, while being in a network is beneficial for firms, there also exist limitations for them when it comes to handling networks and the actors within them (Mitrega, et. al., 2012). A network is a bundle of relationships between different actors. There therefore exists a great need to manage these relationships, as well as a great need to develop networking capabilities to alleviate some of the problems that exist while working within a network (ibid.). If this is not done, the firm might not see the results that they are after and it might even be to the firm's disadvantage to be in the network. Thus the firm needs to combat this problem. Johanson and Vahlne (2009) describe trust as an important component within the existence of networks. Without trust, firms will be less likely to collaborate due to the fear of being taken advantage of. This in turn can lead to a loss of efficiency within the network for knowledge transfer as the

firms are less willing to share what they know. The transfer of knowledge is extremely important when it comes to the networking of firms but it also builds on the trust between firms (Johanson and Vahlne, 2009).

Being within a network also takes resources that firms might use for other things (Barney, 1991). There therefore is a need for the firms to weigh the risks of being outside a network with the costs of managing the network. As has been mentioned before, by being in a network, firms will be able to gain access to knowledge that might have taken years to develop by themselves (Johanson and Vahlne, 2009). The number of resources needed to gain this knowledge might outweigh the cost of being within the network. The gained resources and knowledge cause an issue that has to be addressed within a network is that of its diversity. According to Baraldi et. al. (2019), firms benefit from their network not being too homogeneous. If the network partners are too similar, it can lead to stagnation of new ideas, and the benefits from being within a network would therefore be jeopardized.

Furthermore, networks can also be the reason why startups get created as well (Baraldi, et. al., 2019). As new business ventures can be explored through discussions together with the network partners, entrepreneurs might jump at the opportunity to create a new business venture due to the personal network they are a part of. But being a startup also means that the firm is more likely to be less established when it comes to its relationships with other actors in the industry (Baraldi, et. al., 2019; Schepis, 2021). It might therefore be difficult to know where the firm's place is within the network which can lead to difficulties in working together with the other network partners. However, seeing all this, it is still beneficial to enter into networks due to, as previously mentioned, the knowledge firms might acquire from working together with other firms and institutions.

2.3. Startups

Startups cannot innovate by just themselves (Chesbrough, et. al., 2006; Walrave, et. al., 2018), especially high-tech startups. As healthtech is one of the emerging industries, Fukugawa (2018) indicates that the startup firms of this kind of industries rely heavily on external players to

enhance their capabilities. The size and resource constraints of startups make it easier for them to work closely with different players, helping them overcome internal flaws and create value together (Rothaermel and Deeds, 2004; Marcon and Ribeiro, 2021). In the thesis, science parks, as one of the players, work closely with startups. As startups usually rely on different resources at each growth stage (Fukugawa, 2018).

The startups, especially those incubated exclusively at science parks are often seen as originating in university research before entering the wider world. The science parks create geographically concentrated clusters of innovation startups and can also provide financial support for their innovation (Paul and Alex, 2020). Ries (2011) describes startups as businesses that create new products or services under highly uncertain market conditions. Startups often play an important role in bringing new technology to market, not least because they are responsible for developing radical innovations that lead to economic growth (Colombelli and Quatraro, 2019; Fukugawa, 2018). Although startups can create and bring a lot of value, the statistic from Startup Genome (2019) shows that from 2017 to 2019, startups created \$2.8 trillion in economic value globally. Unlike large firms, startups find it difficult to use traditional business models to create value (Blank, 2013). And not every startup would survive successfully, Hyder, and Lussier's (2016) research shows that more than 80 percent of startups fail in their first year of existence. One of the reasons, aside from the uncertainty of their inherently innovative nature, startups have no experience. According to Magretta (2002), when a firm starts its operations, its initial business model, including motivations and economic issues, is subject to time, constant market testing, and validation. Nevertheless, while startups might not have previous experiences when it comes to internationalization, it is more critical to see whether the decision-makers, like CEOs, have rich experience as an entrepreneur. For instance, the entrepreneurs who have management experience or positions before starting the startup business are usually more experienced to identify the possibility of selling products abroad. Skills, competencies, and the networks accumulated from the previous business operations can influence decisions to enter international markets (Cooper, et. al, 1994).

Networking is also a dominant element in startups. Granovetter (1973) underlines that an effective relationship network within startups can help them to promote the rapid flow of

information. It is also beneficial for building trust among network members and improves the resource acquisition ability of entrepreneurs. It will bring more benefits to the economic behavior of firms, especially at the startup stage.

2.3.1. Entrepreneurs' Effect on Startups' Views on Internationalization

An entrepreneur is someone who creates a new business, takes most of the risk, and enjoys most of the reward. Entrepreneurs are often seen as innovators, sources of new ideas, goods, services, and businesses or procedures (Hayes, 2021). In the thesis, entrepreneurs are particularly meant at startup firms, which may have or may not have much experience. It has been shown by Thomas (1999) that some people who have worked in a small business or have previous entrepreneurial experience are more likely to become entrepreneurs. As there is always a high risk when starting a business, entrepreneurs in this industry are generally willing to take risks, embrace uncertainty, and have the innovative ability.

An entrepreneur is said to be someone more likely to take risks by nature while looking to gain rewards by taking these risks (Adam, 2021). It is argued that the more entrepreneurial a firm or person is, the more likely they are to look at the international market opportunistically (Liesch, et. al., 2011). Similarly, Terjesen, et. al. (2016) also discusses the importance of the characteristics of startup founders in exploring international opportunities. Seeing as there is a large risk for firms to internationalize, it is then no surprise that more entrepreneurial firms will look towards the international market more favorably. According to Lindelöf and Löfsten (2004), smaller firms tend to be more entrepreneurial and therefore more prone to taking risks in their business decisions. Part of this can be attributed to startups taking risks and only entering the market with limited resources and experience. But this risk can be mitigated to some extent. The startup, as a means to compete or avoid competing with larger firms and therefore being at risk of getting outcompeted, can instead focus on developing niche products and services.

Moreover, the international new ventures theories and practices have already shown that entrepreneurs and management talents with global vision and experience play a vital role in promoting the international development of small and medium-sized firms. Entrepreneurs who

have a strong entrepreneurial spirit, which is an important reason for the emergence of born global firms, born digital firms, or INVs (Ji, 2010). The entrepreneurial spirit refers to the enterprising spirit, professionalism, desire for success, and professionalism of having the courage to take risks related to the firm and obtain the firm's competitive advantage through innovation (ibid.). Lindqvist (1988) points out the phenomenon that some small high-tech firms prefer to go directly to distant markets and establish their branches more rapidly, rather than following the traditional internationalization model. This would also mean entrepreneurs are more willing to take risks and they have the entrepreneurial spirit, which can lead firms to success in internationalization. In addition, the case study of Crick and Jones (2000) shows that the prior work experience of startup entrepreneurs in international markets has helped them to accumulate considerable experience in handling complex international operations and risk and resource assessment, as well as establishing entrepreneurial customer networks and market contacts available later. This research conclusion can explain to a large extent why international new ventures can adopt an export-oriented market expansion strategy in the early stage of establishment. Moreover, from the perspective of knowledge acquisition (Oviatt and McDougall, 2005), the entrepreneur's prior experience enables new ventures to have a stronger absorptive capacity, which can catalyze the acquisition of additional knowledge needed to quickly enter the international market. Similarly, research by (Copper, et. al., 1994) shows that educated entrepreneurs generally have higher expectations, and improved problem-solving abilities.

Furthermore, from the perspective of human resource allocation of small firms, knowledge, skills, talent, and experience that make up human resources provide value to enterprises, and these values are related to the internationalization of enterprises (Fletcher, 2004). The internationalization experience of business owners and managers, including awareness of foreign cultures and foreign business practices, tends to lead to better performance in internationalization (Brush and Chaganti, 1998; Leonidou, et. al., 1998).

2.3.2. Advantages of Being a Startup Within a Regional Innovation System

It is typical that startups have higher exit rates than established firms because they often lack market research, empirical knowledge, experience, and resources (Sean, 2022). Thus, those

startups that survive tend to have greater growth potential than established firms. It might be because, as Knight and Cavusgil (1996) pointed out, the inherent advantages of small size business contain rapid response, flexibility, and adaptability that can be effectively used. But on the other hand, because the large cities have the necessary location conditions for the layout of high-tech science parks, and at the same time, they must also have the necessary conditions for the development of high-tech industries, such as intensive intellectual resources, developed economy and technology, complete infrastructure, rich information resources, and superior living environment (Su, et. al., 2020). As a positive result, inside science parks, the proximity of business sectors and activities can enhance interactions between people and expand networks to support the development of innovation. It can be an advantage as Schoonjans, et. al. (2013) states that the networking focuses on the smaller firms as they would allow these firms to overcome some of the problems that might occur due to the lack of resources and knowledge within the firm. The social environment of science parks can not only establish mutual knowledge exchange in professional fields but also the distance between the startups can support the transmission of key information to promote innovation development (Su, et. al., 2020). From Porter's (1990) theory of industrial clusters, in this case, the powerful cluster environment created by science parks can promote regional industry-level growth by promoting operational efficiency and improving returns on such as business expansion, capital investment, productivity, innovation, knowledge flow, networks and so on. Especially the exchange of tacit knowledge can stimulate the generation of new thinking and new methods (Zhang, et. al., 2018). Due to the existence of the learning curve, it becomes easy and low-cost for startups in the cluster to learn new technologies.

Delgado et al., (2010) also explained that the existence of a strong cluster environment from the exterior can reduce barriers to entry and growth and enhance regional comparative advantage, which is the core driving force for entrepreneurial vitality. Audretsch and Feldman (1996) also say that firms in high-tech industries tend to exist in clusters. In addition, according to Porter (1998), Saxenian (1994), Swann et al., (1998), and Feldman (2001), clusters enable entrepreneurs in startups to develop and commercialize new technologies more quickly by reducing entry costs and increasing innovation-based opportunities. It also fosters the formation

of new businesses and accelerates the growth of startups. Accordingly, it allows startups to leverage local resources to expand new businesses faster and even go international faster.

Furthermore, as has been mentioned in the last chapter, it has been discussed that entrepreneurs' experience has greatly eliminated the uncertainty of the international market and reduced the difficulty of globalization, shortened the distance with competitors in terms of resources, and their experience can adjust the business strategies according to market needs, as well as faster access to more distant foreign markets. At the same time, compared with those who startup entrepreneurs have extensive business experience, despite some entrepreneurs having no experience and there are existing large gaps in their characters, pioneering, and behaviors, some researchers (Li, 2008) believe that compared experienced entrepreneurs, novice entrepreneurs are more likely to control the export behavior of enterprises. Either way, it can also be seen as an advantage as well.

At last, it will be also explained in the following chapters that the regional innovation system (RIS) can also be seen as an advantage for small firms. As the RIS can provide new technologies and various technical services in the region, carry out technology diffusion, and form a larger-scale economic growth effect (Zhang, et. al., 2018).

2.3.3. Challenges Facing the Startups' Internationalization

It is considered that startups have insufficient resource requirements when the internationalization process begins. For many firms, internationalization is a crucial step for firms as it means spending resources in trying to penetrate a new market that they might know little about. And knowing when and how to internationalize can be challenging. The challenge is especially apparent when it comes to new startups as they often have limited access to resources, such as manpower, financial means, and more (Baraldi, et. al., 2018). Startups also struggle with the responsibilities associated with their novelty, relatively small size, and foreignness (Zahra, 2005). It can be concluded that in the entrepreneurial practice, most entrepreneurs are faced with double constraints that are, the liability of newness (Freeman, et. al., 1983; Shane, 2003; Ruef, 2003; Zahra, et. al., 2008) and the liability of smallness (Aldrich and Auster, 1986; Baum and

Amburgey, 2002). The core the liability of newness is the lack of legitimacy (Aldrich, 1999), as being said, new ventures usually lack sufficient capital, material or professional development opportunities (Shane, 2003; Baker and Nelson, 2005), and it is difficult to absorb external resources or financing costs so high that new firms are forced to dissolve (Sapienza and Gupta, 1994; Dushnitsky and Lenox, 2005; Desa and Basu, 2014). At the core of the liability are the uncertainty of growth, the difficulties that smaller firms cause in recruiting and training employees, and the relatively high overhead (Aldrich and Auster, 1986; Baum and Amburgey, 2002). Besides, the smaller firms also encounter legal problems with outside shareholders (Baum and Oliver, 1992; Stuart, 2000). Due to startup smallness, due to startups' smallness, the productivity of the firm is lower than the minimum efficient size (Audretsch, 1995; Ebben and Johnson, 2005).

According to Johanson and Vahlne (1977), internationalization activities include a series of decision-making behaviors that invest existing resources in international market operations. These resources include human, material, financial, etc., and the decision to invest resources is made according to the challenges or opportunities perceived from the international market, and this perception is derived from empirical knowledge. Therefore, the more accurate and comprehensive the knowledge about the market, the more valuable the resources and the stronger the investment in the market, and vice versa, especially empirical knowledge. This experiential knowledge is tied to a specific market environment and cannot be transferred to another person or market (Xiao and Chen, 2008), which is more challenging. However, even though some startups were able to interact with some firms and network partners, they still faced the problem of the limited interaction and were unable to use these connections to demonstrate market credibility (Sharma and Blomstermo, 2003).

Thus, when startups begin to internationalize, some challenges can be seen to gain the experience and knowledge to identify opportunities and other resources to invest in international markets. For small high-tech firms, the importance of network resources for going overseas, entering new markets, and crossing the internationalization stage is more prominent (Johanson & Vahlne, 1990). Furthermore, during internationalization, startups are unfamiliar with local cultural norms, local market knowledge, business system regulations, and other aspects of legitimacy, which

limit their ability to identify and access local knowledge and resources (Eden and Miller, 2004). It is also challenged by the lack of ability to cope with complex political and social relations in the host country. Moreover, it also needed to consider certain macro factors that the development of digital platforms, government ecosystem investments, and venture capital fragments affect the development of startups (Startup Genome, 2018).

2.3.4. Risk Management for the Startup Firms

Risk is something that has to be considered during any decision-making process and any steps taken by firms. Johanson and Vahlne (1977) describe the perceived risk of internationalization in the 1977 Uppsala model as the lack of knowledge of a certain market. Risk within the context of internationalization is due to a lot of different factors. One of these factors is the limited knowledge of how foreign markets work (Johanson & Vahlne, 2009; Liesch, et. al., 2011). The firm might not be well versed in the culture of the country they are conducting business in, or the firm might not be knowledgeable of the institutions within the country. This creates a risk for the firm as this knowledge is crucial for the firm while operating in a foreign market. The risk might be somewhat alleviated in the mode in which the firms decide to expand on the international market, be it export or foreign direct investments (Johanson & Vahlne, 1977; Liesch, et. al., 2011). Although, this does not remove risk for the firm since the firm might not possess the correct knowledge to take full advantage of their internationalization. The lack of knowledge can negatively affect a firm's decision on whether to enter a market or not. However, as mentioned before, networking can have a positive effect on the knowledge of the firm and this is also the case for the firm's market knowledge (Johanson and Vahlne, 2009). This in turn can mitigate the risk of entering foreign markets as it is possible that they would be supported by firms with already existing market knowledge. But at the same time, networking can also bring with it other risks for firms. One such risk mentioned by Mitrega et. al. (2012) is that the firm might be taken advantage of within the network as the other firms might seek to gain advantages from the collaboration while the other firm might gain few advantages if none at all. To combat this, the firm must focus some of its resources on building trust and relationships with other firms. But since resources are scarce for a startup, they might not have enough resources to make sure that the relationship and trust are enough to not get taken advantage of.

The firm will have to create trust and a relationship with the other collaborators (Schoonjans, et. al., 2013). However, doing this will not only be time-consuming but can also be quite costly for the firm. As smaller firms often have fewer resources it can be difficult to manage their network (Baraldi, et. al., 2019). They would therefore have to weigh the risk of being left out of the network, while also considering the negative effects of the liability of outsidership, to the risk that might come from being within the network (Johanson and Vahlne, 2009). Having said that, being inside a network might make it so that they are not affected by the liability of outsidership the firm will still have to consider the liability of newness (Baraldi, et. al., 2019). It might be difficult for a firm that is still very young to know where to place itself within a network. This can be explained that the firm might miss out on opportunities with being in the network due to other firms finding it more difficult to work with them due to their legitimacy. This can be mitigated by focusing on the firm's relationship with other firms within the network and the firm's identity towards those firms. The firm might have to adapt different identities with different firms until it has established itself fully within the network (ibid.). It underlines that more resources would be needed for relationship management, something which the startup often has little off. Being situated within a science park might somewhat lower the costs of networking as the management of the science park helps the firm with networking together with other firms at the science park (Ng, et. al., 2021). The science park might allow the firm to save on resources that it would have had to spend if working on its outside of the science park. These resources could then be spent to help lower risks as well as build relationships with other firms and establish them within networks. This could therefore be seen as a risk-mitigating factor since the firms themselves would benefit from the support of the science parks to lower costs and reduce threats (ibid.).

2.4. Model

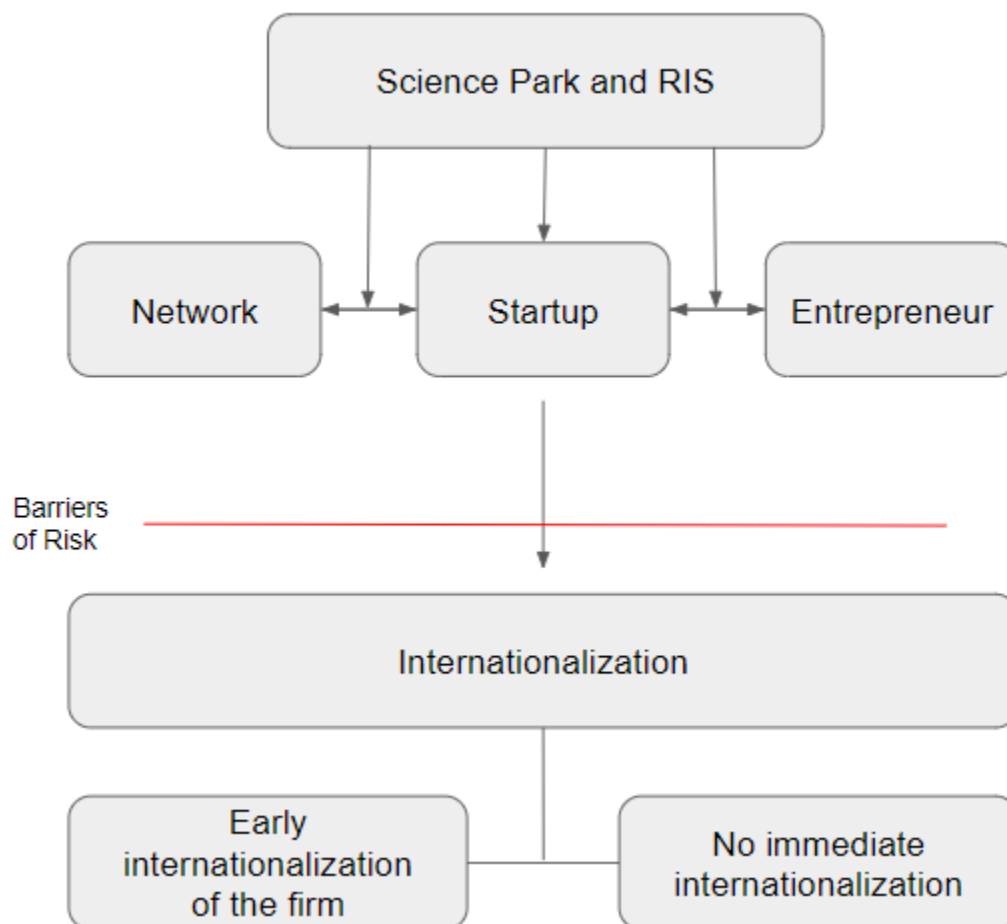


Figure 1: A model of the suspected relationship between the startup, network and entrepreneur when it comes to the startups internationalization and how the science park and RIS affects these relations.

The literature review has highlighted a need to understand the relationship between how startups working within a science park affects the startup's internationalization. The model in *figure 1* was developed to understand the different relations between the theories to further understand the startups working within science parks internationalization and how it is supported by the science park. One factor that can be seen as important in the literature when it comes to the firms'

internationalization is the network and the firms networking capabilities. Since networks often are a leading factor for a firm's internationalization it becomes an important factor to look at. A firm needs to take into consideration its networking capabilities as it allows the firm to lessen the risk of entering new markets through the knowledge that can be procured through the network. The startup, therefore, has an incentive to enter into networks and would benefit in their internationalization by being a part of one. By being within a science park the startups work together with other firms and institutions that are active within the science park at greater ease. Being situated within a RIS may also allow the startup to enter into international networks with greater ease. This, therefore, leads to the startup developing networking capabilities and therefore makes it easier for the startup to enter into new networks. The science parks themselves also lead to different benefits when it comes to the knowledge of the firm. Through the managerial capabilities of the science park as well as its connections with higher learning institutions, they can help develop the startups working within them and thus making them more ready when it comes to before and during the launch of their products. Seeing as the science park can support the development of the firm it can also be seen as developing the entrepreneurial capabilities of the startup. This in turn will boost the likelihood for the startup to internationalize. However, there will exist barriers that the firm has to overcome to expand into foreign markets. One of these barriers is the risk the firm will have to face when internationalizing. This risk will be mitigated by the networking of the firm and the support it gets from the science park. The entrepreneurial capabilities that the startup possesses will also affect how the firm sees the risk. So seeing this, the startup will, according to the model, see the barrier that is risk and either choose to pass it or stay in the home country for the time being. The willingness to overcome these risks will be affected by the network, entrepreneurs within the firm, and the support given by the science park and RIS.

Hence, hypothetically, as the model describes, the science park will help build up the capabilities of the startup and its employees while also having an environment that allows the firm's networking capabilities to develop. This would in turn allow the startup to internationalize at a more rapid rate should all criteria be filled. Whether the criteria are met or not, it can either lead to the firm internationalizing at an early stage, success and thus becoming a born global. Or fail with internationalizing, or see the risk as too high and therefore stay at the local market.

3. Methodology

3.1. Research Approach

3.1.1. Abductive Method

The thesis was conducted through an abductive approach. According to Bell, et. al. (2019) an abductive approach allows for solving a “puzzle” through the use of existing theories and interpretations. In addition, using an abductive approach allowed for a better understanding of how the different theories used to explain internationalization and startups, together with their supportive infrastructure, worked together when it came to the outlook that startups have on internationalization. The abductive approach was deemed more favorable than the deductive or inductive as the aim of this thesis is to look at how startup internationalization is affected by science parks. The deductive approach is more favorable when it comes to the creation of new theories and the inductive for when one aims to see if a theory works in the real world (ibid.). Since the aim of this thesis was for the development of theory, rather than generating new theories or confirming old ones, the abductive approach was deemed to be the best fit for the thesis. By using an abductive approach one can get a better understanding of both the empirics as well as the theories used as they both affect what will be used to explain the other (Dubois and Gadde, 2002). While there was an understanding at the beginning of what type of theories the thesis was to use, a lot has been added as the prior theories could not fully be used to understand the problems surrounding the startup and its internationalization concerning the relations with the science park. While conducting the interviews, some questions arose that could not be answered by the theories that were used. In the words of Dubois and Gadde (2002, p. 555), “...theory cannot be understood without empirical observation and vice versa”. Therefore, there was a need to find theories that could better answer the answers given by the interviewees. The text also had to be almost fully rewritten as the first research question was not feasible to research as it was too broad, as well as very difficult to measure in any concrete way. This however did not change the broader aspect of the thesis, to study startups within science parks and their internationalization. When this happened quite early on in the writing of the thesis, not much had to be changed as only the literature review and introduction had been worked on at that moment.

3.1.2. Qualitative Approach

During our research, the multi-dimensions of startups will also be analyzed, as well as the role of entrepreneurs, networking, the startups' connection with the regional innovation supports, and how all of them function together to contribute to a firm that will internationalize from an early point in its existence. A qualitative study method was used due to earlier research on science parks' effects on the internationalization of startups. When not a lot of information is known about a subject it is more to the authors' advantage if the study is done qualitatively rather than quantitatively (Ghauri and Gronhaug, 2005). Since the interviews were to be done with startup firms, which often have far fewer members of staff compared to older firms, the qualitative method was the go-to method. This was because the people working within startups often have to fill multiple roles in the firm and be much more involved. The qualitative study method was therefore chosen as it allowed for a better understanding of the experiences that those interviewed had regarding the subject of this thesis (Yin, 2008).

However, qualitative interviewing which contains more open-end questions may require intense listening and a systematic effort to truly hear and understand what people tell you (Rubin and Rubin, 1995). Hence, as researchers, it is important that during interviews, speaking in modest amounts and being non-directive, stay neutral, for example, using proper body language and words without any bias (Yin, 2008). It is also important for us to keep in mind that we are supposed to learn from people's perspectives rather than study them (Spradley, 1979). In addition, non-directive will be throughout these semi-structured interviews, practicing before interviewing to move away from our natural spoken patterns. Due to the time limitations for the thesis, five startup firms working within Sahlgrenska science park, the CEO of Sahlgrenska Science Park, and some firms and institutions at the Vitalis Fair were interviewed. Due to the limited number of firms interviewed it is not certain whether the findings can be attributed to all firms. In addition, since only the healthtech industry is reviewed in this thesis, there is also the possibility that the experiences within other industries differ greatly.

3.2. Research Design

The thesis set out to understand the underlying factors as to why startups might choose to internationalize at an early stage of their existence considering the lack of resources and knowledge that the firm possesses, as well as the high amount of risk internationalization can bring with it. The thesis chose to focus on the supportive aspects of what could drive a startup to internationalize due to much focus on early internationalization has been on the capabilities of the startup after it has internationalized and not what would have the firm gain these capabilities from the beginning. For this, a multiple-case study design was chosen to answer the research question. A multiple-case study is most often recommended when conducting a study since it means you do not “put all your eggs in one basket” (Yin, 2002, p. 55). It allowed for the testing of the theories used in this thesis for firms that might have many different experiences when it comes to their internationalization. In our thesis, Swedish healthtech startups working together with Sahlgrenska Science Park were chosen as they were still early in their life. And they were interviewed to give their perspectives on how they view the international market as well as what drives them to internationalize or stay in the local market. The reason that Sahlgrenska Science Park fits our research target well is because it is providing a strong startup scene within the life science industry, also it is situated within a strong RIS. The subject also stems from the author's interest in further understanding how smaller firms might come to expand on an international stage. Furthermore, the healthtech industry is one of few thriving industries which have seen quite a large growth during the recession caused by the Covid-19 pandemic. This made the industry a particularly interesting one to look at if the chance of new startups wanting to internationalize is greater. It was therefore also of interest within the interviews to understand the effects that Covid-19 might have had as it has greatly affected the whole global market. The firms interviewed were purposefully carefully chosen as they exist within a high-tech industry that could benefit from selling their products abroad from an early stage in their life. This type of method of choosing interviewees is known as purposive sampling and was chosen to find relevant firms to answer this thesis's research questions (Bell, et. al., 2019). The purposive sampling allowed for relevant firms for the thesis to be interviewed as they fit within the boundaries of the research questions. We precisely designed three kinds of interviews resplendently for people who work with startups and those who work with the science park itself

to make sure that both the view of the science park and the views of the firms working within it could be taken into consideration.

In addition, the authors had a chance to participate in the Vitalis fair that was held in May 2022, which is the largest eHealth event in Scandinavia and contains at least 165 exhibitors within the industry (Vitalis, 2022). During the fair, the authors randomly interviewed some people from different firms, as well as people who work in Health Tech Nordic and the Gothenburg region. As the Vitalis fair attracts a tremendous number of decision-makers from the health industry and social welfare community (Vitalis, 2022). As researchers ourselves, it is important to get insights and talk with different firms to see how they approach their internationalization, whether or not they are situated at a science park, as well as discover entrepreneurs, and so on.

3.3. Data Collection

3.3.1. Primary Data

For this thesis, several interviews were conducted. Five of these interviews were with people working in firms that operate at Sahlgrenska Science Park. The CEO of Sahlgrenska Science park was also interviewed to understand their work with startups. The last interviews was through some interactions at the Vitalis fair to understand more about the industry as a whole. The primary data was collected with the use of first-hand qualitative interviews. The interviews were recorded with their consent to ensure that misunderstandings on the part of the interviewees were less common to occur. The interviews were conducted both in-person and via other channels, such as Zoom. Whilst it is better to hold interviews in person, due to body language and other aspects are not shown as well when conducting the interviews over the phone or the internet (Bell, et. al., 2019). As the circumstances surrounding the Covid-19, it was not possible to conduct all interviews in person, so the interviewees got to decide which option would fit them the best. The interviews were done in both English and Swedish. When the interviews were done in Swedish, the text was translated into English and written down to make sure that the person reading the thesis could understand what had been said. As was mentioned before, while conducting an interview, it was important for us not to ask too many leading questions as this has the possibility of skewing the answers given (Yin, 2008). Asking leading questions holds the risk

of becoming biased as they are searching for an answer which is in line with previous thoughts and ideas that the interviewers might hold.

3.3.1.1. Semi-Structured Interviews

To adapt this qualitative study, semi-structured interviews were conducted. We chose semi-structured interviews because according to (Yin, 2008), it is a more popular and preferred way. The structured interview questions are relatively close-ended and cannot understand the trends and contextual conditions of participants over their lifetimes, whereas semi-structured interviews are more flexible and may focus on the trends and other conditions. This was also useful because of a variety of perspectives that the interviewees might have in their work in a startup, and the qualitative method, together with semi-structured interviews, was better able to explore. Bell et. al. (2019) described a semi-structured interview to be beneficial as it allows the interviewers to further expand on the answers given by the interviewees. As the firms interviewed were also all in different stages of their business and internationalization, it gave some room to ask questions that the other firms might not be able to answer considering at what stage they are.

3.3.1.2. The Interviewees

The firms that were to be interviewed were first contacted via phone calls. To find the firms' contact numbers we had to look at what firms were situated at Sahlgrenska Science Park. After these numbers had been found, each of them was called to see if they were interested in being interviewed and to see if they fit the criteria of being a healthtech startup working at the science park. In most cases, the firms answered positively to being interviewed, and more information regarding what the interviews were going to be about was sent to each one of them as an email. After getting a positive response regarding the interview, a time and place were set up with the firm in question for when, how, and where the interview thesis took place. When a Zoom meeting had been decided upon, a Zoom link was sent to the interviewee and the interview was recorded. All firms were informed about them being able to remove certain parts should they deem that part to be confidential or to be able to harm their business. The option to be

anonymous was offered to one firm that asked about it and had been an option for all those interviewed.

The firms interviewed were all in different places when it came to their business and internationalization. The age of firms is from under 2 years to over 19 years. This was still under the criteria that we had set as all the firms interviewed had been startups within Sahlgrenska Science Park and therefore had valuable input when it came to the science parks' role in the internationalization of startups. As some of the firms had already internationalized their products as well, questions regarding the science parks' input into this internationalization could also be asked which helped with answering the research question.

The person interviewed at Sahlgrenska Science Park was the CEO, Charlotta. It was decided to interview the science park itself as it would gain some insights into the work they do when looking at the firms' internationalization. The questions asked to Charlotta were tailored to fit more into the work that the science park does, as the questions asked to the other firms would not work in this regard.

Some firms and institutions that were at the Vitalis fair were also interviewed. They were offered to be anonymous if they would have wanted to be. Also, the interview questions were tailored to fit more into the more casual talk that was had with the firms during the fair. The firms interviewed here ranged from newer startups to firms that had been bought once launched their products. Health Tech Nordic was also interviewed at the fair as their name had appeared a great number of times during the interviews and it was deemed as important to further understand their work. These interviews were not recorded as the other interviews but the answers that were given were instead written down in a notebook.

In summary, *Figure 2* is a list of parties we interviewed during the thesis before gaining empirical findings.

<i>Number</i>	<i>Firm/Work unit</i>	<i>Interviewee</i>	<i>Interview Date</i>
1	MediCase	David	04/20/22
2	Joyvest	Isak	04/29/22
3	Dizlin	Björn	05/06/22
4	anonymous	anonymous	05/10/22
5	Calmino Group	Tobias	05/12/22
6	Sahlgrenska Science Park	Charlotta	05/04/22
7	Vitalis Fair	Multiple interviewees	05/18/22

Figure 2: The people interviewed for the thesisä, which firms they belong to and the date off which they were interviewed

3.3.2. Secondary Data

The secondary data for this thesis was collected mainly through the means of searching for information on Google, as well as looking at the different firms and the science park's websites. Google was used as it is the most popular search engine of today. Google was mainly used to find sources for use in the background and problem discussion chapters. This allowed for the creation of a better understanding of why our specific subject is important in today's world. The data collected from the websites of the science park as well as the interviewed firms was mainly used to give some background into the firms before each interview, as going in without having any prior knowledge about them would be detrimental when conducting the interviews.

3.4. Data Analysis

For a qualitative study, one of the main problems is finding a way to analyze the data that has been collected (Bell, et. al., 2019). As qualitative interviews generate heaps of data, a problem that does not exist in the same way when using a quantitative method, one must find the parts which are of interest for the analysis out of the answers that one has received. Therefore, to analyze this thesis, a method that would be able to single out important data was needed. It was decided that a thematic analysis was the best method for this job. The thematic analysis in the words of Nowell, et. al. (2017, p. 2) is “... *a qualitative research method that can be widely used across a range of epistemologies and research questions. It is a method for identifying, analyzing, organizing, describing, and reporting themes found within a data set*”. Thematic analysis is argued to be the best method to analyze the different views of the people interviewed and look at how they might differ from each other. In this thesis, there were many different firms interviewed with differing experiences, ages, internationalization, etc. The thematic analysis was deemed to be the best fit for understanding the data collected from these interviewees. Considering also that the science park, of which they are a part, was analyzed, the thematic analysis allowed for their point of view to be compared to that of the firms.

The method of analyzing through the use of thematic analysis is that you should first familiarize yourself with your data (Nowell, et. al., 2017). One must actively go through the data that has been collected and look for patterns that might occur in the answers given during the interview. The second thing that should be done during a thematic analysis is generating initial codes. This comes after getting an understanding of the data and seeing what could be of interest in that data. The interesting data will then get labeled to codify it. The third step is to search for themes in the codified data. This is done by looking at the coded data and searching for patterns and themes that help answer the problem the thesis aims to solve. The fourth step is reviewing the themes. According to Nowell et. al. (2017), this is where you start looking at the relevance of the themes found. Some themes might be redundant to answer the research question and could therefore be removed, and vice versa. After the themes have been reviewed one should move to step five, which is to define and name the themes. This is to give structure to the themes once they are added to the thesis and therefore be much easier to read and understand for the reader. And lastly, the themes should be written down, as they have been found, and analyzed in the text. While

these steps exist, they are not entirely linear (Nowell, et. al., 2017). Jumping back and forth between the different steps will most likely happen as new data that needs to be analyzed might be collected or new themes analyzed. This however does not negatively affect the analysis.

3.5. Qualitative Assessment

It is important when writing a qualitative study, for the readers and the writers themselves, that it comes forward as being trustworthy (Nowell et. al., 2017). To make sure that the thesis is trustworthy, Nowell et. al. (2017) lays out six different criteria that aim to increase the trustworthiness of a study. The first criterion is credibility. With credibility, the aim is for the readers to be able to recognize experiences brought up by the writers. This can be done with certain methods, such as prolonged engagement, persistent observation, triangulating data, etc. In this study, we used persistent observation and the triangulation of data to get a better understanding and find patterns between the different interviewees. The second criterion is transferability. Nowell et. al. (2017, p.3) describes transferability as “*the generalizability of inquiry*”. This means that the description of the data found should be described in such a way that the reader can see if it applies to their own experiences and become meaningful to them (Korstjens and Moser, 2018). The third criterion that the writers should fulfill is dependability. The reader should be able to understand the research process that the researchers have undergone to reach their conclusion (Nowell, et. al., 2017; Kortsjens and Moser, 2018). The writers must also ensure that they have followed the method of analysis and ensure that it is within an acceptable standard of that method (Kortsjens and Moser, 2018). Confirmability is the next criterion for ensuring the quality of the research (Nowell, et. al., 2017; Kortsjens and Moser, 2018). According to the criteria, one must be impartial when analyzing the data and ensure that it is analyzed without personal bias (Korstjens and Moser, 2018). To ensure dependability and confirmability an audit trail should be shown (Nowell, et. al., 2017). The audit trail is meant to give the reader an understanding of the decisions made by the writers during the thesis. The readers should be able to follow what decisions the writers have made and should be able to reach the same, or similar conclusion when confronted with the same set of data. The last criteria is that of reflexivity (ibid.). Reflexivity is the self-awareness of the writer and should be shown to the reader (Nowell, et. al., 2017; Kortsjens and Moser, 2018).

3.6. Ethics

When conducting a study of any kind, it is essential to have ethics in mind to ensure that no harm is done to those partaking in the study and that the reputation of the research becomes hurt in any way (Bell, et. al., 2019). To ensure that the writing is done ethically, four main areas of focus have been produced (ibid.). These areas are ensuring that no harm is done to the participants, ensuring that there is informed consent, making sure there is no invasion of privacy, and making sure there is no deception. To ensure that no harm was done to the participants in this study the interviewees were informed of what the study would be about before they accepted the interview. The interviewees were also allowed to be anonymous if they should wish for that and this was the case with one interviewee who asked for it. We also did not wish for anything that might harm the firms to be mentioned within this thesis. The interviewees could therefore ask to remove parts of the interview that they considered to be harmful to their business or themselves. The informed consent was gained through phone calls to the interviewees explaining what our study was about and to see if they would be interested in participating in it. After interest was shown an email would be sent with more information regarding the thesis. It was first after all this that a date for interviews was to be set. Regarding the interviews at the Vitalis fair, the interviewed people there were informed about what the thesis was about and that the information they gave would be used in the thesis. Anonymity was also offered to the people interviewed at the fair. Privacy was ensured for the interviewees by informing them that they were allowed to remove answers which could harm them as was mentioned. This was to ensure that subjects that could hurt the interviewees would not be brought up within this thesis. To guarantee that the interviewees would not be deceived by what this study was about, it was made clear in the emails sent what the study would be about. It was also answered when asked by the interviewees to make sure that they fully understood what their participation in the thesis would mean.

4. Empirical Findings

4.1. Interviews With the Supportive Systems and Other Data

4.1.1. Sahlgrenska Science Park

Charlotta - The view from Sahlgrenska Science Park

The interviewee

Charlotta, the CEO of the Sahlgrenska Science Park, has plenty of experience in the life science sector. For instance, she has experience working as a CEO in a research-based firm. She also worked for many years as an investment manager, a business coach, a global talent manager, and so on. She also has rich empirical knowledge working in global pharmaceutical firms, and startup firms and has been working abroad in countries such as the UK.

For the past six years, she has been working in Sahlgrenska Science Park. Her main task as CEO according to her words is working with the startup firms at the science park and connecting them to international markets, helping startups on the stage in different ways, as well as to better preparing for investors and global collaborations.

Sahlgrenska Science Park

Sahlgrenska Science Park is jointly owned by the city of Gothenburg, the city of Möndal, Business Region of Gothenburg, Region Västra Götaland, University of Gothenburg, and Chalmers University of Technology. It brings together the powers of industry, academia, healthcare, government, and offers a strong regional ecosystem for innovators and businesses to collaborate and grow within (Sahlgrenska Science Park, 2022). As an innovation incubator and business accelerator of healthtech startups in western Sweden, the missions of the science park are of very different contents. The overall goal of the science park is to increase the number of people working within the life science healthtech industry, as well as increase people's interest in the industry and the number of firms. The ultimate common goal is what can they achieve rather than who they are, and building trust is an inseparable part of it.

According to the interviewee, Sahlgrenska Science Park has strong academia and is known to be good when it comes to collaborating. However, not every startup looking to be situated at the Sahlgrenska Science Park could stay, according to the interviewee. The procedure usually starts with idea boosting through a business reviewing meeting. But they might end up in different ways since they have different competencies, ideas, and levels of readiness. In the end, the science park gives different solutions, for instance, refer some of them to Health Tech Nordic, GU Ventures, Chalmers Ventures, or elsewhere to be better situated or find support. Only around 5% to 10% of the firms looking to work within the science park get to be situated in it. The interviewee indicated that only most “hungry” ones can stay, which was explained by the interviewee to be if the firm has a “sense of urgency”. And from the science park perspective, they are usually being pushy and speedy on a lot of matters. They are expecting people who could be incubated at the park to think of the ideas fast and act fast, and the value of the ideas can truly make a difference in the life science sector.

Internationalization for Startups at the Sahlgrenska Science Park

At the science park, they run different programs together with international partners like National Health. For the big picture, Charlotta said that they are first focusing on running different programs in the Nordic market. Then secondly, they will focus on the UK market, as it has similarities with the Swedish publicly funded healthcare system which is an ideal market to enter. They also have a strong interest in the Netherlands, Germany, and U.S. markets.

For a startup’s internationalization, at the science park, different people are responsible for problems that may be encountered during the internationalization process. Such as the legal department, business developers, university professors from academia, IT consultants, and so on. Having them is having everything to be prepared for awaring of the market, different regulations, finding investors, and so on to prepare for internalization. As there are different development patterns between different startups, Charlotta said that they have tailored different business advice for each of the external firms like Volvo and Ericsson, through the existing different programs and then they have also different cross-sector collaborations that they involve the startups in. The purpose is seeking for world competencies if the startups go international.

Furthermore, the science park occasionally receives some firms that come here wanting to do internalization through their networks, for example, through corporations with EIT Health. As a result, the park is certified and willing to do that through the funding getting from the EU to help people.

Networking

The biggest takeaway for startup firms being at this science park emphasized by Charlotta is networking. Sahlgrenska Science Park can be seen as a public institution and has the role of connecting the existing firms with the startup firms, and seeking a “suitable” network is a major matter for them. The science park has a vast global network that involves massive cross-industry partners, interacting with global leading partners like AstraZeneca and West Swedish life science. By connecting the startups to different networks, the science park helps the startup's firms to be visible on the stage, collaborate with R&D, and get insights from cross-section life cases from collaboration programs with external firms as mentioned before. Like currently, she said that they have two startups collaborating with R&D through the network of the science park. According to Charlotta's words, it is hard for a firm to get all the knowledge and the contacts that it needs, but sometimes it is just a phone call away - someone knows someone who knows everything. Furthermore, the science park is continually exploring the network. It is believed by Charolotta that one network leads to another. Business Sweden, as one of the network partners, for example, does different programs with the science park, market research, and finding customers. Another example is a cluster organization called Health Innovation West, which connects both small and large firms to academia and hospitals to find collaborations.

Entrepreneur

Besides the formal and informal networking, the science park also has a role of, according to the interviewee, keeping the entrepreneurs better and safe on the stage, learning from failures. The science park values the startup entrepreneurs to have confidence in both what they know and what they do not know. In a positive outcome, the science park opens a door for it and in response to the lack of knowledge. Charlotta highlighted that a lot of startup CEOs know a lot about themselves, and they are already quite competent. She also highlighted that they do pitch training with these entrepreneurs from time to time, it is beneficial for them when having formal

conversations with investors or meeting customers with the sales pitch. Besides that, there are also breakfast meetings, CEO meetings, knowledge idea boosting meetings, and so on. In these ways, it is easier for entrepreneurs to make acquaintances with firms. Furthermore, there is a studio where entrepreneurs can spend time doing things such as broadcasting, recording videos, and exploring an open space with other colleagues. Overall, the science park upbringing individuals expand their entrepreneurial capabilities and helps them evolve as an entrepreneur.

Challenges

The biggest challenges that Charlotta sees are mapping what is happening and Medtech regulations. To cope with that, increasing awareness and knowledge. Besides, what is also important is exploring what they want to do, and developing further. It contains different steps and needs different talents for the different steps of the way to do it. And there are a lot of other obstacles to overcome. To identify them and prepare, first, she emphasized that having the right talents, and they are not misplaced. Second, they try to have an impact board connected to the firms so they learn from them, like advisory boards or impact boards. Third, they are getting the right funding which takes a longer time. It makes it critical to plan and take into account reality issues, especially when they have limited funding.

Covid-19 and the Future

Charlotta said that the Covid-19 pandemic had some degree of negative influences respectively, such as less funding, less networking, and lack of traveling for business, as a result of lack of collaboration with the fact that people are not able to communicate physically. From her perspective, in the future, as mentioned above, continuously getting funding and working closely within the industry and the universities, other educational institutions are prioritized missions. She emphasized that firms ought to have more “Company Day” with academia like the university students and clinical researchers. Moreover, the science park is aiming to continuously promote the flow of knowledge. She believes that talents ought to be cherished and ensure that they are hired at the right place to do their best work.

Key findings

Sahlgrenska Science Parks as intermediate support undertakes a variety of service functions for startup firms. They usually have an efficient organizational structure and the startup firms can obtain all kinds of services they need when they develop themselves, from scratch when they have an idea, to the firm established and growing. The massive connections, professional legal and consulting help, and so on from science parks can greatly help startups internationalize and help the entrepreneurs evolve.

4.1.2 Interviews With Firms and Institutions at Vitalis Fair

Vitalis Fair - The views from Startups were not situated at a science park and Regional Innovation System

Vitalis Fair

The fair is the largest eHealth event in Scandinavia. It is a yearly event attracting attendees within the healthtech industry to enrich and improve tomorrow's healthcare situation (Vitalis, 2022).

Those who are not situated at science parks

During the Vitalis Fair, most firms we interacted with at the fair are not startups anymore. When it comes to the reasons why they didn't choose to be situated at a science park when they were startups, the reasons were varied. According to the CEO of Swedish firm Goesart, the reason was that they had independent scientific studies, they also teamed up with Ph.D. students, and there was no need for them to seek help from a science park. Another firm called CSAM indicated that they already knew how science parks worked when they were startups, and people who worked at the firms knew how to run a startup. In addition, they have already got a variety of connections at the early stage of their establishment. There were even overseas customers who found them because their products were in demand. They felt that there was no need to be situated within a science park as they already knew what to do. Another firm called Lenus, which is a startup

newly founded in 2021, the interviewee explained that they have collaborations with science parks instead of being at a science park. The biggest reason for them was that they have different natures.

Challenges based while not being situated at science parks

Summarized by four firms mentioned before, when they were/are startups, they found that, first, having the right people/partner/firm to work with was difficult, it can be also seen even after internationalization nowadays that it has been a difficulty all the time. It was explained that everyone has different ways to work and collaborate. Second, one challenge also being mentioned was lacking structure overall, as well as having difficulties finding stockholders. Besides that, one of the interviewees underlined to act fast was quite challenging. Third, it was also brought up that one of them suffered the problem of lacking talents and lacking capacities at the early stage of their establishment.

Västra Götalandsregionen

Västra Götalandsregionen is a part of the Gothenburg regional innovation system. The interviewee from Västra Götalandsregionen said that they have one of the significant roles in monitoring all the innovation processes from different platforms in the region. Also according to the interviewee, they encourage people within the industry to speak about ideas with them. Positively, they can provide an overview for supporting, and connecting them, even bridges for international connections. In this way, the interviewee emphasized that it is a mutual good understanding of each other to help the healthtech firms in the region.

Health Tech Nordic

Health Tech Nordic was founded in 2013. Sahlgrenska Science Park is one of the founders. It is the largest community of healthtech firms in the Nordics. It accelerates hundreds of startups, and the member startup firms have provided a variety of healthtech solutions to create less dependency, and better health worldwide (Health Tech Nordic, 2022).

During the interview, two interviewees who work in Health Tech Nordic highlighted that first, they can be sensitively aware of global market needs, then guide the startup firms. Second,

according to one of the interviewees, they are trying to save time, speed up startup firms to make more progress, and eventually intend to bring more successful healthtech startups to grow abroad. The help includes networking, finding all types of investors including international investors and partnering up, startup firms helping each other, spending money wisely, as well as identifying issue trends, educating the market and helping with different regulations, and so on. Another interviewee said that it is a joint effect to help health tech startups firms whether just networking or internationalization. In addition, he gave an option about startups at the science parks, if a startup may fail, they expect to fail fast so they are learning from their mistakes and the entrepreneurs within the firm can start developing new products again at a quicker rate. The reasoning for this was that it would save both the entrepreneur and investors money since the project would not be dragged out longer than it had to.

At last, the interviewees see the biggest challenges are dealing with different regulations and complex systems as the healthtech industry is still an emerging industry, and how to simplify these rules, and have a more open market is challenging. They aim to help firms with this and get them into contact with firms that have already solved those problems.

Key findings

On the one hand, there is a lot of help outside the science parks in the RIS that can be offered for startups, such as lookup regulations and finding investors that can be seen when it comes to internationalization. On the other hand, those who do not choose to be situated at the science parks, mainly don't need to seek major help from SP, such as initial connections, and entrepreneur training.

4.2. Interviews With Startup Firms

4.2.1. Case 1

MediCase - The view from a startup at Sahlgrenska Science Park

MediCase is a Gothenburg-based firm. The firm was created in 2014, as one of the founders was a researcher at Sahlgrenska science park that found that one of the systems they were using could be improved. The firm is situated within Sahlgrenska science park. The reasoning for why the firm was set up in Gothenburg was due to all of the founders being from the city and it was, therefore, easier for them to continue working in Gothenburg. The firm works on developing an eCRF, which stands for an electronic case report form. They started developing this product in 2012 and have since started selling their products mainly around Sweden. The eCRF is a tool that is used within clinical studies to collect and manage data about the people in the trial. While other tools such as the one that MediCase already existed, MediCase attention to making a cheaper and more flexible tool than that which already existed on the market.

The interviewee

David, who is interviewed as one of the co-founders of MediCase, is a system developer with a degree from Chalmers university of technology in Gothenburg. Before working in MediCase, David had been a project manager in a startup and after that had worked as a programmer and system developer in another firm. While David is the one creating the product, he does not see himself as an entrepreneur but acknowledges that he might be considered one by others. In the words of David;

“I am an entrepreneur in the way that I’m trying to make the business grow, but I’m not an entrepreneurial spirit. I’m not passionate about the whole business part of running the firm, but I think it’s fun to create a product. But I also of course want it to sell and grow, but that’s more for my own sake.”

Sahlgrenska Science Park

According to David, Sahlgrenska Science Park was not on the firm's mind when they first looked at where to place their office. MediCase had first started by looking for a cheap office hotel when they found this science park. As Sahlgrenska science park was both considered to have a low cost and lay close by to some of the founders they decided to have their office in it. However, while the benefits might not have been considered fully when choosing to situate themselves in the science park, MediCase has noticed several benefits. One of the biggest benefits that MediCase has seen has been the networking which they have gotten connected within the science park. As many different firms work within the science park, there are often situations where people sit and discuss their work and other things that are related to it. In addition, according to the interviewee, this has given MediCase and its employees a lot of knowledge that would have been time-consuming or costly to procure through other means. Some of the firms that work within the science park are also now MediCase's customers.

Another fact that has benefited MediCase a lot from David's perspective is the managerial capabilities that Sahlgrenska science park possesses. When MediCase were starting to look at becoming a firm, it was the staff from the science park that helped them with how to make that process happen. With help from the science park, the firm was created without any bigger issues. It has also given MediCase confidence in its decision-making processes. This has allowed MediCase to grow in what they call an "organic way". David also mentioned there is the possibility to get more support if needed from the science park. Since the firm is comfortable with its current organic growth, this is not something that at the moment is needed. However, David commented that knowing that they can get the needed help if the business starts to stagnate is a quite comforting fact.

Internationalization

While MediCase has some of its customers abroad, they still focus mostly on the Swedish market for the moment. One of the reasons for doing this is due to differences in regulations that exist for their product between countries. This means that it would be costly for the firm to make sure that its product is up to the standards set for every country. One of the countries mentioned by David is the UK. While MediCase already has a customer that is situated within the UK they

have found that for the UK market, a more full-scale approach would be needed. In the words of David;

“If you wanted to do it you would have to beat the large drum, you can’t sneak your way in but have to do a full launch into the country.”

This knowledge was gained through a project created with Sahlgrenska Science Park and Business Sweden. The one firm which they work together with in the UK is a smaller clinic and was not enough for the moment to get them out into the larger markets. This is a case for all three of the countries that MediCase so far have customers, and the customers they have abroad so far only measure one per country. David stated that for them to expand in the countries that they have so far looked into they would have to go through many different authorities to get their product approved. This is due to the procurement process being very centralized in the area of work that MediCases customers are a part of. For example, Norway, an example mentioned by David, has a regional system when it comes to the procurement of products such as the one MediCase sells. Each region has its central authority for procurement which could make it costly to enter. From what MediCase has seen, this is the case for all markets that they have looked at. This would mean that MediCase had to make a significant investment if it wanted to internationalize its product. That is why they currently focus on the Swedish market instead of fully taking their business abroad.

Additionally, for now, MediCase has focused more on how they are conducting their businesses. This has led to them focusing their attention on Sweden for the moment, but they do have plans to further expand abroad in the future. However, due to the immense investments the firm sees itself having to take to penetrate foreign markets, it will probably be a while until MediCase decides to fully consider internationalizing its business.

Networking

As mentioned above, MediCase sees a lot of benefits from being situated within Sahlgrenska Science Park. It has allowed them to talk and discuss with other firms in a much more informal way. This has allowed MediCase to gain capabilities and knowledge that they might not

otherwise have been able to procure by themselves. David brought up that MediCase has gained a lot by being situated in the science park by just having every day talk with the other startup firms. These talks have helped them to further expand their knowledge about how to run their business. MediCase has also managed to gain new customers through the networking done at the science park, seeing as some of the firms within the park are now customers of MediCase which is quite interesting.

Furthermore, through Sahlgrenska Science Park, MediCase has also been able to join a variety of programs where they have been able to work together with other firms. One of such is that of Health Tech Nordic. While MediCase has been a part of that program they have not seen any real benefits of being inside of them since they have not been targeted toward firms that work in their field. David put it as the firms that have collaborated in the Health Tech Nordic program are more or less MediCases customer base, rather than firms in similar situations.

In addition, MediCase also had collaborations with firms that existed outside of Sahlgrenska Science Park. They have for example been working together with a firm working with a clinical research organization that has MediCases product as one which they are selling themselves. Also, since two of the firm's founders are researchers, they have been able to bring with them their networks. The reason is seen because the product is aimed mostly at researchers. Since one of the founders has been active in helping out with different research projects they have been able to utilize this network to sell to more people. While this is the case, they have been in contact with other similar firms as well but that has not yet led to any real cooperation between the firms. There was also one instance where MediCase was asked by one of their customers if they would be able to look into operating in the Chinese market. This came up due to the customer wanting to conduct clinical research within China. However, this did not lead to anything as the firm quickly saw that the Chinese market would not work for their firm and product due to the different regulations that exist in the Chinese market when it comes to the collection and storing of data. The main networking that seems to be happening for MediCase is that with other firms in Sahlgrenska Science Park. They do work together with other firms but it has so far not led to much concrete for the firm. This is especially the case when it comes to their international ambitions.

While networking, as has been brought up before, is one way that MediCase has been able to gain knowledge and capabilities there are also other ways that the firm gains knowledge from being within the science park. One of these is through the seminars given at the science park that the firms working there have access to according to David. These seminars can range anywhere from understanding law to how to run your business. But these seminars have been far fewer during the Covid-19 pandemic, according to him. However, they have allowed MediCase to further gain knowledge when it comes to how to operate their business. This especially allowed MediCase to build up its understanding of how to run the firm.

Covid-19

While the product created by MediCase is digital, it has not in many ways affected the firm's business under the Covid-19 pandemic. Since MediCase mostly focuses on selling to firms and institutions that conduct clinical studies, there was a stop in sales since new studies were on hold. This was since most clinical studies were on hold during the pandemic. The reason for this David said was that most clinical studies needed the people within the trial to appear physically to continue with the trials. This coupled with the fact that a lot of resources were going to Covid-19 research meant for MediCase that there was not much demand for their product during the pandemic. Nevertheless, once the restrictions started to lift, MediCase saw a huge boom in sales as studies that had been planned before Covid-19 was now started. What this meant for MediCase was that the overall sales they got during the pandemic were about what they expected for a normal period, although it instead came in waves.

Key findings

While MediCase has yet to fully go international, the case is still that they have gained international customers. But while this has not led to further expansion in those countries, it can lead to it in the future. The firm has instead focused on the development of its business in the Swedish market but is willing to further internationalize once they feel that they have the resources to spend on it. David put a lot of focus on the networking aspect of being situated at the science park, where the informal everyday talks were the main focus on the benefits of being

within the science park. They also saw the managerial capabilities of Sahlgrenska Science Park to help with the development of their capabilities.

4.2.2. Case 2

Joyvest - The view from a startup at Sahlgrenska Science Park

Joyvest is a startup firm that makes healthtech everyday life products dedicated to caring homes. The design of the product is simple and friendly to use, it is an innovative product that helps stimulate physical activities, and makes the body move more with the help of music by simply wearing a vest.

The interviewee

Isak, the person interviewed from Joyvest, is the CEO of Joyvest. Before starting the firm, he has a bachelor's and master's degree with a business background from Handelshögskolan in Gothenburg and Chalmers university of technology in Gothenburg, as well as overseas education and living experiences in Spain, Mexico and an internship in London during his studies. He motivated himself and came up with the business idea of Joyvest when he was still a master's student. Combining the business analyst working experiences that he had from both a startup and a multinational firm environment, he sees himself as an adventurous, highly motivated, and positive global mindset entrepreneur willing to take risks. With this kind of entrepreneurial spirit, he also finds it stimulating and satisfying to create things out of ideas and build piece by piece according to his words.

Sahlgrenska Science Park

As mentioned before, Isak came up with the idea for Joyvest when he was still a student. Joyvest chose to be at Sahlgrenska science park, first of all, since it was affordable, good value with a flexible contract for him to rent. However, the most important reason was that the name of the science park is well known and itself has strong branding that Joyvest could take advantage of. It can be explained that Joyvest is getting more networking connections than if the firm was

situated outside of it and they feel much more comfortable and better off working in a highly organized environment.

While situated at the science park, Joyvest has received direct and indirect help. With direct help, such as getting multi-channel connections from the Sahlgrenska Science Park, Joyvest has taken advantage of, for example, the free educational lectures organized by the science park. Through the lectures, they are gaining competencies, getting a bigger picture, and have further developed their business framework. Isak also emphasized that the knowledge they have been taught from the science park has greatly contributed to them making more concrete business solutions and built confidence as he had never been a CEO to run a company before. Furthermore, as being a small startup firm, Isak believes that interpersonal chemistry is important regarding the trust part. He also believes that having an honest approach is crucial, which means plainly expressing yourself, giving things to show the firm's vulnerabilities, and avoiding promising things they are not capable of. When it comes to real problem solving, it can help firms to gain trust.

Networking

The indirect help previously mentioned is relevant to the networking part, Isak indicates that Joyvest is even getting foreign customers due to them being situated in Sahlgrenska Science Park. Some of their foreign customers found Joyvest through healthtech Nordic and Business Sweden as they have business relations with the science park. As well as some stockholders, have contacted Joyvest through the connection with the park. On the other side, within the science park, inner networking is also being taken good care of. Isak said they have a lot of conversations with other startup firms with similar situations. He also has learned experiences and knowledge from the meetings and the informal interactions. And all the startups at the park have a LinkedIn communication group, however, Joyvest has not yet cooperated with any other startup firm at the science park so far.

Internationalization

During the interaction with Isak, first of all, his international experiences have certainly affected his view of internationalization. His goal of internationalization was set at an early stage and succeeded and started by entering a foreign country by specializing in the product. For example,

custom different music into the products categorized by different cultures. In October 2019, Joyvest launched its first product. After 16 months in 2021, when the Covid-19 pandemic was still ongoing, they had their first foreign customer from Denmark, and later on, customers from other nordic countries like Norway and Finland. As being brought up, these foreign customers were beneficial from the connections.

From his point of view, Joyvest is a born global firm. Currently, they are looking and getting help from Business Sweden to analyze the markets in Japan and the Netherlands. During the internationalization process, he sees the biggest challenge is finding the distributors. According to him, it is hard to convince them to cooperate with Joyvest products as there are so many other competitors in the international market. In other words, it is harder to do the transformation, that is, transfer his business product belief to others. It sounds like an educational cost as the distributors usually need to calculate profit carefully. Besides that, according to the interviewee, nowadays Joyvest is also facing a more segmented market, for instance, people from different countries have different music tastes. He sees that it is always a big risk for a small new firm like Joyvest when it comes to expanding the business whether abroad or in Sweden. He explains that because the reality is that they can hardly have a solid case from an external point of view, which means they are bound to fewer resources. Under these circumstances, except for the necessity of coping with legitimacy, the most important are the liquidity and investment parts. To do this, the tricky question is what is worth investing in. His options towards that are not so much about the probability of the investment itself being good or not in the future, but it is rather more the reality. He also commented that if Joyvest does not invest in new products, it will only bring more risks during the internationalization process.

At last, he is optimistic about the firm having the advantage that as being a small high-tech startup, everyone would love novelty creative products in today's climate. Besides the creativity, they prioritize the things that matter to show the customers that they have the capabilities to fix them quickly and respond quicker compared with the bigger firms.

Covid-19 and the Future

Isak also highlighted some influences of the Covid-19 pandemic on Joyvest, first, business activities have been a lot more digital than before. The second, without physical touches and significantly, increased remote meetings leading to fewer large business orders. However, Covid-19 did not affect Joyvest's internationalization plan. As mentioned, they will launch in the new markets in the other two countries in the near future. In the firm's long-term goal, what Isak said was quite intriguing. He indicated that there is no plan B for global emergencies like Covid-19 or Ukraine-Russia war. Regarding the short-term goal, there is only ongoing plan A which is to make a real solid case within Sweden, expecting more physical business activities and improving the products, the music part for example. Then, they are going to adapt them to more countries in the international market. With Isak's entrepreneurial spirit, they are uncertain about what will happen in the future but are looking at everything positively.

Key findings

Jovest is a born global startup firm, they are able to internationalize because of the help from the science park. The CEO sees himself as an entrepreneur, he had a clear goal of internationalization at the beginning, and his personality and previous experiences have also certainly greatly contributed to the process of internationalization.

4.2.3. Case 3

Dizlin - The view from a startup at Sahlgrenska Science Park

Dizlin is a biotech company that works on the development of treatments for Parkinson's disease. The firm was established in 2003 and has offices in both Sahlgrenska Science Park in Gothenburg, as well as in Stockholm. The firm has had a long collaboration with Sahlgrenska and Björn states that Sahlgrenska and its work on neuropsychopharmacology was a big reason for the firm settling in Gothenburg. Seeing also as the patients of their clinical trials were sent to Gothenburg for their tests it was only seen as natural for the firm to set up within Gothenburg. Seeing as Gothenburg itself was almost a middle ground from where some of the founders

originally came from, it was also much easier for the personnel working for Dizlin to relocate. Dizlin also decided to set up an office within Stockholm to secure funding for their firm as most financing comes from there. It was also chosen since a lot of the new personnel working within Dizlin were situated in Stockholm.

One of the people that has been involved in Dizlin is Arvid Carlsson who is a recipient of the Nobel prize because of his involvement in the research on Parkinson's disease. Arvid Carlsson has been very involved within the firm and sat on the board of Dizlin.

The interviewee

The interviewee for Dizlin was Björn Velin. Björn is the CEO of Dizlin and has been so since 2019. Before working at Dizlin, Björn had accumulated 30 years of experience working in the pharmaceutical industry. Björn had experience working abroad, he spent four years working in Japan as the president of the firm Lundbecks's Japanese branch.

Sahlgrenska Science Park

Dizlin decided to put their firm into Sahlgrenska Science Park thanks to the recommendation of a professor of pharmacology, Elias Eriksson. Compared to their offices in Stockholm, the resources that they have to spend within the science park are negligible. But while they look at Sahlgrenska Science Park favorably, Björn explained that they have not been very efficient when it comes to seeking help from the science park itself. In the beginning, Dizlin had received support from Sahlgrenska Science Park when it came to questions about financing and whether to list the company. Although Björn said that since they already had a lot of experience within both the management and board on how such things should be handled, not a lot of support in that regard was needed. While Dizlin has had little reason to ask for help from Sahlgrenska Science Park, in the words of Björn, he found that the support that is offered to them is still extremely helpful. Björn also mentioned that they have mostly worked by themselves when it comes to procuring network partners and investors.

One of the benefits of being situated within the science park that Björn stressed was that they can be closer to their clinical trials. Being situated close to Sahlgrenska as well as academic

institutions have been very favorable for Dizlin. This is the case since they have been collaborating with people within the academic world regarding their product as well as being close to where they conduct their clinical studies.

Internationalization

While Dizlin has yet to fully launch its product they are still planning to internationalize its product at an early stage. However, Dizlin is not looking to internationalize the product by themselves. Björn stated that:

“We have no intention whatsoever to go to the market ourselves. So the business model is simply as we will conduct the clinical trials that we need for market approval, but we will at the same time sell licenses.”

Dizlin has been in contact with many different regions around the world regarding its products. These regions include Europe and the United States, as well as China and Japan. Björn also included that they were also at the option of selling the firm instead to let the firm buy Dizlin to handle the internationalization. If possible, Björn stated that they are looking at the possibility of a larger pharmaceutical firm to buy Dizlin who could then at greater ease conduct the trials by themselves. Seeing as many countries demand that trials have to be held on people from that specific country or region, this could have the potential to save the firm much-needed finances. As the larger pharmaceutical firm would also be able to more efficiently conduct many different clinical trials at once, this could hasten the products' internationalization greatly. Björn explained that as a startup, Dizlin would only be able to move forward stepwise in its internationalization without the right amount of funding. At the moment they are focusing on being in contact with potential license holders and letting them handle the production and sales of their product in each region. And Dizlin does not see it as urgent to start its internationalization immediately. They are instead focusing on developing the compounds of their products to increase their value before they start the process of internationalizing their products. And their products will not differ that much between countries. While the drug itself will stay the same, there will be some modifications done to the packaging as well as the medical device that is connected to Dizlin's product to make sure it addresses cultural and language barriers.

One of the biggest risks that Dizlin recognizes is for them to have delays. As their product is combined with a medical device there is a risk that a delay in one of the products will hinder their operations. Björn mentioned the disruption of semiconductors as one of the problems that they have had to overcome. This would hinder their products' internationalization and would cost the firm a lot of money. Another risk that the firm has to face is instability around the world. According to the interviewee, the Russia-Ukraine war has the possibility of having negative effects on the firm, and other conflicts that could erupt in the world could also mean trouble for the firm.

Networking

Dizlin works a lot together with different firms. Björn stated that a lot of the firms they are working with have consultants working together with Dizlin. The firms that they are mostly in contact with regarding this are situated within the Uppsala region. The firm also has someone in their network that connected them to the Asian region so that they could come into contact with relevant firms and institutions regarding the licensing of their product. But while they are situated within Sahlgrenska Science Park, Björn said that they have not collaborated a lot with different firms at the science park. Most of the networking for Dizlin has instead been focused on coming into contact with potential shareholders, and potential licensees to procure investments as well as having the potential to sell their products on foreign markets. However, the firm has had some collaborations together with the academic world as mentioned before. They have had help from professors in their work and it was through a professor that they decided to settle in Sahlgrenska Science Park from the beginning.

Covid-19

While Covid-19 could have affected the clinical trials for Dizlin they managed to finish them before the pandemic was in full swing. In the words of Björn, Dizlin was lucky. As the patients on trial for their product had to travel to Gothenburg for the tests it would have been a lot harder to conduct the trials if the restrictions put on the Swedish society had been in effect during them. Although the clinical trials were less affected by the pandemic they are still changing the way that Dizlin communicates and conducts business with investors and potential future licensees.

The pandemic has forced the firm to conduct these meetings digitally and Björn mentioned that a lot of it has been conducted over Zoom.

Key findings

Dizlin has a close connection with the academic world which can be seen in their collaboration together with Sahlgrenska. While they see the benefits of working more closely with the science park and the firms within it, they have mostly sought networks and collaborations externally. Dizlin aims to internationalize by collaboration or by selling the firm to another company that would have greater ease at getting their product to the global market. The collaborations would mainly be through licensing their product.

4.2.4. Case 4

Anonymous - The view from a startup at Sahlgrenska Science Park

The anonymous firm is a fairly young Swedish biotech firm. Before starting up this firm, according to the interviewee, they have been conducting research for ten years but only recently decided to start a firm. As the firm is quite young, they have only been at Sahlgrenska Science Park for under a year so far. The people involved within the firm come from many different backgrounds. Some are from the academic world, having been, or still are, professors within different types of academia.

The interviewee

The interviewee is one of the co-founders of the firm. They do not have any prior overseas experience and studied and worked only in Sweden before starting this firm having studied at a large Swedish university. Before that, they also worked as an executive assistant, in consulting, and in other different jobs. The interviewee sees their degree from their university as being an important part of being taken seriously when it comes to being in contact with people within the

academic world, something which has been beneficial for them when it comes to their work together with universities.

Sahlgrenska Science Park

When joining Sahlgrenska Science Park, the firm was the one that was first contacted by Sahlgrenska Science Park about whether they were interested in joining their accelerator program. When asked about how they first got to know about Sahlgrenska Science Park, the interviewee answered:

“We got contacted by them, but I had heard of them through word of mouth. Someone had said there’s Sahlgrenska Science Park a few years ago, so I did know they existed. But they contacted us first.”

One of the reasons for joining the science park was its work with firms within the med-tech industry and the support they would be able to get in this regard.

While the firm is quite new and has only been situated within Sahlgrenska Science Park for less than a year, they have still been able to take advantage of many different things that the science park has to offer. Even before entering the science park, they were supported by them in their business endeavors. In the beginning, the firm needed some help when it came to the financial aspect of their firm. They needed investors and had help through the accelerator program of Sahlgrenska Science Park in how they should move forward with the procurement of investors for their firm. Here the interviewee stressed the importance of how Sahlgrenska Science Park conducts their accelerator program. According to them, the accelerator program does not consist of a specific plan for how each firm should work. They instead focus on the different aspects that the firm needs help with considering where they are in the startup phase. Here they put focus on the expert help that they found that they could get from the people at Sahlgrenska Science Park as they found it extremely helpful when it came to questions about how to most efficiently conduct their business. After getting help with procuring capital for the firm they instead focused on getting help regarding their business development.

Internationalization

Since the firm is so early on in its life, they have yet to internationalize. The firm has yet to release its product so it is still some way ahead before it will begin its internationalization. The firm has however started to look at different markets that they plan to enter once their product is finished. They have started the process of understanding different markets and gaining knowledge that will help them with their internationalization at a later stage. However, they are at the moment planning a release on the Swedish market first, before taking the step to internationalize the firm. The firm has started to look at how to conduct its internationalization, whether it be through export or foreign direct investment, etc., but has yet to decide on how they plan to internationalize. When it comes to the internationalization of their product, they do not see any need to change it to fit the new market. They do recognize the fact that they will need to face the regulatory problems when it comes to launching their product to the international market. According to the interviewee, they will focus on making sure that they avoid extra work by considering different countries' regulations when conducting their trials. By considering what they need for regulatory approval in the United States while conducting their trials in Europe, they can avoid having to do extra work when they are looking to gain approval in the United States. They consider this regulatory aspect of medical technologies as being one of the biggest risks for their firm. This is due to the resource-intensive steps needed for approval in each market. The interviewee stated though that while this is a large hurdle for the firm in the future, they still see themselves succeeding on the international stage. This is due to their product being one that has a global demand and it would therefore be worthwhile in the end for them to go through the process of regulatory approval in foreign markets.

Networking

Being situated within Sahlgrenska Science Park has allowed the firm to get into contact with many different firms and people according to the interviewee. One way in which they have been able to use the science park is the ability to contact other firms within Sahlgrenska Science Park and ask questions to these firms. According to the interviewee, they will always get these questions answered and see it as being extremely helpful when conducting their business. The interviewee still does not consider this as being within a network, instead, they see it as being

able to use the expertise from other firms and them being helpful. Through the science park, the firm has also been invited to different programs and exhibitions and they are also a part of Health Tech Nordic. The interviewee also indicated that the firm has yet to gain entry into any international networks out over Health Tech Nordic. They have been in contact with international investors but as the firm is still quite young this is not something that has yet to be nurtured into a collaboration of sorts.

Covid-19

Regarding Covid-19, the interviewee informed that it has not affected their firm all that much. While it has given the firm a greater feel for the need that exists for their product, the work itself surrounding it has not been greatly affected.

Key findings

The firm has seen great support from the science park when it comes to the development of their firm. This support has come from the science parks accelerator program through the management as well as the informal network that exists in the science park. The accelerator program works well, according to the interviewee, due to its flexibility. They see a risk when it comes to the release of their product that is regulatory barriers and are looking at how to combat that risk once internationalization is on the table

4.2.5. Case 5

Calmino Group - The view from a startup at Sahlgrenska Science Park

Calmino group is a firm founded within Gothenburg in 2003. The firm focuses on research and development surrounding gut health. They launched a product in 2010 for the treatment of irritable bowel syndrome (IBS). The firm decided to set up its operations in Gothenburg due to it being the hometown of the founders. The firm was started by two people but by 2005 the firm was fully owned by Tobias as he bought out the co-founder. While the firm today is focused on the sale of its product it started by focusing on exports. These exports ranged from cosmetics to

raw materials for the health sector. This changed however and they started doing clinical trials for their product in 2007.

The interviewee

Tobias is the managing director for Calmino Group and considers himself to be an entrepreneur. He is one of the founders of a firm and became the sole owner of the firm in 2005 when he bought out the co-founder. Tobias has had experience working in many different countries before starting Calmino Group. These range from working as a banker in Switzerland to selling boats in the Caribbians. Tobias also worked for the Chambers of Commerce in Gothenburg. During the interview, Tobias also mentioned that he had always had an interest in trade and exports. Tobias said that this interest has made it easier for him to conduct business abroad. He stated that

“The thing is, I've always had an interest in it and if you have an interest in something you're not scared, you are not feeling insecure regarding meeting new people because I don't see a difference in selling to Germany or Sweden. Then it is very different, but it's also very different from going from one customer to another. One has to adapt.”

Sahlgrenska Science Park

While Calmino Group had existed since 2003, it was only in 2009 that they joined Sahlgrenska Science Park. They had at that time been conducting clinical trials of their product for two years. Calmino Group decided to join Sahlgrenska Science Park when they were conducting clinical trials. Sahlgrenska University had approached Calmino Group regarding if they would be interested in supporting them in a clinical trial for IBS patients. This created an interest for Calmino Group to situate themselves in Sahlgrenska Science Park. Another reason for them joining was the network that exists at the science park. Tobias found that to be situated within the science park comes from being able to meet people and discuss different topics. Another aspect that has helped the firm was the ability to ask for and receive support from the science park employees. An example of this was brought up by Tobias, at the early stages of the firm, the employees at the science park helped them when it came to the contracts sent by other firms and how to deal with them.

Internationalization

As the firm had already started as an export firm, they had already gained experience within the firm when it came to the global market. Calmino Groups' internationalization has mainly been through the export of their goods to different distributors. These distributors are then mainly in control of the sales of Calmino Groups products. This means that Calmino Group has less control over the sales of its product in each market. Tobias said that to minimize the risk that this brings with it they have a clause within their contract that the firm they are in business with has to follow local laws. This is important since it can be quite difficult for a foreign firm to understand the laws and customs of another country. An example was when Calmino Group sells their product to Iraq which has a very different market and this could lead to difficulties when conducting business there. The distributors run the risk of losing their business with Calmino Group should they start saying things about the product that could hurt the Calmino Group brand. To combat these problems, Calmino Group offered training for firms that are interested in selling their products. Calmino Group then also gets reports from the different firms every quarter regarding their product. The firm keeps in contact with the different firms and tries to meet them in person when they can. The more the firms sell Calmino Groups' products, the more they will try to be in contact with one another.

On the other side, the regulatory aspect of their products also brings with it other problems which need to be solved. For example, Calmino Group has had to brand its product differently depending on which markets they are selling to. The clinical trials are made by Calmino Group and they then have to answer to each market's regulatory body regarding their product to get them approved. To get it approved, they also have to answer questions to the different regulatory bodies and these can differ greatly. The firm therefore has to learn how to be able to answer these questions, even if they might not have anything to do with the product itself and might seem out of place.

Networking

For Tobias, the relationship aspect of business has always been critical. This has been the case since they started as a startup. In the words of David:

“The relationship has always been very, very important. And it’s also because I enjoy it. If I wouldn’t enjoy it, it wouldn’t have been in my interest in the business. So my interest is really to travel around, meet people and talk to them and understand how we can make good business together.”

However, he saw a problem in trying to find the right network to work with. According to him, there will be a lot of different people that want to involve themselves with one firm turn out to not be the correct people to work with.

One of the main reasons for being situated within Sahlgrenska Science Park was according to Tobias the network that exists there. Tobias put a big focus on the environment of the science park, saying that while it is informal, being able to knock on someone's door to ask questions regarding their business is of great importance within the science park. Tobias also said that when they first started in Sahlgrenska Science Park they were able to gain contacts through the help of the science park. However, this has changed in later years and they are now instead focusing on finding networks themselves without the help from the park. The networking has led the firm to be able to tackle the problem with the regulatory aspect of selling their product in different markets. A good example of this is the Japanese market, where Calmino Group has not yet started selling their product, where they have contacts that can help them when it comes to questions regarding how they should handle their business there. They also take help from experts in Sweden when it comes to questions regarding how to conduct their business in different markets. As the firm now has been around for a long time and has gained a lot of knowledge in how to conduct its business abroad, Tobias said that he has seen a growing number of people coming to him to ask for help regarding how and what they should do.

Covid-19

One of the biggest detriments to Covid-19 according to Tobias has been the effect it has had on socializing. This has created a hole within Sahlgrenska Science Park as firms are not able to meet up and discuss things at the same rate since many have instead worked from home. Their production in Germany was also threatened by the pandemic due to the production being shut down.

Key findings

Since the firm began as an exporting firm, it had the experience when it came to how to handle its internationalization. The firm has already launched its product and is selling it to many different countries and see the regulations of these countries as one of the biggest hurdles. Tobias stated that one of the most important aspects of being situated within Sahlgremska Science Park was the network within the science park. While they are still situated within the science park, they now instead see themselves searching more for external networks.

5. Analysis

5.1. The Startup and the Regional Innovation System

While looking at the internationalization of the firms interviewed, it could be seen that it was important to look at the RIS the firm was situated in to look at the firm's capabilities. The RIS can be an important factor for firms when it comes to them competing in the global market (Asheim, et. al., 2011; Coll-Martínes, et. al., 2022). This can be explained as the RIS enables cooperation between many different firms and institutions. With this cooperation, firms might be able to partake in R&D activities they might have otherwise been unable to partake in or take part in networks that exist within the RIS (Zhang, et. al., 2018). A strong RIS helps the individual firm's development by enabling the expansion of the firm's entrepreneurial capabilities and enabling better collaborations with the firm and academia. The collaboration between the firms interviewed and the academic world was something that became quite prevalent throughout the interviews and became the main theme when analyzing the text.

Many of the firms had people from the academic world on their staff that helped with the research and development of the firm's product. Some of the firms also conducted trials for their product together with Sahlgremska University which in turn connected them with the academic world even further. Without a strong RIS, it is possible that these firms could not conduct the trials needed for their product as easily. Dizlin, for example, decided to settle their firm in Gothenburg mainly due to a long collaboration with Sahlgremska and their expertise within neuropsychopharmacology. Seeing also as some of the interviewees themselves came from the

Gothenburg academic world it can be regarded that the RIS is leading to the firm existing at all. Ng, et. al. (2021) argued that students coming from the academic world will bring with them knowledge from the universities which can then be used to increase the firm's competitiveness. In the case of Joyvest, where Isak came up with the idea while still studying at Chalmers university of technology, and later on, he successfully expanded the idea at the science park and built up the firm. It was a great use of his competence. Actors within the RIS, such as Sahlgrenska Science Park also help connect fairly newer firms to other institutions and firms, making the Gothenburg region to become more internationally competitive. Based on these, we can see that establishing one's firm within a strong RIS will also enable the firms to take the first step to become internationally competitive.

5.2. Science Parks and the Development of the Startup

Business development support was also a prevalent subject during the interviews. While being situated within a RIS, the firm might be able to become a part of a science park. A theme that was seen during the empirical chapter was the support that Sahlgrenska Science Park had given the different firms when they first started. The science park offers countless different support for the firm. One of the most important support is the managerial capabilities (Ng, et. al., 2021). The managerial capabilities can allow the firm to further expand their entrepreneurial capabilities as well as support the firms in their business. Most of the firms we interviewed saw great support from the science park in how to conduct their business. The support included help with how the firm should procure investments as well as day-to-day business activities. They do this by direct support to the firms or having lectures which the firm can partake in, and more. An example that was brought up by Charlotta was that they offered lectures at the science park where firms could learn how to make a sales pitch to investors, to make it easier for them when showing off their products to investors and procuring investments. As the firms often can lack knowledge and don't have the resources needed for gaining this knowledge (Baraldi, et. al., 2018), it is identified that it is beneficial for them to be able to partake in the knowledge by experts working within the science park.

Another theme that could be seen was that of collaborations between firms at the science park. Firms are also able to gain access to knowledge, not only by the staff of the science park but through the other firms situated within the science park as well. The environment of the science park enables the firms within it to network with greater ease (Löfsten and Lindelöf, 2004; Ng, et. al., 2021). By having many different firms working close together, knowledge spillover is bound to happen (Ng, et. al., 2021). When talking about networking within the science park, Charlotta emphasized its importance for Sahlgrenska Science Park to pursue an environment that allows for the firms to network with each other. During the interviews, David, Tobias, Isak, and the anonymous interviewee spoke of the great help that they have gained by having the ability to informally ask for help from the other firms working within the science park. The ability to gain access to other firms' knowledge by simply asking is a quite powerful tool that the firms working within the science park can utilize to further develop their firm.

All in all, these can be argued to lead to quicker development of the firm. When speaking of the work the science park does for the firms situated within Sahlgrenska Science Park, Charlotta said that it is a program for the acceleration of startups. This acceleration will arguably lead the firm to a quicker internationalization. Seeing that startups normally might be subject to the liability of newness (Aldrich, 1999), it can be beneficial for them to have the support of a well-established institution behind them. For instance, Isak mentioned that being situated at Sahlgrenska Science Park has made many firms from the outside have contacted them since they see that being within the science park is the same as being a legitimate business. This in and of itself allows the firm to overcome some of the problems that might come with the liability of newness.

5.3. How Startups View and Approaches Internationalization

For a startup that is just entering a market, it might be difficult to have an understanding of where to first look when it comes to its internationalization. According to the 1977 Uppsala model (Johanson and Vahlne, 1977), firms will start with their internationalization and work towards expanding gradually. The firms will, according to the model, start in markets where they see themselves as having better market knowledge and closer ties. An example of this could be seen with MediCase where they established themselves in the Danish and UK markets, two markets

that can be considered quite close to the Swedish one. While they had the chance to also look at the Chinese market they still decided to avoid it for the moment, due to cultural, legal, and market barriers. The way that some of the firms had approached the internationalization for their firms was that they were looking to internationalize, or had internationalized, through more hands-off methods. These methods included looking for licensees, as in the case of Dizlin, or through collaborations with distributors, as in the case of Calmino Group. This is in line with the 1977 Uppsala model where firms will start with a less resource-intensive method for their internationalization (Johanson and Vahlne, 1977). Seeing as the startups often have a lacking resources (Baraldi, et. al., 2018), the firm will have to weigh the risk of the method chosen towards the opportunities that it presents (Johanson and Vahlne, 1977).

5.4. Regulations within the Healthtech Market

Regarding the regulations, Charlotta mentioned that they work closely with the UK market due to it being extremely similar to that of the Swedish one. The similarity in markets can overcome one of the biggest barriers that were brought up by some of the firms when it came to their internationalization. This barrier comes due to the regulations set by different markets when it comes to medicine, healthtech devices, etc. Differencing regulations in each market is a hurdle that each firm has to overcome within the healthtech industry. The cost of overcoming these hurdles can be a big problem for the smaller startup firm as the startup firm often suffers from a lack of resources (Baraldi, et. al., 2018) and this can be a hindrance for the firm in its internationalization. Tobias mentioned in the interview that they have to get their products approved in each country before being able to sell them. To do this, they have to both send the results of their clinical trials and answer questions to each regulatory body. The different regulatory bodies can in many ways hinder the firms from fully internationalizing their product as they will not have the resources to make sure they pass every country's regulations at once. The firms have looked at different ways to overcome these barriers. Dizlin for example is looking at the possibility, while their main plan is to license their product to different markets while conducting the clinical trials for market approval themselves, to sell the firm. The reasoning behind this is that the purchasing firm would have more resources to be able to conduct the trials and overcome the regulations at a much higher rate. Tobias from the Calmino

group also mentioned working closely with the different distributors to make sure that the regulations were passed so that they could sell their products in those markets. At last, the anonymous firm's plan for overcoming these barriers most efficiently was to look at and try to fill the criteria of many different market regulations at once. Seeing this one can bring the connection that knowledge on how to overcome these barriers that exist in the foreign markets is needed for the firm to succeed.

5.5. Networking As a Startup to Internationalize

One of the main themes that were noticed when interviewing both the firms and the supportive institutions was networking. Without networks, it might be very difficult for firms to internationalize. The importance of networks is lifted a lot by different authors, such as Johanson and Vahlne (1990; 2009), Baraldi, et. al. (2019), and Schoonjans, et. al. (2013). As networks allow the firm to gain knowledge that it might not have had before, they are better able to act upon opportunities than they would be outside the network (Johanson and Vahlne, 2009; Schoonjans, et. al., 2013). Startups might lack experience and knowledge, which means that they can get better chances at finding opportunities where they otherwise might not have seen them. For instance, while Dizlin has not yet launched its product, they are working closely with its network to find potential licensees or investors. It might lead to future networks and therefore future expansion. For the case of MediCase, the opportunity arose to look at the Chinese market after being asked by a person within their network to look at establishing themselves in the Chinese market. While this itself did not lead to anything, the opportunity still arose to look at a distant market and see if their business would work there. But through their network, they did manage to find some foreign firms that became their customers. Tobias stated that networking was a very important aspect when it came to their firm, but that the problem lay in finding the right network to work with. Through their network partners in Japan, they have started to look at the Japanese market for future endeavors. Seeing this it can be argued that the networking aspect is an important factor when it comes to the firm's internationalization as they might not have the resources to spend to look at opportunities at all places.

5.6. The Science Parks Support With Networks

One of the most important aspects of the science park for firms working in it is the networking they can expect by being situated within a science park (Ng, et. al., 2021), and this importance was brought up by some of the interviewees. The science park allows the firm an environment where they have the possibility to network both with internal partners within the park as well as external firms and institutions. The external networks might be both regional or international which can help the firm gain more knowledge to be aware of opportunities, gain capabilities that it might have had to spend a lot of resources to gain by itself, and so on. As networks allow firms to punch above their weight it is an important factor for science parks. According to Charlotta, one of the roles of Sahlgrenska Science Park is to connect the firms within the science park to internal and external firms and institutions. Baraldi et. al. (2019) stated that networks that are too homogenous will create stagnation for the firms involved. In this case however, it can be seen that the firms can gain experience from the network partners that might have already encountered the same problem which the startup is now facing, something that might not have been possible unless the firms were quite similar. Charlotta stressed the importance of cooperation between people. One of the main networks that were also brought up within the empirics was that of Health Tech Nordic. Health Tech Nordic helps firms when it comes to their internationalization and helps to connect firms with firms within the healthtech industry. By being situated within Sahlgrenska Science Park, the firms have been able to come into contact with Health Tech Nordic to expand their network and further improve the probabilities that they will succeed in their internationalization, or at least, as the interviewees from Health Tech Nordic puts it, fail faster. By failing faster can everyone move on and the people working within the startup can start developing new products. By coming into contact with different firms that have different experiences such as Sahlgrenska Science Park, Health Tech Nordic, and Business Sweden, the firms can gain knowledge on how to move forward with their internationalization by learning from the firm's past experiences and gaining overseas customers through the networks bridged by them. The firms can also get support from the different firms when it comes to overcoming the barriers put up by regulations according to Health Tech Nordic.

5.7. Entrepreneurial Capabilities

The entrepreneur is an important part of startups when it comes to their internationalization as they are more prone to taking risks (Adam, 2021). The entrepreneur will look more enthusiastically at the international market (Terjesen, et. al., 2016) as it is a high risk but high reward environment (Johanson and Vahlne, 1977). While the answers were mixed by the interviewees regarding if they could be considered entrepreneurs, it can be argued that they are. First of all, Charlotta stressed that they only took in firms that had real hunger fits at the science park, and this included the firm that wanted to quickly enter the international market once they launched their product. If the firm would instead not look at the international market favorably, they would most likely not be situated within the science park. Similarly, Health Tech Nordic mentioned that its goal was to help the firms within it quickly get their products out on the international market. This was so that the entrepreneurs within the firm could either succeed or fail fast. Failing fast would lead to stopping money waste and it would also let the entrepreneurs within the firms start on new projects and learn again as quickly as possible. Hence, while the answers by the case firms might have been inconclusive regarding whether they are entrepreneurs or not, it can be seen by the answers given by Charlotta and the representatives from Health Tech Nordic that they can be considered as such.

Secondly, as Ji (2010) stresses, entrepreneurs who have a strong entrepreneurial spirit, which is an important reason for the emergence of born global firms, or even born digital firms. In the case of Joyvest, which is a born global firm, Iask, as a CEO, has a strong entrepreneurial spirit, a highly motivated individual who is always willing to take risks. Thirdly, corresponding to the case study and theories of Crick and Jones (2000), Oviatt and McDougall (2005), Copper, et. al., (1994), Brush and Chaganti (1998), and Leonidou, et. al., (1998). Founders, CEOs from Joyvest, MediCase, Dizlin, and Calmino Group all have either rich education, overseas background, or both educated and rich working background, especially Dizlin and Calmino Group. This confirms their theory that educated entrepreneurs generally have higher expectations, and improved problem-solving abilities. Their awareness of foreign cultures and foreign business practices, with the help of the science park, tends to lead to better performance and doing quicker in the process of internationalization.

6. Conclusion

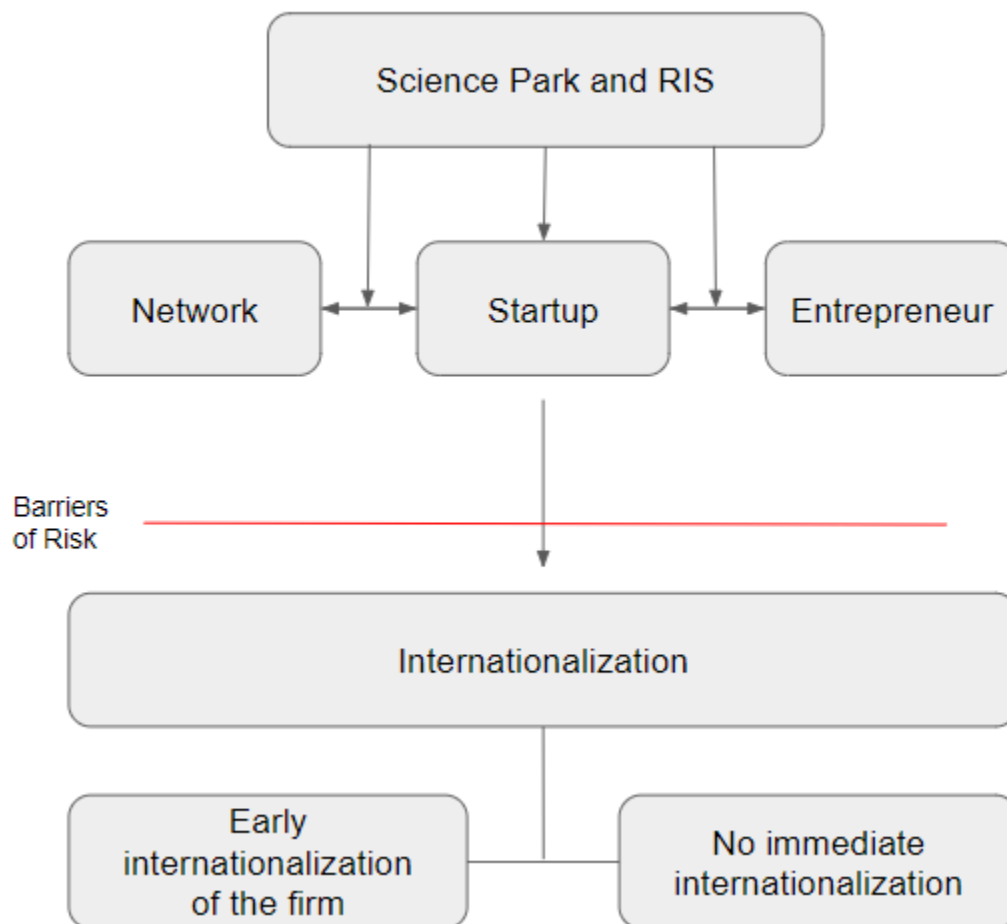


Figure 1: A model of the suspected relationship between the startup, network and entrepreneur when it comes to the startups internationalization and how the science park and RIS affects these relations.

To answer our research question, What support do science parks offer startups and how does it affect their internationalization? The Science park as an accelerated incubator offers to those healthtech startups scratching the ideas, helping them to end up somewhere the most suitable, providing affordable offices. In later stages, providing continuous informal and formal, internal and external networks with different collaborative programs or even with international partners.

It further helps the startup firms to gain competence, creates knowledge flow between the firms or with external parties, as well as helps entrepreneurs evolve, educate market awareness, and minimize risk and challenges through, for example, legal help, finding investors, and so on. The support from the RIS and networking that the firms are a part of also helps them overcome the barriers that exist due to different regulations on the foreign and local markets. This coincides with what the model in *figure 1* explained. The startups' internationalization will be supported by their network, and the science park and RIS will fill a role in connecting and supporting them in this endeavor. This in turn will allow the startup to gain the knowledge to look more favorably at the global market.

From building a startup to approaching internationalization, the science park also builds confidence in entrepreneurs in their decision-making processes, increasing entrepreneurs' market awareness and firms' capabilities. By being situated at a science park, the startups are closer to R&D, academia, and other supporting structures. As the entrepreneur looks at the international market more opportunistically, it can be seen to fit with the model. The science park and RIS will support the entrepreneur, for instance, by sharing their knowledge so that the entrepreneur can grow and focus on developing their product. But the support given might still not be enough to fully overcome the risks and barriers that exist for the firm to be able to fully internationalize.

To conclude, there is a correlation between startups working within a RIS together with science parks and how they internationalize, and it fits our model in *figure 1*. Science parks assume the role of a supportive structure within regional economic development, which is mainly manifested in the accumulation of production factors such as capital, technology, and talents. With the support from the science park, startups are better on the stage, the science park has greatly sped up and facilitated the internationalization processes for them which might in turn lead the firm to become a born global or an INV.

6.1. Future Research Direction

Due to the limited time and objective resources, the research of the thesis still has some deficiencies, which need to be supplemented and deepened by further follow-up research. The research on the healthtech startups is based on limited enterprise research and related data. However, the growth of a startup firm is a complex process, and continuous follow-up investigations are needed to thoroughly understand the growth state of the firm. Therefore, for the sample startup firms in this thesis it is necessary to conduct long-term follow-up investigations in order to grasp the changes in the growth process of the firms as a whole, which is the focus of the next step.

As this thesis mainly looked at the firms working within the healthtech industry, it can skewer the result and might not be as applicable within other industries. More research is thus needed to give a more concrete understanding in exactly how science parks might support the firms in their internationalization. In addition, there was also only one science park that was interviewed for this thesis, the findings of this thesis can have a hard time being generalized. We do however consider them to be applicable to firms working in other science parks as well, but that the support they give can vary. Hence, more research would be needed here to see if this is the case.

7. References

- A. Cavallo, A. Ghezzi, R. Balocco. (2019). *Entrepreneurial ecosystem research: present debates and future directions* Int. Entrep. Manage. J., 15, pp. 1291-1321, 10.1007/s11365-018-0526-3
- Adam, H., (2021). *Entrepreneur*.
<https://www.investopedia.com/terms/e/entrepreneur.asp#:~:text=An%20entrepreneur%20is%20an%20individual,%2C%20and%20business%20for%20procedures>. [Collected 1st of April, 2022]
- Aldrich, H. (1999). *Organizations Evolving*. Sage, Thousand Oaks.
- Aldrich, H. & Auster, E. (1986). Even Dwarfs Started Small: Liabilities of Age and Size and Their Strategic Implications. *Research in Organizational Behavior*. 8. 165-198.
- An, N. and Wang, H., (2008). A Comparative Study on the Development Modes of International Typical University Science Parks. *Science and Technology Management Research*, (1).
- Asheim, B.T., Lawton Smith, H. & Oughton, C., (2011). Regional innovation systems. *Regional Studies*, 45(7), pp.875–891.
- Audretsch, D.B., (1995). Innovation, growth, and survival. *International Journal of Industrial Organization*, 13(4), pp.441-457.
- Audretsch, D.B., Feldman, M.P. (1966). *Innovative clusters and the industry life cycle*. Rev Ind Organ 11, 253–273. <https://doi.org/10.1007/BF00157670>
- Autio, E., Nambisan, S., Thomas, L. D. W., & Wright, M. (2018). Digital affordances, spatial affordances, and the genesis of entrepreneurial ecosystems. *Strategic Entrepreneurship Journal*, 12(1): 72–95.
- Autio, E., Sapienza, H. J., & Almeida, J. G. (2000). Effects of age at entry, knowledge intensity, and imitability on international growth. *Academy of Management Journal*, 43(5): 909–924.
- Baker T, Nelson R E. (2005). Creating something from nothing: Resource construction through entrepreneurial bricolage[J]. *Administrative Science Quarterly*, 50 (3): 329–366.
- Baraldi, E., Havenid, M., Linné, Å., Öberg, C. (2019). *Start-ups and networks: Interactive perspectives and a research agenda*. *Industrial marketing management*, 80(July), pp.58–67.
- Barney J. (1991) Firm resources and sustained competitive advantage [J]. *Journal of Management*, 17(1): 99–120.
- Baum, J. A. C., & Amburgey, T. L. (2002). Organizational ecology. In J. A. C. Baum (Ed.), *The Blackwell companion to organizations* (pp. 304–326). Malden, MA: Blackwell.

Baum, Joel & Oliver, Christine. (1992). Institutional Embeddedness and the Dynamics of Organizational Populations. *American Sociological Review*. 57. 540. 10.2307/2096100.

Bell, E., Bryman, A., and Harley B. (2019) *Business Research Methods*. 5 ed. Oxford: OUP. 688 pages. ISBN: 9780198809876.

Blank, S. (2013), “*Why the lean start-up changes everything*”, Harvard Business Review, May, pp. 63-72.

Brenner, T. et al., (2011). Regional innovation systems, clusters, and knowledge networking. *Papers in regional science*, 90(2), pp.243–249.

Brouthers, K. D., Geisser, K. D., & Rothlauf, F. (2016). Explaining the internationalization of ibusiness firms. *Journal of International Business Studies*, 47(5), 513–534.

Brush, C. G., and Chaganti, R. (1998). Business without glamor? An analysis of resources on performance by size and gender in small service and retail firms. *Journal of Business Venturing*, 14, 233-257.

Casillas, J. and Acedo, F., (2012). Speed in the Internationalization Process of the Firm. *International Journal of Management Reviews*, 15(1), pp.15-29.

Cavusgil, S. T. & Knight, G. (2015). The born global firm: An entrepreneurial and capabilities perspective on early and rapid internationalization. *Journal of International Business Studies*, 46(1), 3-16. <http://dx.doi.org/10.1057/jibs.2014.62>

Chaminade, C., Martin, R. & McKeever, J., (2021). When regional meets global: exploring the nature of global innovation networks in the video game industry in Southern Sweden. *Entrepreneurship And Regional Development*, 2021, Vol. 33, Iss. 1-2, pp. 131-146, 33(1-2), pp.131–146.

Chen, L., Shaheer, N., Yi, J., & Li, S. (2019). The international penetration of ibusiness firms: Network effects, liabilities of outsidership and country clout. *Journal of International Business Studies*, 50(2): 172–192.

Chesbrough, H., Vanhaverbeke, W., West, J., (2006). *Open Innovation: Researching a new Paradigm*. 10.1111/j.1467-8691.2008.00502.x.

Chung, S. (2002). *Building a national innovation system through regional innovation systems*. *Technovation*, 22(8), 485–491.

Coll-Martínez, E., Jové-Llopis, E. & Teruel, M., (2022). The city of start-ups: Location determinants of start-ups in emergent industries in Barcelona. *Growth and change*, pp.Growth and change, 2022.

Colombelli, A. & Quatraro, F. (2019). *Green start-ups and local knowledge spillovers from clean and dirty technologies*. *Small Business Economics*. 52. 1-20. 10.1007/s11187-017-9934-y.

Cooke, P., Uranga, M. G. & Etxebarria, G. (1997). *Regional innovation systems: Institutional and organizational dimensions*. *Research policy*, 26(4–5), 475–491.

Cooper A C, Gimeno-Gascon F J, Woo C Y. (1994). Initial human and financial capital predictors of new venture performance [J]. *Journal of Business Venturing*, (9): pp. 371–395.

Crick, D. and Jones, M.V. (2000) Small High-Technology Firms and International High-Technology Markets. *Journal of International Marketing*, 8, 63-85.

Delgado, M., Porter, M. and Stern, S., (2010). Clusters and entrepreneurship. *Journal of Economic Geography*, 10(4), pp.495-518.

Desa, G. and Basu., (2014). Responding to Market Failures: The Role of Business Models in Social Entrepreneurship. *Academy of Management Proceedings*, 2014(1), p.17338.

Dubois, A. and Gadde, L.-E., (2002). Systematic combining: an abductive approach to case research. *Journal of business research*, 55(7), pp.553–560.

Dushnitsky, Gary & Lenox, Michael. (2005). When do Firms Undertake R&D by Investing in New Ventures? *Strategic Management Journal*. (26). 947 - 965.

Ebben, J., & Johnson, A.C., (2005). "Efficiency, flexibility, or both? Evidence linking strategy to performance in small firms," *Strategic Management Journal*, Wiley Blackwell, vol. 26(13), 1249-1259.

Eden, L. and Miller, S.R. (2004), "Distance matters: liability of foreignness, institutional distance and ownership strategy", *Advances in International Management*, Vol. 16, pp. 187-221.

Feldman, M.P., (2001), "The Entrepreneurial Event Revisited: An Examination of New Firm Formation in the Regional Context," *Industrial and Corporate Change* 10, pp. 861-891.

Fletcher, D.R., (2004), "Demand-led programmes: Challenging labor-market inequalities or reinforcing them?" *Environment and Planning C: Government and Policy* 22 115–128

Forsgren, M. (2002). The concept of learning in the Uppsala internationalization process model: a critical review [J]. *International Business Review*, vol.11, issue 3, pp. 257-277

Fukugawa, N. (2018). *Is the impact of an incubator's ability on incubation performance contingent on technologies and life cycle stages of startups?: evidence from Japan* *Int. Entrep. Manag. J.*, 14 (2018), pp. 457-478, 10.1007/s11365-017-0468-1.

Freeman, C. (1995). *The "National System of Innovation" in historical perspective*. *Cambridge Journal of Economics*, 19(1), 5–24.

Freeman, J., Carroll, G. R., & Hannan, M. T. (1983). The Liability of Newness: Age Dependence in Organizational Death Rates. *American Sociological Review*, 48(5), 692–710.

Ghauri, P. N., Grønhaug, K. and Kritianslund, I. (2005). *Research methods in business studies: A practical guide*. Prentice Hall: Dorchester.

Granovetter, M. S. (1973). The Strength of Weak Ties. *American Journal of Sociology*, 78(6), 1360–1380. <http://www.jstor.org/stable/2776392>

Harvard Business Review. (2021). *The State of Globalization in 2021*. <https://hbr.org/2021/03/the-state-of-globalization-in-2021> [Collected 30th of March, 2022]

Hayes, A. (2021). *Entrepreneurs*. <http://abcexchange.io/terms/e/entrepreneur.asp> [Collected 15th of May, 2022]

HealthTechNordic. (2022). <https://healthtechnordic.com/> [Collected 19th of May, 2022]

Hennart, J. F. (2014). The accidental internationalists: A theory of born globals. *Entrepreneurship Theory and Practice*, 38(1): 117–135.

Ji, K. (2010). *Born Global Enterprise: Theory and Enlightenment*. <https://m.xzbu.com>. [Collected 14th of April, 2022]

Johanson J, Sharma D D. (1987). Technical consultancy in internationalization[J]. *International Marketing Review*, 1987, (4): 20–29.

Johanson J, Vahlne J E. (1977). The internationalization process of the firm: a model of knowledge development and increasing foreign market commitments[J]. *Journal of International Business Studies*, 1977, 8(1): 23–32.

Johanson J, Vahlne J E. (1990). The mechanism of internationalization[J]. *International Marketing Review*, 7(4): 11–24.

Johanson J, Vahlne, J E. (2009). The Uppsala internationalization process model revisited: From liability of Foreignness to Liability of Outsidership. *Journal of international business studies*, 40(9), pp.1411–1431.

Johanson J, Vahlne J E.. (2013). The Uppsala model on evolution of the multinational business enterprise – from internalization to coordination of networks. *International Marketing Review*, 30(3): 189-210.

Jolly, VK, Alahuta, M. and Janet, J.-P. (1992) ‘Challenging the incumbents: how high technology start-ups compete glob-ally’, *Journal of Strategic Change*, 1: 71–82.

Li, W. (2008). Analysis on the Forming Factors of Rapidly Internationalized Enterprises. [J] *CENT. SOUTH UNIV. (SOCIAL SCIENCE)*, 14(6). Pp. 802-805.

Liu, LX. (2012). *A review of western theories on international new ventures*. <http://www.cqvip.com/qk/80357a/201204/41812749.html>

Kalinic, I. & Forza, C. (2012). Rapid internationalization of traditional SMEs: Between gradualist models and born globals. *International Business Review*, 21(4), 694-707.

Knight, G., & Cavusgil, S. T. (2004). Innovation, organizational capabilities, and the born-global firm. *Journal of International Business Studies*, 35(2): 124–141.

Korstjens, I. and Moser, A. (2017) Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice*, 24 (1): 120–124.

KPMG. (2020). *Industry impact and future development trends of COVID-19* <https://assets.kpmg/content/dam/kpmg/cn/pdf/en/2020/02/how-novel-coronavirus-affects-various-industries-and-future-development-trends.pdf> [Collected 5th of February, 2022]

KPMG. (2021). *14th-five-year-plan industry impact outlook medical*. [online] Available at: <<https://assets.kpmg/content/dam/kpmg/cn/pdf/zh/2021/06/.pdf>> [Collected 1st of February, 2022].

Liesch, P.W., Welch, L.S. & Buckley, P.J., (2011). Risk and Uncertainty in Internationalization and International Entrepreneurship Studies: Review and Conceptual Development. *Management international review*, 51(6), pp.851–873.

Lindelof, P. & Lofsten, H., (2002). Science Parks and the growth of new technology-based firms—academic-industry links, innovation and markets. *Research Policy*, 31(6), pp.859–876.

Lindelof, P. & Lofsten, H., (2004). Proximity as a Resource Base for Competitive Advantage: University–Industry Links for Technology Transfer. *The Journal of technology transfer*, 29(3), pp.311–326.

Lindqvist M. (1988). *Internationalization of Small Technology-Based Firms, Three Illusive Case Studies on Swedish Firms*, Research Paper 88/15, Institute of International Business, Stockholm School of Economics.

Leonidou, L.C., Katsikeas, C.S. and Piercy, N.F. (1998), “Identifying managerial influences on exporting: past research and future directions”, *Journal of International Marketing*, Vol. 6 No. 2, pp. 74- 102.

Madsen, T. and Servais, P., (1997). The internationalization of Born Globals: An evolutionary process? *International Business Review*, 6(6), pp.561-583.

Magretta, J. (2002), “*Why business models matter*”, Harvard Business Review Spotlight: Practical Strategy, Vol. 80 No. 5, pp. 86-92.

Marcon, A. and Ribeiro, J., (2021). How do startups manage external resources in innovation ecosystems? A resource perspective of startups’ lifecycle. *Technological Forecasting and Social Change*, 171, p.120965.

McDougall P P, Oviatt. B M. (1994). Toward a theory of international new ventures [J] *Journal of International Business Studies*, (25): 45-64.

McDougall P P, Shane S, Oviatt B M. (1994). Explaining the formation of international new ventures: The limits of theories from international business research [J]. *Journal of Business Venturing*, (9): 469–487.

McGrath, R.G. (2010) Business models: a discovery driven approach. *Long. Range Plan.* 43 (2–3), pp. 247-261

Mitrega, M. et al., (2012). Networking capability in business relationships — Concept and scale development. *Industrial marketing management*, 41(5), pp.739–751.

Mobilehealthnews. (2021). *Report: COVID-19 accelerates health tech investment in 2021*. <https://www.mobihealthnews.com/news/report-covid-19-accelerates-health-tech-investment-2021#:~:text=The%20COVID%2D19%20pandemic%20had,away%20from%20bigger%20health%20systems.> [Collected 16th of April, 2022]

Monaghan, S., Tippmann, E. & Coviello, N. Born digitals: Thoughts on their internationalization and a research agenda. *J Int Bus Stud* 51, 11–22 (2020). <https://doi.org/10.1057/s41267-019-00290-0>

Mustin K, Newey S, Irvine J et al., (2011). *Biodiversity impacts of game bird hunting and associated management practices in Europe and North America*. RSPB report.

Nambisan, S. (2017). Digital entrepreneurship: Toward a digital technology perspective of entrepreneurship. *Entrepreneurship Theory and Practice*, 41(6), 1029–1055.

Nambisan, S., Zahra, S. A., & Luo, Y. (2019). Global platforms and ecosystems: Implications for international business theories. *Journal of International Business Studies*, 50(9): 1464–1486.

Ng, W.K.B. et al., (2021). Perceptual measures of science parks: Tenant firms’ associations between science park attributes and benefits. *Technological forecasting & social change*, 163, p.120408.

Nowell, L.S. et al., (2017). Thematic Analysis. *International Journal of Qualitative Methods*, 16(1), pp.1–13.

Oviatt, B. M., & McDougall, P. P. (2005). *Defining international entrepreneurship and modeling the speed of internationalization*. *Entrepreneurship theory and practice*, 29(5), 537-554. <http://dx.doi.org/10.1111/j.1540-6520.2005.00097.x>

Paul, N., Alex, C., (2020). *The myth of the science park economy*. <https://demos.co.uk/>

Porter, M.E., (1990). *The Competitive Advantage of Nations*, Free Press, New York.

Porter, M.E., (1998) , ‘Competing Across Locations: Enhancing Competitive Advantage Through a Global Strategy, in Porter, M. (Ed.): *On Competition*, Harvard Business School, Boston, pp. 305-344.

Radosevic, S., Myrzakhmet, M. (2009). *Between vision and reality: promoting innovation through technoparks in an emerging economy*. *Technovation*, 29, pp. 645-656.

Ramos, E., Acedo, F. and Gonzalez, M., (2011). Internationalization speed and technological patterns: A panel data study on Spanish SMEs. *Technovation*, 31(10-11), pp.560-572.

Ries, E. (2011), *The Lean Startup: How Today’s Entrepreneurs Use Continuous Innovation to Create Radically Successful Business*, Crown Business, New York, NY.

Rothaermel, F.T., & Deeds, D.L. (2004). Exploration and Exploitation Alliances in Biotechnology: A System of New Product Development. *Strategic Management Journal*, 25, 201-221.

Rubin, H.J. and Rubin, I.S. (1995) *Qualitative Interviewing: The Art of Hearing Data*. 2nd Edition, Sage Publications, London.

Ruef, Martin & Aldrich, Howard & Carter, Nancy. (2004). The Structure of Founding Teams: Homophily, Strong Ties, and Isolation among U.S. Entrepreneurs. *American Sociological Review*. 68.

Sahlgrenska Science Park, (2022). <https://www.sahlgrenskasciencepark.se/about-us>. [Collected 6th of May, 2022]

Sapienza, H.J., and Gupta, A.K. (1994). The impact of agency risks and task uncertainty on venture capitalist-CEO interaction. *Academy of Management Journal*. 37(5):1618-1632.

Saxenian, A., (1994). *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. Cambridge, MA: Harvard University.

Schepis, D., (2021). How innovation intermediaries support start-up internationalization: a relational proximity Perspective. *The Journal of business & industrial marketing*, 36(11), pp. 2062–2073

Schoonjans, B., Van Cauwenberge, P. and Vander Bauwhede, H., (2013). *Formal business networking and SME growth*. *Small business economics*, 41(1), pp.169–181.

- Sean, Brgant. (2022). How Many Startups Fail and Why? <https://www.investopedia.com/articles/personal-finance/040915/how-many-startups-fail-and-why.asp> [Collected 30th of March, 2022]
- Shane, SA. (2003). A General Theory of Entrepreneurship: The Individual-Opportunity Nexus. *A General Theory Of Entrepreneurship: The Individual-Opportunity Nexus*. 1-327.
- Sharma, D.D. and Blomstermo, A. (2003), “The internationalization process of born globals: a network view”, *International Business Review*, Vol. 12 No. 6, pp. 739-753.
- Spradley, James P. (1979). *The Ethnographic Interview*. New York: Holt, Rinehart and Winston
- Startup and places. (2021). <https://startupsandplaces.com> [Collected 14th of February, 2022]
- Startup Genome. (2018), “*Global startup ecosystem report 2018. Succeeding in the new era of technology*”, available at: [https:// startupgenome.com/all-reports](https://startupgenome.com/all-reports) (Collected 2nd of April 2020).
- Stuart, T. (2000). Interorganizational alliances and the performance of firms: A study of growth and innovation rates in a high-technology industry. *Strategic Management Journal*. (21).
- Su, W. Guo, Y. Yuan, D. Yang, F. Liu, S. (2020). The evolution process of the smart industry cluster in Zhongguancun Science and Technology Park, dynamic factors and agglomeration patterns. *Progress in Geography*. 39(9). pp. 1487-1492
- Swann, G.M. P., M. Prevezer and D. Stout (eds.), (1998), *The Dynamics of Industrial Clustering: International Comparisons in Computing and Biotechnology*, Oxford: Oxford University Press.
- Terjesen, S. Hessels, J. and Li, D. (2016), “Comparative international entrepreneurship: a review and research agenda”, *Journal of Management*, 42(1), pp. 299-344.
- Theeranattapong, Thunyanun & Pickernell, D. & Simms, C.. (2021). Systematic literature review paper: the regional innovation system-university-science park nexus. *The Journal of Technology Transfer*. 46. 1-34. 10.1007/s10961-020-09837-y.
- The Economist. (2019). *Globalization is dead and we need to invent a new world order*. <https://www.economist.com/open-future/2019/06/28/globalisation-is-dead-and-we-need-to-invent-a-new-world-order> [Collected 30th of March, 2022]
- The World Bank, (n.d.), *Small and Medium Enterprises (SMEs) Finance*. <https://www.worldbank.org/en/topic/smefinance> [Collected 10th of May, 2022]
- Thomas, P. (1999), “*Today's Women Owned Ventures Are Cutting Edge Enterprises*,” Wall Street Journal Online.

Tippmann, E., Monaghan, S., & Reuber, R. (2018). *Global scaling: An inherent paradox and its navigation*. In Paper presented at the Academy of Management special conference, Tel Aviv, Israel.

Vadana, II., Torkkeli, L., Kuivalainen, O., Saarenketo, S. (2019). *The Internationalization of Born-Digital Companies*. The Academy of International Business. Palgrave Macmillan, Cham.

Vitalis, (2022). *Exhibition | Vitalis - English*. [online] Available at: <<https://en.vitalis.nu/home/exhibition/>> [Accessed 10 May 2022].

Wang Y., Liang S., Zhao Z., (2017). A review of frontier research of internationalization speed: building a theoretical model from the perspective of the overall process. [J]. *Foreign Economics & Management*, 39(9): 98-112. DOI: 10.16538/j.cnki.fem.2017.09.008.

Walrave, B., Talmar, M., Podoyntsyna, K., Romme, A. and Verbong, G., (2018). A multi-level perspective on innovation ecosystems for path-breaking innovation. *Technological Forecasting and Social Change*, 136, pp.103-113.

Welch, L., & Luostarinen, R. (1988). Internationalization Evolution of a Concept. *Journal of General Management*, 14, 34-55.

Walrave B , Talmar M , Podoyntsyna KS , Romme AGL , GPJ M. (2018). *A multi-level perspective on innovation ecosystems for path-breaking innovation Technol. Forecast. Soc. Chang.*, 136, pp. 103-113.

Wentrup, R. (2016). The online–offline balance: Internationalization for Swedish online service providers. *Journal of International Entrepreneurship*, 14(4), 562–594.

World Economic Forum. (2019). *A brief history of globalization*. <https://www.weforum.org/agenda/2019/01/how-globalization-4-0-fits-into-the-history-of-globalization/> [Collected 30th of March, 2022]

Xiao, W. Chen, Y. (2008). Factors Influencing Enterprise Internationalization. *J. CENT. SOUTH UNIV. (SOCIAL SCIENCE)*, 14(1), pp. 18-20.

Yin, R. K. (2002). *Case Study Research: Design and Methods (Applied Social Research Methods) 3rd Edition*. SAGE Publications

Yin, R. K. (2008). *Qualitative research from start to finish*. Guilford Press, the second edition.

Zacharewicz, T., Sanz Menendez, L. & Jonkers, K. (2017). *The internationalization of research and technology organizations*. Luxemburg: Publications Office of the European Union EUR, 28442.

Zahra, S.A. (2005), “A theory of international new ventures: a decade of research”, *Journal of International Business Studies*, Vol. 36 No. 1, pp. 20-28.

Zahra, Shaker & Rawhouser, Hans & Bhawe, Nachiket & Neubaum, Donald & Hayton, James. (2008). Globalization of Social Entrepreneurship Opportunities. *Strategic Entrepreneurship Journal*. 2. 117 - 131.

Zhang (2022). In the post-pandemic era, how does the overseas market of medical devices continue to be popular? <http://124.133.228.83/> [Collected 28th of Feb, 2022]

Zhang, Y. Chen, L. Yuan, X. (2018). Construction of Regional Innovation System Based on Industrial Cluster.

8. Appendix

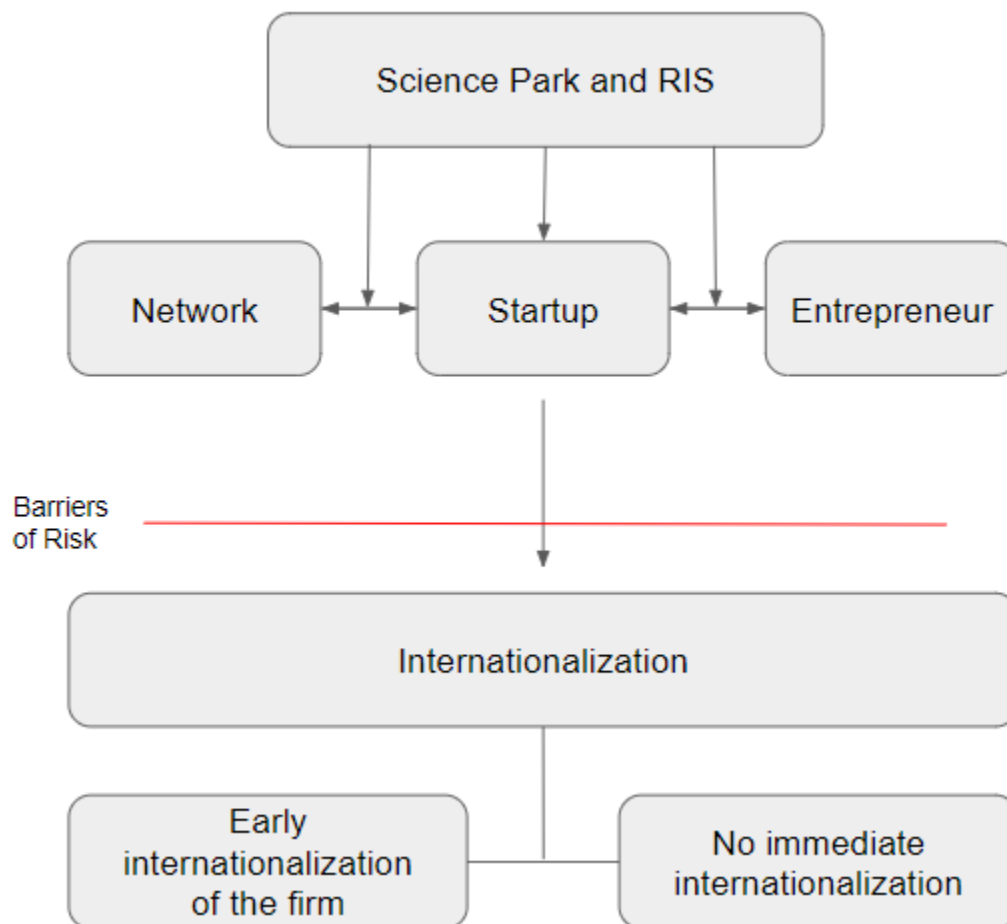


Figure 1: A model of the relationship between the startup, network and entrepreneur when it comes to the startups internationalization and how the science park and RIS affects these relations.

<i>Number</i>	<i>Firm/Work unit</i>	<i>Interviewee</i>	<i>Interview Date</i>
1	MediCase	David	04/20/22
2	Joyvest	Isak	04/29/22
3	Dizlin	Björn	05/06/22
4	anonymous	anonymous	05/10/22
5	Calmino Group	Tobias	05/12/22
6	Sahlgrenska Science Park	Charlotta	05/04/22
7	Vitalis Fair	Multiple interviewees	05/18/22

Figure 2: The people interviewed for the thesis, which firms they belong to and the date at which they were interviewed

9. Index

Interview questions for the Startups

- **Question 1**

How do you describe yourself? (e.g. what do you do? entrepreneurship spirit?) Do you have any previous business experiences/overseas education, living experience?

(Follow up) Are these experiences helping you during the business journey?

- **Question 2**

How has Covid-19 affected your work?

(Did it affect your business plan in any way; Also ask about internationalization plans?)

- **Question 3**

What was the reason that you chose to situate your firm within Gothenburg?

(Follow up) How come you chose to situate yourself in a science park rather than being somewhere else?

- **Question 4**

If your firm considers internationalization at an early stage, have you customized content (products) exclusively for the local markets or other countries, or both?

(Follow up) Has being situated with Sahlgrenska science park affected this in anyways?

- **Question 5**

Have you had any collaborations with other firms during your work in Sahlgrenska Science Park?

(Follow up) Is the collaboration with the firms at the science park, or with external firms?

- **Question 6**

Have you worked together with many foreign firms during your work in the startup?

(Follow up) How has this affected your view on the internationalization of your firm?

(Follow up) Do you feel that Sahlgrenska science park has allowed you opportunities to expand your network in ways that would have been difficult by yourself? And if they supported you in connecting with relevant foreign firms?

- **Question 7**

In summary, what are the biggest advantages and risks (e.g. the newness?) you think?

What does your company do to mitigate these risks? What do you wish that the science park would support you with that they don't already do to help you with this?

Interview questions for the Science Park

- **Question 1**

How long have you been working at the park? Could you briefly describe your role?

- **Question 2**

What are your main tasks/responsibilities towards connecting the external/internal sources for the Startups at the park?

- **Question 3**

How does Sahlgrenska science park provide support when it comes to the networking of the startups?

(Follow up) Ask about international networking.

- **Question 4**

How does the science park help entrepreneurs at the park to internationalize?

- **Question 5**

What would you identify and consider as risk/challenging sides for Startups' internationalization? How does the science park help the startups reduce the risk?
(*Follow up*) And how can that be improved with RIS in the big picture?

- **Question 6**

Do you have additional options (Covid-19 and the future, etc) on how to upbringing the startups that are at the science park?

Interview questions for the Vitalis fair

- **Question 1**

Are you a startup firm? If yes, what is your role, anything about entrepreneur spirit (work experience, education background, overseas experience, etc)

- **Question 2**

Has your firm approached internationalization? What were the biggest advantages and challenges/risks when conducting so?

(If you haven't, what happened to stop you? And will you try again in the future?)

(If you are planning, what are the biggest advantages and challenges/risks that you see?)

- **Question 3**

Why is your firm taking part in the Vitalis fair? Networking or?

- **Question 4**

Has the Covid-19 pandemic affected your business? And what is your future plan?

- **Question 5**

Are you situated within a science park? If yes/no, why?