

The Role of Entrepreneurial Ecosystem in the Internationalisation of High Growth SMEs in Health Technology Business

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Abstract

The concept of the entrepreneurial ecosystem (EE) has recently attracted a lot of research attention. Despite the growing popularity, there is still a limited theoretical, empirical and conceptual understanding of the phenomenon. The purpose of this study is to explore the role of EE in the high growth SMEs' internationalisation, specifically in the context of the health technology business in Finland. Due to the limited size of the domestic markets, internationalisation is often the only possibility for these companies to grow their business. In addition to the practical relevance, the topic is also important from the theoretical perspective, since internationalisation has not been addressed adequately in the existing research on EEs. Moreover, empirical studies on EEs are still scarce. This study aims to fill these research gaps by presenting an extensive qualitative explorative study. In total, 19 interviews with health-tech SME's decision-makers comprising managing directors/chief executive officers and senior managers were conducted during autumn 2019. According to our findings, EE is crucial for high growth health-tech SMEs' internationalisation, especially in the early phases, but there are also shortcomings in utilizing the EE. EE can enhance internationalisation by providing foreign market entry support, boosting collaboration within the ecosystem, offering various networking opportunities including access to resources and references, and increasing credibility for the high growth SMEs. Overall, this research makes valuable insights into both the theory and practice of EE research. It is among the first attempts to study the role of EE in the high growth SMEs' internationalisation in the health-tech business and thus provides valuable implications to both academics and business managers.

Keywords: Entrepreneurial ecosystems, health technology, high growth SMEs, internationalization.

JEL classification: M31.

1. Introduction

The health technology industry is one of the fastest-growing industries globally (Malmström and Hed, 2010). Europe is the second-largest health-tech market, with more than 80% of companies comprising of small and medium-sized enterprises (MedTech Europe, 2019). Finland can be called a small giant of health-tech with more than 2.3 billion export of health technology (Healthtech Finland, 2018). Health-tech business is thus a significant field of business both in Finland and internationally, specifically for SMEs. As compared to large multinational corporations, small firms often have promising ideas, organizational agility, willingness to take risks, and aspirations of rapid growth (Weiblen and Chesbrough, 2015). However, growth is not self-evident or easy for small companies operating in the health-tech business, specifically in a small country such as Finland. The domestic market is too limited in size to be profitable, which creates a need for companies to seek growth through internationalisation. In their endeavors to extend business abroad, the entrepreneurial ecosystem (EE) around the SMEs may provide a significant starting point.

The concept of the entrepreneurial ecosystem has recently attracted a lot of research attention (Stam, 2015; Stam and Spigel, 2017). Stam (2015) defines it as “a set of

interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship” (p. 1765). The entrepreneurial ecosystem approach offers a distinctive perspective on the clustering of economic activity that is mostly ignored and underplayed in previous studies. It focuses on entrepreneurial activity and especially on high growth firms (Mason and Brown, 2014). High growth businesses with significant management functions and R&D are at the heart of an EE (Bosma and Stam, 2012). Furthermore, as Mason and Brown (2014) point out, EEs are often industry-specific (e.g., pharmaceuticals cluster in Copenhagen and mobile cluster in North Jutland, Denmark) and emerge in locations that have place-specific assets. Since EEs are conducive to the emergence of high growth ventures (Mason and Brown, 2014), their role in the internationalisation of the health-tech SMEs aiming at high growth needs further research attention.

Although the EEs have become a popular research field in academia, there is still limited theoretical, empirical and conceptual body of inquiry underpinning the key phenomenon (Colombo et al. 2019). The previous studies have focused on, for example, defining the EE concept (Isenberg, 2010; Manson and Brown, 2014; Stam, 2015), examining the roots of EE in terms of its antecedents in the literature (Acs et al. 2017), developing a process perspective on EE (Spigel and Harrison, 2018) and studying the governance structure of EE (Colombo et al. 2019). However, internationalisation has not been adequately addressed in the existing research (Mohammadparast Tabas, Komulainen, and Arslan, 2020). However, this is often critically important for high growth ventures that are in the core of EE. Besides, empirical studies on EEs are still scarce. EE scholars have pointed to a need to create a better understanding of entrepreneurship in broader contexts such as in their regional, temporal and social settings (Autio et al. 2014; Zahra and Wright, 2011; Zahra, Wright, and Abdelgawad, 2014). This study aims to fill these research gaps by presenting an empirically grounded research to answer the following research question: What kind of role does EE play in the high growth SMEs’ internationalisation in the context of health-tech business?

To answer the research question, an extensive qualitative exploratory study is conducted. The data consists of altogether 19 interviews with managers of health-tech SMEs’ in Finland and other sources of information, such as the collection of diverse archival material (e.g., articles, press releases, and company webpages). According to our findings, EE can be crucial for the high growth SMEs’ internationalisation, especially in the early phases. We identified six main aspects that extensively describe the EE’s role in the high growth SMEs’ internationalisation in the health-tech context. EE provides various benefits, yet there can also be shortcomings in utilizing the EE in the firms’ internationalisation process. Theoretically, this study contributes to the existing EE research by exploring this timely topic empirically in the under-researched, yet highly relevant context of the internationalisation of high growth SMEs in the health-tech business. From the practical perspective, better understanding the role of the EE provides valuable insights for the managers of high growth SMEs on how to view internationalisation and how to utilize EEs most efficiently.

The remainder of this study is organized as follows. First, the literature review sheds light on the previous research in the field of EE, and after that, the methodology of the study is described. Next, the empirical findings are discussed. Finally, conclusions present theoretical contributions, managerial implications, and future research suggestions of the study.

2. Literature review

There are several features inherent for EEs that aid in understanding their nature. Entrepreneurial ecosystem approach focuses on the unique needs and trajectories of innovative high-growth ventures rather than traditional statistical indicators of entrepreneurship, such as “self-employment” or “small businesses” (Stam, 2015; Spigel and Harrison, 2018). The EE

approach often narrows this entrepreneurship down to “high-growth start-ups” and claiming that this type of entrepreneurship is an essential source of innovation, productivity, growth and employment (Mason and Brown, 2014). According to Alvedalen and Boschma (2017), EE research aims to provide an explanation of entrepreneurship and specifically of high quality, ambitious entrepreneurship. Due to the emphasis on firm’s growth, in EE approach size is seen as a “temporary state” and hence it is not given undue attention. Nevertheless, the EE perspective recognizes that high growth firms make a disproportionate contribution to economic growth and need to be actively fostered to generate further rounds of ‘blockbuster entrepreneurship’ (Mason and Brown, 2014). EE creates a supportive regional environment that increases the competitiveness of new ventures (Spigel, 2017).

The success of an innovating entrepreneurial firm often depends on the efforts of other innovators in its environment (Adner and Kapoor, 2010). Hence, despite the emphasis on high growth firms, different types of firms are also essential in the EE. As Stam (2015) states, leadership provides direction and role models for the EE. For example, large, established companies focusing on R&D can provide the foundation for a technology base in an area (Cohen, 2006). The ecosystem thus becomes a vehicle for partners to leverage one another’s capabilities and enhance their innovation and financial performance (Zahra and Nambisan, 2011). This kind of leadership is critical in building and maintaining a healthy ecosystem (Stam, 2015).

EE provides various benefits for the involved firms. Previous research identifies that the ecosystem enables entrepreneurs to identify untapped market niches and draw on the local resources, support and financing to grow new ventures into globally competitive firms (Spigel and Harrison, 2018). EE can provide support for the entrepreneur in various forms, for example, emotionally, financially, and in the form of education (Isenberg, 2010; Feld, 2012). Also, EE can offer entrepreneurs human capital and workforce (Foster et al. 2013) and the flow of tacit knowledge between the companies in the ecosystem (Saxenian, 2007). Moreover, EE can help to speed up innovation and improve customer service (Williamson and Meyer, 2012).

In terms of internationalisation, extant EE research is quite taciturn. It has been suggested that ecosystem can equip firms with a more proactive attitude in the overseas market (Rong et al. 2015). High growth SMEs usually face the liability of newness (Stinchcombe, 1965) and foreignness (Zaheer, 1995) that can hinder their internationalisation, especially in its early phases. The newness of entrepreneurial ventures means that such enterprises are initially not known and are usually poorly understood within an ecosystem (Kuratko et al. 2017). Entrepreneurs confront a significant challenge in legitimizing their venture in the eyes of potential foreign partners (Komulainen et al. 2006) and within an entrepreneurial ecosystem (Kuratko et al. 2017). New enterprises lacking legitimacy struggle to access resources and support (Fisher, Kotha, and Lahiri, 2016). Therefore, internationalization is important to them.

SMEs in the health-tech sector face different challenges in their internationalisation process compared to small firms operating in other industries. For example, they need to pass specific regulation certificates. Even this is not always enough since although the company has a regulation certificate (CE mark) in the EU, they still need to get the Food and Drug Administration (FDA) approval if they want to enter to USA markets. Thus, internationalisation poses many different challenges to health-tech SMEs. To be able to overcome those, EE can provide significant help. In order to understand its role, we will next empirically explore Finnish health-tech high growth SMEs’ internationalisation.

3. Methodology

This paper presents a qualitative exploratory study (Denzin and Lincoln, 2000). The research process follows an abductive logic in terms of continually going back and forth

between empirical observations and theoretical concepts (Dubois and Gadde, 2002). The empirical data consists of interviews with the key companies' representatives in the North Finland health-tech ecosystem. More specifically, interviews were conducted during September-December 2019 with Managing Directors/Chief Executive Officers and Senior Managers of altogether 19 health-tech SMEs aiming at high growth in their business. The firms were selected based on their collective mindset, i.e. with ambitions to grow. Although all firms in our study do not fulfill the strict criteria of high growth ventures defined by EUROSTAT-OECD (that is, enterprises with average annualized growth greater than 20% per annum, over three years; growth being measured by the number of employees or by turnover). Firms examined in this study are in different stages of their growth and internationalisation, thus offering us a versatile and comprehensive data of various aspects related to EE's role in internationalisation. Interviews were conducted as semi-structured and they varied in duration between 47-100 minutes. All interviews were recorded and transcribed word-for-word. In addition to interviews, other sources of information, such as the collection of archival material (e.g., articles, press releases, company webpages), were utilized. The data was analysed using a content analysis method. The whole data set was read through several times, and notes were made about the ad hoc interpretations and interesting issues emerging from the data. The verbatim interview transcripts provide the raw data for analysis, while another source material was used to complement the understanding of the research phenomenon. As suggested by Miles and Huberman (1994), the analysis was implemented through phases of data reduction, data display and concluding.

4. Empirical study

In this chapter, we present the results of analysing the role of EE in the high growth health-tech SMEs' internationalisation based on our empirical data. We identified six main aspects that extensively describe the EE's role in the high growth SMEs' internationalization in the health-tech business. These are highly intertwined and even partly overlapping, but present the various vital facets related to the phenomenon under scrutiny.

4.1 Foreign market entry support

Firstly, the analysis of the empirical data confirms the fact already known that the main reason for Finnish health-tech SMEs to start internationalisation is the small size of the domestic markets. The companies were unanimous that the Finnish market is not big enough to be profitable, and that creates an urge to extend the business to foreign markets. In addition, due to the small size of health-tech markets in Finland, firms often use the domestic market as a testbed that helps them go to international markets when they start to grow.

"The customer base in Finland is simply a drop in the ocean. And there is a huge need for our product globally. For us, it would not make sense to operate just in Finland, and it would not be viable at least." Company A

Based on the data, the EE may help high growth SMEs' foreign market entry. It can provide knowledge about the potential new markets, and this way aid in choosing the most prominent markets where to start the firm's internationalisation. Some companies said that their entrepreneurial ecosystem had a definite influence on what market they decided to target at the beginning of their internationalisation.

"Last year, Business Finland [i.e. public funding agency for research funding in Finland directed by the Finnish Ministry of Employment and the Economy] provided a project for companies in our entrepreneurial ecosystem to study our internationalisation possibilities. It helped us. We understood that especially the emerging markets such as China, India, etc. are

the potential markets for us. One reason is that they don't have extensive legislation yet that would prohibit us from entering the market". Company B

Besides, EE can provide direct information related to a particular market, or it might indirectly connect the firm to someone who can provide the needed information.

"Our entrepreneurial ecosystem helped us to get an understanding of the potential new markets [...] They give us answers to our concerns and they indirectly connect us to someone to provide us the answer". Company C

At the beginning of internationalisation, it is also essential for health-tech SMEs to be able to join a foreign market ecosystem, and the local EE can be beneficial in this. Having international contacts can considerably smooth the overseas market entry phase.

"We already have a joint venture with the Chinese company called Mini Silicon Valley. They are enabling us to start our business in China. With the help of them, we can get access to the China market." Company D

4.2 Collaboration within ecosystem

One of the critical benefits of EE is the diverse forms of collaboration within the ecosystem. Some firms said that the network around them gives them a chance of interacting with others in the ecosystem and in relation to this, to get help from each other whenever needed.

"In the Finnish ecosystem, we have a perfect relationship with the companies. I know most of the Finnish companies related to the area. We have a certain kind of 'helping each other' mentality here. [...] I think the success of the individual company depends on the ecosystem. Alone it is hard for a small company to make such an impact that we need to do. We need to use the partners, and we need to work with the partners to get that impact out." Company E

According to our data, the EE around the companies gives them a chance of together having more visibility and possibly even a more comprehensive product portfolio.

"Health-tech business is for a startup company too much time consuming and money consuming without the partners. We are just building the type of network where we would be a partner where our product may be a part of a more significant product portfolio, and we try to find the partner for that because that is the way to survive". Company F

In addition, collaboration within the EE is beneficial for the companies as they can utilize the experiences of other firms in their business, both negative and positive ones. In other words, they can learn from each other's mistakes and, on the other hand, to follow the example of successful firms. For instance, there can be some "big players" or leader firms, which can give motivation, aspiration, and support to other members of the EE. This is in line with previous literature emphasizing the importance of more established firms and their leadership in EE. Generally, the companies saw it very important to be able to share some of their best practices with the other ecosystem partners, for instance, technological knowledge.

"Startup relationships (are necessary); we help each other as we have the same kinds of questions and problems and think along in R&D and so forth. Internationally we have many relations to other startups and established big companies. They are vital for us." Company E

Overall, it can be said that an EE is a massive enabler for the high growth SMEs in the health-tech sector due to the significant collaboration possibilities. Some of the interviewees noted that without the ecosystem, they would not be able to grow at all, and some even said they would not exist without the ecosystem.

"We would not be here without our ecosystem, and no company would go anywhere without an ecosystem. You can start to produce something that nobody wants or understands if you are not networking with others." Company G

4.3 Networking opportunities

Closely related to the above aspects, networking opportunities are one of the critically important benefits of belonging to the EE. According to our data, EE provides firms with access to new partner relationships, i.e. the opportunity to meet their future partners and collaborators such as co-producers, distributors, sellers, and investors through different channels (e.g., meetings, trade fairs, seminars, and congresses). Ecosystem both offers opportunities for Finnish companies to go abroad and it invites the international delegates and foreign government representatives to Finland.

“The ecosystem helps us to approach a specific market easily. For example, in China, the governmental level is involved in doing business there. It is beneficial to have a delegation from the city to go there with the companies [...] and meet certain people. Vice versa, there is a delegation from China who came to the city. We can meet them here locally.” Company A

“Business Finland is arranging for the companies in our network, for example, international trips to China, Vietnam, South Korea, and more recently to the USA. We were able to identify our partner companies through these kinds of events. We have identified a lot of potential future partners and even prospective customers because of these events.” Company G

More specifically, firms in our study agreed that EE helps them to get acceptance in the local market by allowing them to connect with leading health-tech sector companies, hospitals, and doctors. It is essential to have contacts with the so-called key opinion leaders who can then open routes to new contacts in foreign markets. This kind of networking is highly necessary for health-tech SMEs.

“Other key players are, of course, the leading clinics and hospitals. So, every country has a prominent public or private clinic acting as a key opinion leader whose researchers’ and doctors’ decisions are based the way. We need their opinion to support our solution to get the local acceptance at the broader level.” Company H

4.4 Access to resources

Our data highlights the importance of EE in providing firms with resources and capabilities. As many of the companies are start-ups and newcomers in the market, they face numerous challenges, and one of the most important is the lack of needed resources. EE can provide firms with access to different resources, such as knowledge, technology, or finance. Information sharing between the parties is one form of getting access to the needed knowledge as the following quotation reveals:

“In the ecosystem, there is this kind of knowledge and technology base that helps to share knowledge and know-how [...] we can share some of our best practices with the other ecosystem partners. I think that it strengthens the ecosystem. To get something and sometimes you need also to give something back to the ecosystem and the other partners. It is a kind of two-way route”. Company I

Hospitals and health care centers are the main customers for SMEs operating in the health-tech business. Moreover, these institutions are helpful for the companies also from the resource perspective as they can help them to test and improve their products. Health-tech SMEs can also get references from the doctors who use their products to help them sell their products to diverse markets. Furthermore, other research institutions were mentioned as an essential source of resources, for example, in the form of R&D. Likewise, the importance of having access to talented labor and knowhow in the hospitals was highlighted in the interviews.

“The collaboration with the university hospital is very beneficial for us to get references. It is essential to collaborate with the university hospital, as it is where we test our products. We have a good collaboration as they are also our customers.” Company J

“In the early development phase, we were collaborating with the research institution quite extensively. We had a joint research project with a research institution and university. We utilized their resources as well as the facilities in our early start-up phase.” Company I

Finally, EE is also a source of financial resources for health-tech SMEs. For example, EE can help firms in the form of different funding and loan instruments. In addition, EE can bring investors to the district and aid firms in relating to these investors.

“The ecosystem is beneficial for us, as it provides an opportunity for us to find partners, such as technology partners and sometimes it also helps in the financing. For example, it helps by bringing investors to the city and getting us meeting with these investors.” Company A

4.5 References and credibility

EE plays an essential role in high growth health-tech SMEs in providing them with references and credibility. Many of the studied firms mentioned that the ecosystem gives them credibility that helps them in their internationalisation process. Besides, as they are operating in the health-tech sector, they need to get references from hospitals to pass the regulation assessment. For example, many firms mentioned Medical School as it could give them free test labs. This also aids in getting a more recognized position in the eyes of future customers.

“The critical element is to get references from the university hospital [...] through that, we will get name and acceptance. If the big-name says it is okay to use (our product) anywhere, then it will be good for us. Thus, we need the name to be able to be recognized.” Company F

4.6 The shortcomings of the ecosystem

Although the role of the EE was mostly seen as highly positive from the interviewed firms' perspective, some negative aspects were also mentioned. Some firms thought that the capacity of Finnish EE is not enough to support their internationalisation. Some companies said that the local ecosystem was beneficial at the beginning of their internationalisation process, but as they grew, the same ecosystem did not provide benefits as much. They think that to expand internationally they need to be involved with other international EEs in addition to the local ones.

“The Finnish ecosystem can help, but I feel to be genuinely fruitful out there globally, you need to go outside Finland. I do not think we have in this country enough knowledge about how to make a successful company from health-tech point of view internationally. The knowers and know-how are within so few hands in here. The advice this kind of ecosystem can give can be quite narrow. [...] You need a network somewhere else.” Company E

Conclusions

This study examined the role of entrepreneurial ecosystems in the high growth SMEs' internationalisation in the health-tech business. We found that EE plays various roles in enabling and supporting their internationalisation, but there are also some shortcomings making the EE less useful.

Overall, putting health-tech products and services into the market is complicated and expensive. It is especially challenging for small companies and start-ups because firms need e.g. proof of concept, references, and medical device as well as legitimacy in the eyes of potential customers abroad. This research suggests that the local entrepreneurial ecosystem can provide firms with various benefits and help to overcome the challenges. First, EE gives firms with *foreign market entry support*. For instance, this includes crucial knowledge about the potential new markets and access to the international ecosystems that can significantly facilitate the overseas market entry phase. Secondly, *diverse forms of collaboration within the ecosystem* is vital for EE participants. Interaction between the firms enables them to help each other in

various situations, get more visibility in the markets, utilize each other's experiences, and share the best practices within the EE. Thirdly, *networking opportunities* are one of the critically important aspects of belonging to the EE. This means for example, getting access to new business relationships through different channels such as trade fairs, seminars, and congresses. In addition, EE helps the firms to connect with leading health-tech sector companies, hospitals, and doctors who can then open routes to new contacts in the foreign markets. Fourthly, EE can provide firms with *access to different kinds of resources*, such as knowledge, technology, or finance. Finally, EE plays an essential role in high growth SMEs' internationalisation in providing them with *references and credibility* that are important in their internationalisation process. For instance, getting referrals from hospitals aids in passing the regulation assessments and in getting a more recognized position in the eyes of future customers.

This study has several theoretical contributions. Although EEs have recently received an increasing research interest, there is still quite a limited theoretical and empirical understanding of their various roles in the economy in general and in firms' internationalisation in particular. As the latest research shows, internationalisation has not been properly discussed (Mohammadparast Tabas, Komulainen, and Arslan, 2020) although this is often critically important for high growth ventures that are in the core of EEs. Furthermore, there is a call for empirical studies on EEs as well as a need to create a better understanding of EEs in diverse contexts and from different perspectives (Autio et al. 2014; Zahra, Wright, and Abdelgawad, 2014, Mohammadparast Tabas et al. 2020). This study contributes to the EE literature by providing new insights into EE's role in high-grow SMEs internationalisation, specifically in the health-tech business, which is a topic that has not been previously studied. However, other mainstream theories have discussed the different aspects related to firms' internationalisation, such as foreign direct investment theory (e.g. Morgan and Katsikeas, 1997), the Uppsala internationalisation model (e.g. Johanson and Wiedersheim-Paul, 1975), and the network approach to internationalisation (e.g. Johanson and Vahlne, 2003). We found that our study has some points in common with the previous studies, especially with those conducted within industrial network research. These are related to e.g. the importance of social relationships and collaboration between the companies (see e.g. Mainela, 2007; Komulainen et al. 2006), different aspects of foreign market entry phase (Coviello, Brodie and Munro, 1997; Zahra, and Nambisan, 2012) and gaining credibility (Lu and Beamish, 2001). In the EE the literature, however, there is no reference made, or connection acknowledged to the network literature, theoretically nor analytically (Alvedalen and Boschma, 2017). The findings of this study thus provide a novel understanding of EE's role in high growth SMEs internationalisation that highlights the specific features of EE.

This study also provides implications for the managers of high-growth SMEs on how to view internationalisation and how to utilize EEs more efficiently. One of the most important things is to strive for being an active member of the EE in which the company operates. This includes being aware of and getting to know the other firms in the EE and their direct and indirect connections. This aids in utilizing the different opportunities that can be provided by the EE, such as access to the right international contacts, visibility, and sharing of experiences and best practices. Closely related to this, knowledge sharing is a critically important aspect of EE. When there is a culture of open knowledge sharing within the EE, it is useful and valuable for all the companies; they can help each other in various ways and also get help when needed, for example, in R&D or gaining access to different resources. The findings of this study show that it is important that this is seen as a two-way street and that all the companies are willing to contribute to create a common good within the EE. Furthermore, managers need to attend to events actively (e.g. trade fairs and congresses enabled by EE), and keep their eyes open for various opportunities that may arise that can help them start or enhance the internationalisation

process. As this study demonstrates, the EE can aid many different ways in this if the managers are actively collaborating and interacting with each other. However, as a shortcoming related to EE, the managers of high growth SMEs need to understand that local EE might not be enough for them in the long run. They also need to aim for the other EEs (especially in the foreign markets) by utilizing the existing relationships in the local EE. Finally, it can be concluded that probably the most important thing is to take care of relationships, not only with customers and with prominent partners but also widely within the EE. After all, the relationships are the most valuable asset a company can have in their internationalisation.

As a limitation, the study was conducted in Finland, a technologically developed, small European country, so that the results could be different in different economies. In the future, the current understanding of the role of EEs in high-growth SMEs could complement quantitative data in various countries.

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