

HUOM! Tämä on alkuperäisen artikkelin rinnakkaistallenne. Rinnakkaistallenne saattaa erota alkuperäisestä sivutukseltaan ja painoasultaan.

PLEASE NOTE! This is an electronic self-archived version of the original article. This reprint may differ from the original in pagination and typographic detail.

Käytä viittauksessa alkuperäistä lähdettä:

Please cite the original version:

Kairikko, A. & Dhaliwal, S. (2021) Accelerator networks as embedding mechanisms for internationalizing start-ups: a study in the Finnish edtech context. In E. Laveren, C. Ben-Hafaïedh, A. Kurczewska, Y. Jiang (eds.) *Contextual Heterogeneity in Entrepreneurship Research*. Frontiers in European Entrepreneurship series. Edward Elgar.

This is a draft chapter. The final version is available in *Contextual Heterogeneity in Entrepreneurship Research* edited by E. Laveren, C. Ben-Hafaïedh, A. Kurczewska, Y. Jiang published in 2021, Edward Elgar Publishing Ltd
<https://doi.org/10.4337/9781802200201>

The material cannot be used for any other purpose without further permission of the publisher, and is for private use only.

**Accelerators as an Embedding Mechanism for Internationalizing Startups
– a Study in the Finnish Edtech Context**

Anette Kairikko
Westminster Business School
University of Westminster
Haaga-Helia UAS
anette.kairikko@haaga-helia.fi

Spinder Dhaliwal
Westminster Business School
University of Westminster

Date
October 1, 2019

Accelerators as an Embedding Mechanism for Internationalizing Startups – a Study in the Finnish Edtech Context

The purpose of this study is to extend knowledge on the role of accelerators as an embedding mechanism for internationalizing startups. Conceptually this study draws on the concept of embeddedness and on international opportunities. The case study was conducted within one spatial context i.e. an accelerator in the emerging Finnish edtech sector. The findings identify an accelerator may facilitate versatile local and international sector specific partner networks, which contribute to the development of international opportunities. An accelerator fosters international opportunity development through networks, resources and collaboration at various levels. The study contributes to the emerging academic literature on accelerators by explaining the role of an accelerator as an embedding mechanism during the parallel process of venture creation and international opportunity development.

Key words: international opportunity, embeddedness, accelerator, education technology, startup, case study

1. Introduction

This study focuses on the early internationalization of edtech ventures by explaining the mechanisms by which accelerators function as hubs, which leverage on firms' local embeddedness through the coordination of resources and coordination of startup teams within local and international networks. Conceptually this study draws on the concepts of network embeddedness and international opportunity development. The spatial context of the study is the Finnish edtech sector.

The choice of the context is justified with the following paradoxical setting. Many new ventures in export-dependent countries like Finland with limited size of the domestic market are keen to internationalize from inception. According to a research report (Lahtinen et al., 2016) 63% of Finnish startups founded in 2015 were aiming at international sales. The intention to internationalize applies also for the education technology (edtech) startups, which form the industrial context of this study. Edtech companies create solutions to enhance learning e.g. in the areas of game-based learning, augmented/virtual reality (AR/VR), socio-emotional learning, creative development and STEM (science, technology, engineering and mathematics). The edtech solutions need to have verified pedagogical impact in order to succeed. Finland, in turn, has been in a leading position in terms of the education e.g. according to the Pisa study (PISA, 2015) and in the Global competitive index related to the education and innovation (Schwab, 2016). Despite the small home markets leading to early intentions to internationalize and good quality of education leading to image advantages in the international markets, the amount of exports in the field of edtech have been modest. The majority of edtech companies are young and small ventures (Tekes, 2015), and form the scope of this study. This paradox serves as a starting point for the critical case i.e. the role of an accelerator as an embedding mechanism for internationalizing startups.

The concept of embeddedness is central (Granovetter, 1985; Uzzi, 1996) in understanding networks as interpersonal relations and larger social structures, which are socially and historically constructed. Johannisson et al. (2002) define embeddedness 'being anchored in a larger structure'. Considering the topic of this study the startups are anchored in an accelerator. As the

conceptualization of embeddedness suggests, entrepreneurs have interpersonal relations with each other and with actors in the network. The entrepreneurs belong to the larger social structure that has emerged over time and is constantly evolving.

This study is built on the assumption that the development of entrepreneurial and international opportunities is an interactive, dynamic and iterative process. Startups with international intentions explore international opportunities which may or may not lead to the exploitation of international opportunities operationalized as foreign market entry (e.g. Chandra, Styles, & Wilkinson, 2012). The startup internationalization differs from the internationalization of established ventures since especially in the new, young technology-based ventures innovations, early internationalization and international entrepreneurship are intertwined (Coviello & Tanev, 2017; Onetti et al., 2012). The processes of organizational emergence, product development and internationalization take place simultaneously in young technology ventures (Stayton & Mangematin, 2016). Based on these observations, the internationalization paths vary not only between large and small firms but also among small firms depending on the age of the venture. This study focuses on the internationalizing startups shortly after the inception stage.

This study cross-fertilizes knowledge from the international entrepreneurship and from the entrepreneurship and innovation literature. The characteristics of startup entrepreneurship are decisive for this study. The startups are not smaller versions of large companies (Blank, 2013) and instead of executing business plans they are still adjusting and iterating to develop a scalable business model. Startups are in the process of business model creation while starting to internationalize, yet, the impact of business model creation has received less attention in the internationalization research (Tanev, 2017).

Accelerators aim at supporting startups to scale their businesses and accelerators are a contemporary, growing phenomenon linked with entrepreneurial ecosystems. The prior research on accelerators and incubators and internationalization (Engelman, Carneiro zen, & Fracasso, 2015; Kabbara, 2016) shows the acceleration process has a positive impact on the internationalization. Yet, in-depth studies explaining the role accelerators in the internationalization process appear to be rare. Theoretically we aim to contribute to the discussion of embeddedness mechanisms in the internationalization of new ventures, which also has practical implications for several stakeholders fostering entrepreneurial activity.

2. Literature review

The literature review poses the question of an accelerator as an embedding mechanism for internationalizing startups. The review is organized as follows. Firstly, the knowledge on the role of accelerators for internationalizing startups is discussed. Secondly, international opportunity development is reviewed in terms of network embeddedness.

2.1 The role of accelerators for internationalizing startups

Accelerators are a relatively new mechanism to enhance the development of startups and despite the growing number of accelerators globally (European accelerator summit 2016), the number of academic studies on accelerators is still very limited including research combining the internationalization of startups and accelerators.

The studies on the evolution of the business incubation (Bruneel, Ratinho, Clarysse, & Groen, 2012; Mian, Lamine, & Fayolle, 2016) demonstrate that the accelerators have routes in the incubator phenomenon, which has been extensively studied since the 1980s (Hackett & Dilts, 2004). However, despite the similarities and overlapping use of terminology, incubators are

characterized by physical space and unlimited duration whereas accelerators are cohort-based with limited duration and clearly connected with the growth in the digital economy (Cohen & Hochberg, 2014; Hathaway, 2016; Isabelle, 2013; Miller & Bound, 2011; Pauwels, Clarysse, Wright, & Van Hove, 2016; Surlemont, Nlemvo, & Pirnay, 2002).

One of the definitions for accelerators is as follows:

“A fixed-term, cohort-based program, including mentorship and educational components that culminates in a public pitch event or demo-day” (Cohen & Hochberg, 2014, 4).

On the other hand accelerators are seen through their role as ecosystem builders, which emphasizes the network embeddedness and hence, challenges the narrow view of defining the accelerators mainly through the program cohorts. Drori & Wright (2018, 2) take the ecosystem perspective and define accelerators as follows:

“An accelerator is a generic organizational form that aims to stimulate entrepreneurship. It is structured to provide an intensive, limited-period educational program, including mentoring and networking for the cohort of startup participants selected for each program, to improve their ability to attract investment following the demo day at the end of program. Accelerators are organizations that serve as gatekeepers and validators of promising business innovations through their embeddedness in their respective ecosystems and thus, take an active and salient role in socio-economic and technological advancement.”

Several studies (Autio, Nambisan, Thomas, & Wright, 2018; Goswami, Mitchell, & Bhagavatula, 2018; Spigel, 2017) propose accelerators are match makers in the interaction between startups and the stakeholders in the entrepreneurial ecosystems. The accelerator is not only beneficial for the startup ventures but also for the wider community (Hathaway, 2016).

Considering the role of accelerators in internationalization, there are still shortages in knowledge. However, there is growing interest from international business academics in entrepreneurial ventures and likewise the entrepreneurship academics have shown increasing attention towards the internationalization of the market place (McDougall & Oviatt, 2000). Thus, studying accelerators from the perspective of internationalization is positioned at the intersection of these two fields.

Depending on the strategic focus, there are general and sector specific or focused accelerators (Pauwels et al., 2016). Becoming embedded in relevant networks through a sector specific accelerator means sector specific relationships. The concept of local embeddedness, in turn, in the internationalization refers to intra-industry linkages within the same sector through both formal and informal ways (Keeble, Lawson, Smith, Moore, & Wilkinson, 1998). Networks have several benefits for the internationalizing companies. Networks enable access to power, information, knowledge, capital, other networks, market access, financing, distribution channels, referrals, and contacts for further development (Elfring & Hulsink, 2003; Laperriere & Spence, 2015). Networks are not necessarily country specific (Hilmersson & Papaioannou, 2015), which influences the internationalization. Internationalization to a certain selected region may result from the embeddedness in a network which happens to have a certain geographical link. In the internationalization literature Johanson and Vahlne (2009) introduced the conceptual idea of turning ‘liability of outsidership’ to insidership i.e. the internationalization is a result of changing position from an outsider to an insider in the relevant networks. The country specificity is not as much the key but rather the attempt to improve the network position. We can argue a sector focused internationally networked accelerator is a

mechanism fostering the turn from the 'liability of outsidership' to an insider in relevant networks. Internationalization covers both inward and outward activities (Ruzzier, Hisrich, & Antoncic, 2006) and, for accelerators, it means the internationalization of the accelerator through incoming foreign startups or accelerators setting up foreign subsidiaries or branches.

2.2 The concept of network embeddedness and internationalization

The recognition of international opportunities is considered the starting point for the internationalization (Johanson & Vahlne, 2009; Schweizer, Vahlne, & Johanson, 2010) and similarly to the parent field of entrepreneurship, there is growing discussion on international opportunities in the international entrepreneurship (Blankenburg Holm, Johanson, & Kao, 2015; Chandra, Styles, & Wilkinson, 2009; Mainela, Puhakka, & Servais, 2014; Oyson & Whittaker, 2015).

A wide variety of empirical studies have demonstrated the importance of networks in internationalization. Previous studies argue networks accelerate the internationalization of small high-tech firms (Coviello & Munro, 1997) and small firms may overcome constraints to internationalize through relationships with larger firms (Etemad, Wright, & Dana, 2001). Furthermore, there are research results showing that resources are generated through networks (Coviello & Cox, 2006), internationalization and innovations take place through overlapping networks (Chetty & Stangl, 2010), internationalization behaviour is related to learning and maintaining networks (Amal & Rocha Freitag Filho, 2010), and networks trigger enactment of international opportunities (Nowiński & Rialp, 2016).

There are several perspectives to network studies: business, social and entrepreneurial networks (Slotte-Kock & Coviello, 2010). The business network studies are focusing on the transactions, whereas the stream of entrepreneurial network studies (Antoncic & Hoang, 2003; Lechner, Dowling, & Welp, 2006; Slotte-Kock & Coviello, 2010) have, in turn, stressed the social networks. Yet, the approach has spread to the internationalization studies as well (e.g. Vasilchenko & Morrish, 2011) demonstrating the closeness of the entrepreneurial and internationalization processes. The social networks acknowledge the role of the individuals and their social networks. The knowledge is socially embedded and acquiring information, knowledge, advice and resources happens through interpersonal and inter-organizational social networks creating social capital.

The existing studies show the importance of local embeddedness in internationalization. Andersson et al. (2013) summarize the local and international networks have a role in the internationalization, yet, the roles are different. The cluster characteristics influence the network and the local networks play a major role in the internationalization of born globals. Leppäaho et al. (2018) point out national differences in the type and role of network ties regarding universities, research institutes, sales channels and partners, financiers and customers. Boehe (2013), in turn, argues the local collaboration intensity is positively related with the export intensity and Keeble et al. (1998) argue internationalizing firms show above average levels of local networking i.e. internationalization and successful local embeddedness are linked with each other.

The embeddedness and venture creation have also been studied; illustrating the process of entrepreneurs embedding in systems (Jack & Anderson, 2002) and providing hypotheses for the mix of strong and weak ties in the key processes of the early venture growth (Elfring & Hulsink, 2003). Yet, studying the simultaneous process of venture creation and

internationalization through the embeddedness lens has received less attention in the existing studies.

Despite the fact embeddedness closely relates to the context (Welter, 2011), there seems to be a lack of contextual richness in the studies related to the role of embeddedness in internationalization. Most of the studies are case studies showing the dominance of case study method in the network studies of internationalization. One could argue, however, the very strength of case study method i.e. rich, holistic, contextual approach is under represented in the existing studies. The case studies have incorporated the contextual elements, yet, the case studies targeting for generalizable results, often strip the context in the findings and the context remains only at a level of describing the setting of the study.

It also seems the internationalization studies on network embeddedness are focusing on clusters, regional clusters and industrial associations whereas the entrepreneurial opportunity viewpoint and emerging entrepreneurial ecosystems are not emphasized. Thus, the perspective of nascent entrepreneurs in connection with internationalization is justified. Finally, it seems a number of studies regarding local embeddedness are conducted in large home markets, which forms a different research setting compared to small home markets.

Based on the literature review, we may conclude that the embeddedness in relevant networks enhances the international opportunity development by generating new networks and resources. The network embeddedness associated with the internationalization covers both the local embeddedness as well as international networks, which cover networks generated by both inward and outward activities. The accelerators are a mechanism to support startups to scale their businesses and they aim at expanding their networks; depending on the focus sector specific vs. general. Yet, there is limited understanding on the role of accelerators in the international opportunity development of startups.

3. Methodology

This study addresses the role of accelerators as an embedding mechanism during the early internationalization of startups. The edtech sector was chosen as the research setting. An in-depth, qualitative case study as research design was selected to examine the phenomenon holistically in the real-life context (Flyvbjerg, 2006). While in multiple case studies comparisons are completed *across* organizational contexts (e.g. Eisenhardt, 1989; Eisenhardt & Graebner, 2007), analysis in single cases are completed *within* the same organizational context (Dyer & Wilkins, 1991; Flyvbjerg, 2006; Gummesson, 2007). The latter strategy supports a study which deals with the connectedness of a number of actors and the context specificity complicates the process (Halinen & Törnroos, 2005). Considering the accelerators are hubs bringing together several types of actors, the choice of the single case study may be justified.

3.1 Data collection

The research site was an edtech accelerator in the Finnish context. Following the case study strategy (Piekkari, Welch, & Paavilainen, 2009), a variety of sources such as interviews, observations and documents were included. A detailed description of data collection through observations and interviews is below. The documents such as newsletters, social media posts, emails, feedback, industry reports and researches were used as additional sources of information.

Table 1: Summary of the interviews and observation data

	Observations	Interviews
Purpose	stay close-in to real life situations, naturally occurring data, feeding the interview discussions, holistic understanding of the research setting	all key groups relevant to the research and discovered during the observation period
Number and types of observation points / interviews during the time period	51 observation points February 2017-December 2018	46 interviews consisting of Accelerator management (5)*; network partners (11)**; startup entrepreneurs (30)*** April 2017-April 2018
Duration	one hour to one day	Average 51 minutes varying from 23 minutes to 85 minutes
Venue	Accelerator (46) exhibition centre (2) city hall (1) event forum in a shopping mall (1) old student house (1)	Accelerator premises (22), Skype (12), interviewee's office (7), public spaces (hotel lobby, café, restaurant) (4), interviewee's home (1)
Language	English and Finnish	Finnish (36) and English (10)
Documentation	notes and reflective diary describing, analysing, reflecting	recorded and transcribed verbatim

* Interviewees CEO, programme director, marketing manager, community manager and head of internationalization.

**Total number of partner network interviews is 11 (education/municipality: 2, internationalization: 2, investors: 3, mentors: 3, coaches: 2, corporate partner: 1); an interviewee identified as partner may represent several roles i.e. investor-mentor

*** Type of edtech solution (3D-Printing: 1, AR/VR: 4, Coding: 2, Creative development: 3, Creative development/game-based learning: 1, early childhood education/learning management: 2, evaluation: 1, game-based learning: 2, language learning: 1, language learning/AI: 1, learning and device management: 1, learning management: 4, life-long learning: 1, socio-emotional learning: 4, STEM: 2)

3.1.1 Interviews

The interviews were semi-structured. The outline consisted of main topics and issues, yet, the wording and sequence differentiated from interview to interview, which is in line with the basic idea of semi-structured interviews (Eriksson & Kovalainen, 2008). The questions were also slightly modified for different groups of informants. The main topics of the interviews relate to the edtech, international opportunities and accelerator.

The research design was emergent and followed theoretical sampling (Gibbert & Ruigrok, 2010) i.e. the data collection evolved during the field period and the researcher made decisions of subsequent interviews alongside the increasing understanding of the phenomenon.

The informants of the interviews represent different points of view (see table 1). The interviews with startup entrepreneurs covered ventures from four different accelerator cohorts (spring and autumn 2016 and 2017 cohorts I-IV). The startup entrepreneurs were interviewed 3-12 months after the program end and the timing of the interviews is justified by the fact that internationalization is planned to start after the program end in the acceleration process. All the startups chosen for the accelerator program have the intention to internationalize and thus, meet the criteria of the studied phenomenon. All the startups in the first four batches were contacted for an interview and 76 % of them were finally interviewed. Thus, the informants were not selected by outcome i.e. international market entry but any of the accelerated startups with

international intentions qualified for an interview, which is in line with the opportunity perspective. All the cohorts (I-IV) were equally represented in the interview material.

Regarding the accelerator, 100% of the people working for the accelerator during the period of interviews were interviewed. Regarding the partner networks, the observations and interviews highlighted key groups of partners, which were then included in the interview material. Two additional edtech startups, which are close to the accelerator activities but have not gone through the program, were interviewed as well.

3.1.2 Observations

The observations as naturally occurring data served as a complementary method to the interviews. The most intensive period of observations was at the beginning of field data collection stage. The observations as a source of data may vary from full immersion to an outside observer (Spradley, 2016).

In business research the former may take place through working for the organization or other intensive involvement (Eriksson & Kovalainen, 2008). Evered and Louis (1981) distinguish as the role of the researcher as either an actor (inquiry from inside) or as an onlooker (inquiry from outside). Yet, the role of the researcher is positioned in a continuum, where actor and onlooker represent the extreme ends. In this research, the researcher in the field was in some observation settings more at the actor end of the continuum and in some settings, more at the onlooker end of the continuum.

One of the researchers stayed full-time in the accelerator eight weeks in spring 2017 and conducted regular follow-up visits monthly in 2017-2018. During the stay and follow-up visits in the accelerator she had an opportunity not only to interview but also for several informal discussions and observations. In terms of the observations, the researcher was able to observe different types of events (more detailed list of observations, see table 2). Some of the observation points such as education fairs and events took also place outside the accelerator premises. The observations were unstructured, a structured observation form would have set the boundaries for making observations. As Spradley (2016) argues the observations are at the beginning descriptive and during the project they become more focused and finally selective. During the observations the researcher took notes and wrote reflective summaries, which allowed her to make her own interpretations. The findings based on the observations were also feeding the formal interviews.

Table 2: Type of observed activities and the purpose of observations

Type of activities observed Description of the type of event and the purpose for the research	Purpose	Number of observation points*
Accelerator trainings: Accelerator program contains several modules of training. The researcher followed the module lean launch pad and pedagogical workshops during the cohort III.	Insights in terms of the program contents, startups, solutions and dynamics in the cohorts.	6
Pitching events: Startup cohorts pitch during the different stages of the program for key stakeholder groups, the researcher followed cohort III and IV program pitches.	Insights regarding the startups, solutions and reactions from the stakeholders.	3
International delegates visiting accelerator: Accelerator receives visits regularly and the researcher participated in four visits as an observer.	Insights regarding the visitor groups and the role of accelerator in hosting the groups. Insights to the early internationalization and networks related to it.	4
Informal discussions, accelerator as a working space conducting interviews: During the field work the researcher worked on the research in the open office and spent time as a member of the community.	Enabled the researcher to have several daily informal discussions to gain in-depth understanding of the structures and actors in the accelerator environment and observe the activities. Background for interviews.	18
Social events: The researcher joined the summer party and one weekly gathering of the startups. The social events provide a platform for informal networking and building team dynamics.	Insights to edtech startup community and interactions in it. A chance for informal discussions.	2
Education fairs: The education fairs are important events for edtech startups to meet teachers and school principals. These events serve startups the opportunity for match-making with co-creation partners and potential customers. The researcher joined two of these events.	Insights to activities with one key stakeholder group.	2
Startup event Slush and edtech track: Slush is initially a Finnish startup event which is now spreading globally (Tokyo, Singapore, Shanghai). The edtech accelerator has initiated a side event xcited to which takes place parallel to the main event and gathers together the edtech startups, influencers and investors.	The holistic understanding of the edtech scene and meeting startups and network partners.	2
Visitor group from local higher education institution: The local university of applied sciences brought their staff form one campus to a development day to the accelerator. The researcher presented her preliminary research findings for the audience. Three startups were pitching and there were workshops for UAS lecturers to become acquainted with the solutions.	Insights to interactions with accelerator, startups and educational institution.	1
Follow-up visits to conduct interviews in the accelerator premises or meetings with accelerator staff: After the intensive field work period the researcher returned to the accelerator premises to conduct interviews and/or meet accelerator management.	To up-date the latest news in the development of accelerator and startups.	13
Total number of observation points		51

*an observation point means in this context an event lasting min one hour and max one day

3.2 Analysis

The approach in this research is abductive and inspired by e.g. Dubois and Gadde (2002) and Dubois and Gibbert (2010) who emphasize that redirections are expected to occur when the theoretical knowledge is confronted with the empirical world. Thus, there was a constant interplay between the emerging case, theoretical framework and empirical data. Regarding the role of the context, which is central in studying embeddedness, this study refers to contextualized explanation (Welch, Piekkari, Plakoyiannaki, & Paavilainen-Mäntymäki, 2011), in terms of theorizing from the case study. Contextualized explanation aims at treating context analytically instead of descriptively. The contextualized explanation does not aim to law-like generalizations, on the contrary, it takes into account the contingency of cause-effect relationships.

The method of analysis is constant comparative method (e.g. Boeije, 2002; Timmermans & Tavory, 2012), which has been used in prior studies regarding entrepreneurial networks (Jack, Anderson, Drakopoulou Dodd, & Moulton, 2015). The analysis started while the data collection was taking place.

The interviews were transcribed verbatim by one of the researchers and summarizing memos and tables of interview insights were created already during the transcription. The insights from this phase influenced the subsequent interviews and emerging codes. NVivo software was used to support the research by storing, managing, organizing as well as coding the case data.

The units of analysis were the startups that had participated in the accelerator program. First, the relevant actors in the networks were identified. Studying embeddedness requires a thorough understanding of the context, which was gained through analysing secondary data and deepened through the interviews, documents and observations. During the interviews it turned out that interviewing only startups and accelerator management would not be sufficient to have a holistic understanding of the accelerator networks and therefore, the researcher started interviews with the partner network members but also continued with later cohorts of the accelerator and the accelerator managers.

The coding was completed in several rounds, the initial codes were based on the interview topics derived from the literature, secondly the codes were created inductively from the data and thirdly, in line with the abductive theorizing, the process of analytical coding was run iteratively and in a constant dialogue with the literature and the emerging codes and categories were reviewed and refined. In addition, summarizing tables and charts were created throughout the analysis.

4. Case study and findings

This section discusses the findings of the case i.e. an edtech accelerator as an embedding mechanism for internationalizing startups. First, this study identifies relevant networks in the context of Finnish edtech accelerator. Secondly, this study discusses mechanisms by which startups develop international opportunities. The discussion starts with a brief description of the case setting.

4.1 The research setting of a case study: an edtech accelerator

In line with the global trends, in Finland there is an increasing number of accelerators and other types of venture growth supporting systems. A mapping of Finnish startup support services was provided as part of broader report on Finnish startup companies (Lahtinen et al., 2016). The mapping identified 116 different startup support programmes or services, most of them established after 2010. Of the 116 programmes, 27 were categorised as startup hubs or communities, 26 as pre-incubators or entrepreneurship programmes, 26 as incubators or pre-accelerator, 17 as co-working spaces, and 20 as venture accelerators. Depending on the definition, however, a recent report (Business Finland, 2018) identifies only three accelerators in Finland that match all the five criteria for accelerators referring to the definition by Miller & Bound (2011). The research site is one of the three accelerators.

The research site is an accelerator, which was established 2015 in Helsinki and the first cohort started spring 2016. As an edtech accelerator, the accelerator focuses on one sector, which is according to European Accelerator Summit (2016) case for the majority of accelerators (62%). The accelerator is located next to the faculty of educational sciences of the University of Helsinki. The accelerator in this study is similarly a startup going through iterative development with limited resources like the startups in the accelerator. Therefore, the startups and accelerators share the mind set and strengths of being agile and flexible and challenges of limited resources.

Table 3: Key figures of the accelerator after first six cohorts

Number of programs	6
Number of accelerated startups	56
Applicants for six first cohorts	600 +
Applicants from different countries	69
Startups still active	96 %
Number of countries (startups)	11
Education partners	100 +
Female founders	46%

The accelerator selects startups with minimum viable products and the startups qualified to the program are evaluated based on their ability to communicate pedagogical impact of their product/solution.

”to describe, what is the educational aspect in that product and startup, only those who can explain it can be qualified to the program”

accelerator manager

The selection criteria includes that the team must be targeting to the international markets. All the informants in the startup ventures also clearly indicated either intentions to become or that they had already become international. However, they do differ in terms of their development stage. Based on several conceptualizations (e.g. Chandra et al., 2012; Oyson & Whittaker, 2015), the international opportunity development is conceptualized as a process from exploration to exploitation and the exploitation is defined as foreign market entry. 54 % of the interviewed startups were exploring the first international opportunity during the time of the interview and 46% had exploited their first international opportunity(ies).

Regarding a typical profile of the entrepreneurs, this study challenges some prior studies (e.g. Kabbara, 2016) proposing that digital entrepreneurs are on average young i.e. under 30 years. On the contrary, the accelerator of this study has hosted many startups where the entrepreneurs have had prior ventures and/or senior level experience. In the context of edtech, this study shows different profiles of participating entrepreneurial teams in terms of age and experience. The needs for the accelerator training vary but the diverse group of entrepreneurs share and learn from each other's backgrounds.

The entrepreneurs may be allocated into two broader groups. Firstly, a group of entrepreneurs have business or technology background and have come to the accelerator to strengthen their pedagogical knowledge and networks or to increase their confidence and credibility in offering a solution which enhances learning. Secondly, another group of startups, have a background in education and/or cultural background like music, films and alike. For them the accelerator was mainly for shaping their business model and developing their skills and contacts to run a business. Thus, depending on the background of the founders and founding teams, the expectations towards the accelerator contacts and program are different. In order to have pedagogical impact and to create a service or concept, which is balanced, edtech and learning solutions require understanding of business, technology and pedagogy.

"You need to have understanding of business, technology and pedagogy and then understanding how to create a concept, a service that is balanced."

corporate partner

Regarding the team compositions, the study shows the teams are in that respect internationally oriented and purely Finnish teams are in minority. The teams have either international team of founders, or hired international talent, or at least utilized international human resources in their value chain activities. The teams have identified that the internationalization requires international mind set from the beginning.

"English has been our company language from the beginning because our product manager is Chinese and one of the developers is non-Finnish."

startup entrepreneur

The number of non-Finnish applicants and participating startups showed steady growth during the studied cohorts. The accelerator had participating companies from eleven countries during the first six batches. The number of international applicants has been growing in selection processes for each batch during the first six cohorts. The composition of international cohorts creates dynamic international interaction, which in turn, leads to international opportunities. The process of accelerator internationalization takes place simultaneously with the internationalization of individual startups. The foreign participants have been mostly interested in a Finnish accelerator due to the educational reputation, the Finnish curriculum and contacts e.g. with the research institutes.

“The other part of it was the pedagogy side of things the reputation of Finnish education and the progressiveness of it and Helsinki in particular and working alongside the university there that was a very attractive thing for us. “

non-Finnish startup entrepreneur

It is noteworthy that after the first three years of existence, 96 % of the accelerated startups are still active despite the overall high failure rate of startups. As a comparison it has been reported that in the Finnish context 80% of startups survive the first three years and 70% the first five years (Lahtinen et al., 2016).

4.2 Networks facilitated by an accelerator

In order to analyse the embeddedness in accelerator facilitated networks, the relevant networks were first identified. The table below lists the network actors and the contextual findings in terms of their relations to the startup firms. This study focuses on one sector in one country and therefore, it generates deep contextual knowledge of the actors of the accelerator network in one specific context. The following groups were identified to be significant for the edtech accelerator: *peers, public sector co-creation partners, international partners, mentors, investors and corporate partners*. When contrasted with prior accelerator studies, (e.g. Vandeweghe & Fu, 2018), this study identifies the importance of co-creation and internationalization partners, which have received less attention in the accelerator literature. Despite the importance of internationalization, few accelerators offer services in internationalization (Isabelle, 2013). All the startups in this study expect the accelerator to boost their internationalization. Thus, it is unexpected that the internationalization has not received more attention in the accelerator landscape.

Table 4: Identified networks and contextual characteristics of edtech sector

Level of analysis	Networks facilitated by the accelerator	Context specific findings	Evidence from the quotes
Focal firm (edtech startup) - network actor	Peers	Experienced and mature, background in technology and/or business, pedagogy or artistic/cultural field. Differing stages of development. Expectations towards a tailor made program. The peers as sources for mental support, practical help and contacts for further networks are pivotal. Among the startups a couple of active startups are named by other startups independently from the cohort they represent i.e. they are not only named by the cohort peers. The frequently mentioned startups seem to be have the reputation of sharing and being open and helpful to others. They were also startups that were considered success stories by the accelerator management.	<i>"like it is role modelling to some extent I felt like I was able to look other companies so.. so and have different aspects of what they did that I could look up to and yeah because they are your peer group it still feels accessible "</i> startup entrepreneur
	Public sector partners for co-creation and early customer references	Private-public collaboration has an impact on all startups not just accelerated ones, accelerator acted as a trigger to overcome the obstacle to internationalize i.e. lack of customer references. Co-creation opportunities are appreciated by the startups.	<i>"There used to be the situation with the exports of education that the potential foreign customers asked the edtech companies that how is the feedback from Finnish teachers and so on... and earlier startups couldn't co-create since there was a high barrier for public-private collaboration."</i> accelerator manager
	International partners	Network of similar foreign organizations and partner organizations. Relations to several beachheads internationally as they call them. The first Finnish accelerator in the Global accelerator network. Incoming international delegations of school teachers and principals due to the Finnish reputation in education and closeness of the University of Helsinki.	<i>"for us the main thing was the US market and they had contacts there"</i> startup entrepreneur
	Mentors	Differing experiences among startups, not as widely mentioned significant as in the accelerator literature. The specific feature: examples of revise order in the activities: from mentor to startup founder. For some startups mentoring was significant in terms of internationalization. Some of the startups did not miss the mentoring, some of them found it was poorly coordinated and the mentors were too busy.	<i>"I started working as mentor in the first batch then I got I was already with one foot always there"</i> startup entrepreneur <i>"The most valuable part of coaching and mentoring was everything related to the internationalization."</i> startup entrepreneur
	Investors	The investments in edtech are characterised by long-term investments and social impact. The emergence of an alternative investment fund with focus on education during the 5 th batch.	<i>The objective is to attract investors, convince them to invest in education and further develop ecosystem."</i> accelerator manager
	Corporate partners	Necessary for the accelerator business model. Some startups have also had closer collaboration. The type of the network partner that shows least in the interviews of the startups.	<i>"The corporate partners are the life and blood of the company."</i> coach/mentor/investor

4.3 International opportunity development through the embeddedness in accelerator networks

After having identified the key networks and analysed them through the contextual lens and in terms of international opportunity development, the impact of network embeddedness was analysed. Three themes emerged: networks, resources and collaboration, which will be discussed in detail next.

Table 5: International opportunity development through the embeddedness in accelerator networks

International opportunity development through the embeddedness in accelerator networks	Networks facilitated by the accelerator (roles partly overlapping)					
	Peers	Co-creation partners (private-public partners)	Internationalization partners	Mentors	Investors	Corporate partners
Networks	Accelerator as a sector specific eco-system builder, development of international opportunities for startups through the embeddedness in relevant sector specific networks. Accelerator had identified the bottle necks in terms of networks i.e. lack of public sector partnerships to enable first reference customers. In addition to the public sector partnerships, a network of international partners to enhance the early internationalization. Peers, mentors and investors, which are widely mentioned in the accelerator literature, have context specific characters related to the features of educational sector.					
Resources	Human, social and material resources through the network partners. Material resources like investments or an opportunity to stay in the building. Human resources like further recruitments. Social resources like contacts to key stakeholders. Accelerator as a gate to external validation pedagogically and acquiring certificates, which, in turn, foster international opportunities through the increased credibility in the field.					
Collaboration	Heterogeneous composition of cohorts, the role of the accelerator in activating collaboration and co-creation among peers, which leads to the development of opportunities. The accelerator was a trigger to establish systematic collaboration between schools and startups to co-create, which, in turn, fosters international opportunity development. Private-public collaboration has an impact on all startups in the region, not just accelerated ones.					

4.3.1 Networks

The findings of the study indicate the startups in the accelerator become embedded in different types of networks including peer startups in same and other cohorts and partner networks, which were discussed in the previous section. From the accelerator's point of view, success stories are needed to give confidence and to develop role models for new startups and for the growing ecosystem. The accelerator approaches the networks from a system point of view. The aim is to build up a strong ecosystem in the Finnish edtech. The network benefits are reported particularly through the sector specificity. The accelerator literature also shows the tendency is towards the sector specific accelerators (Isabelle, 2013; Mian et al., 2016).

“The value for the accelerator comes through the industry specificity...in another accelerator we just said ‘hello’ to the other startups there was no point for looking for synergies..here we are at the heart of the Finnish edtech ecosystem.”

startup entrepreneur

“The good thing is it is focused, focused on education. That is how deep knowledge emerges.”

corporate partner

This study demonstrates the value of networks is especially through the focus on edtech sector. The findings show the sector specificity of the accelerator seems to have a significant impact on the networks. The revisited Uppsala Model (Johanson and Vahlne 2009) and further adjusted version for the entrepreneurial internationalization by Schweizer et al. (2010) stress the network position in the internationalization. The internationalization results from the change in the network position from an outsider to an insider. Based on the findings from this research, becoming an insider in the relevant networks fosters development towards internationalization. Therefore, the networks are the key instead of certain geographical locations. The current study suggests the accelerator may have a role in this transition from an outsider to an insider. In this particular context it also refers to the insider position and credibility in the education.

The networks facilitated by the accelerator have played a significant role in the early internationalization of some of the startups.

“One concrete example was the connection Hong Kong, it wouldn’t have happened without the accelerator.”

startup entrepreneur

“It progressed [internationalization]. Our targets were New York and California and they happened to be the same where the accelerator as contacts. In both places are similar types of accelerators and events like Shush and then the accelerator management had the contacts.

startup entrepreneur

However, there were also contrasting views in terms of help with regards to internationalization.

“Not for us. Certainly some companies have received support like ...I guess they select the companies, in which they put all the effort...”

startup entrepreneur

This study also shows the importance of the prior networks. The individual entrepreneurs influence the context i.e. the Finnish edtech sector as does the context influence the entrepreneurs.

“Well, it is definitely never going to be easy but it is of course a huge resource for us that we have over 15 000 schools in register and all the contracts with them completed and we have lots of teacher fans, who recognize our brand.”

startup entrepreneur

“Our chairman of the board has a very international network and it is surprising what kind of leads you get through LinkedIn.....in a way people are really ready to help and network these days.”

startup entrepreneur

To sum up, a sector specific accelerator may increase the network embeddedness in relevant networks and thus, the change in the network position of a startup leads to international opportunities and further to internationalization. As a result of active peer support, prior

contacts of the peer startups may turn to new networks for those startups, which are lacking prior contacts.

4.3.2 Resources

The networks enable the startups to achieve new resources – both tangible and intangible – and new networks. The selection and participation in an accelerator may foster the credibility of the startups in various ways. The selection to the program itself works as a positive reference. The ratio of accepted startups/applications is less than 10 % per each cohort. The acceptance to the program is a favourable reference e.g. in the further negotiations for funding.

"As a result eight investors were interested and now we start negotiations."

startup entrepreneur

"It played a role in the further investment round, it was a status thing to get accepted."

startup entrepreneur

In the context of education, validating the product with certificates by externals may become a key issue in order to access new markets or receive further funding. A certificate showing the product has been co-created with the Finnish schools is increasing the international credibility of the companies.

"We developed this co-created with the city of Espoo quality stamp which is available for who have finished the process according to the systemized approach."

representative from the municipality

The startups in this study have in common the wish for international contacts and investments. From the accelerator point of view, the heterogeneous composition of the cohorts is a conscious decision to enhance learning based on different backgrounds. Regarding the accelerator program, the expectations vary depending on the background of the entrepreneurs. The accelerator stresses holistically the importance of building an ecosystem, whereas the startups have expectations for personalized support through the program.

"..that we are already quite advanced in our internationalization.. that we were further than many others and therefore, we would have wished for more individual support and check where we are and for example what we had thought were the negotiations with xx if we could have gone through them within the program but perhaps there was no space for it. But there could have been more focus on where we are now and what we need."

startup entrepreneur

Even though the physical location is not stressed as a characteristic for accelerators, the accelerator of this study offers in-house offices for a number of startups and those utilizing that service seemed to form a tighter community. This research shows the physical location also plays a key role. The startups that have stayed in the premises emphasize the role of peer support much more but are also mentioned by the later cohorts as active and helpful companies.

4.3.3 Collaboration

A strong peer community provides a basis for potential collaboration in foreign markets. The peer support and the community seem to be key benefits even for those startups that felt otherwise they did not benefit that much from being part of the accelerator program.

Collaboration among peers is based on sharing experiences and giving mutual feedback. The successes of other startups give confidence for all the startups in the ecosystem. The startups collaborate and support each other by recommending new team members and employees may transfer from one startup to another. In addition to the human resources, startups listed versatile forms of support like introducing leads, inviting other startups to co-creation/test events, sub-contracting, offering physical premises and investments. The startups named examples of ideation at the product and technical level, yet, the lack of resources and the fact that all are small and at the beginning of their path is an obstacle. A typical example of collaborative commercial efforts is to share a booth in an exhibition. Yet, the viewpoints vary in terms of the perception of startup collaboration as following quotes demonstrate.

"This is a remarkable community like you always find those links so there is no need for cold calls here and there but usually you always have somebody who says I will introduce you to that person and it helps further"

startup entrepreneur

"I am little tired with this statement the companies should go together...if you know your customers where to sell I find this net... net... that you hear nowadays all the time, it is not necessary."

startup entrepreneur

"I think the weakness is that everybody starts [internationalization] as a small small company or small small project"

startup entrepreneur

In summary, the findings from the peer support part is that the strong peer community provides a basis for the potential collaboration activities in the foreign markets. It may take several forms due to the versatile backgrounds of the entrepreneurs. As a result, the heterogeneous cohorts learn from each other through sharing. Peer support may happen in an unstructured way, yet, it may be fostered by the accelerator as a facilitator or it may be initiated e.g. by an investor.

"Those who do not know how to collaborate simply fall out."

investor

From the accelerator's point of view the peer support plays a role in the ecosystem building. The accelerator facilitates peer support. The selected combination of companies in the batches plays a major role, the targeted activities to create team spirit within a cohort and activate alumni. The international startups bring their viewpoints and the international community supports the internationalization. The accumulated knowledge stays in the ecosystem if the startups know each other well. The accelerator has acknowledged the importance of activities which enhance the common team spirit among the companies in the same batch and in the second batch more focus was already targeted towards the team building activities i.e. in a form of common get-together-evenings at the beginning of the batch.

"Not all of them will succeed but if they know each other as a group and after some startups have finished the knowledge stays in the industry they may transfer to other startups."

accelerator manager

Furthermore, regarding the collaboration the findings of this study suggest that in the edtech context enabling startups to co-create and test with schools and educational institutions is a key for any company heading for international markets.

"The great thing about the product when I first saw it was that it was truly co-creative product I mean she spent a lot of time talking to kids and they did research with kids it is it was kids' influence to have certain characters ..all these thing made kids more linked to the product."

internationalization partner

The systemized collaboration with schools shows strongly at both levels: accelerator-partner and startup-partner. Having identified the lack of co-creation opportunities, the accelerator acted as an intermediary to enable small, young ventures to have access to large organizations in the public sector, which are the important first reference customers. The accelerator was a trigger to systemize the way of collaboration and co-creation activities with some municipalities and educational institutions. The benefits of the collaboration are not limited to the accelerated startups. The collaboration and co-creation in home markets have benefitted startups in the foreign markets. From the partner's point of view, the city of Espoo, the second largest city in Finland, had also identified the increasing need for schools to be more integrated in the surrounding environment and had noticed there was an increasing demand for companies to enter schools for co-creation and testing their products. Yet, the lack of rules and principles of how to collaborate at public-private interface, was hindering the collaboration. The accelerator was a trigger that made the city of Espoo to consider the process model and a project called KYKY was established. The startups that participate in the KYKY process receive a reference for the foreign markets.

From the schools' point of view the co-creation and testing enhance the digital transformation at schools while teachers and students are having access to the latest innovations. From the municipality's point of view, the accelerator took the initiative and speeded up the process of creating a systematic approach to the collaboration between schools and startups and once completed, the systematic approach benefits the whole entrepreneurial ecosystem of Finnish edtech companies, not only the accelerator startups.

4.3.4 Accelerator as an embedding mechanism for internationalizing edtech startups in the Finnish context

The empirical findings and the case discussed above are positioned in the table below which results from the dialogue between the theoretical framework, case and empirical findings. One dimension is the spatial dimension of network relationships, and the other one refers to the international opportunity development. The network relationships are further divided according to the location (international vs. local). In the case of a sector specific accelerator, both local and international networks refer to industry specific networks. This study shows a sector specific accelerator is an enabler in the process of becoming embedded in relevant networks locally and internationally. The accelerators support startups to scale their businesses and they enable startups to expand their networks, acquire resources and find collaboration opportunities. The collaboration shows between startups and between startups and partners.

Table 6: Accelerator as an embedding mechanism for internationalizing edtech startups in the Finnish context

		Network embeddedness in IO development (<i>how?</i>)		
		Networks	Resources	Collaboration
Network relationships facilitated by an accelerator (spatial dimension)	Local	Local networks Cohort peers and alumni Corporate partners Mentors Investors Co-creation partners	Local resources Opportunity to stay in the building Recruitments Corporate partner Sponsoring Local investments Key contacts through mentors	Local collaboration Co-creation with the local educational institutions to develop products and acquire the quality label for international credibility Collaboration among peers
	International	International networks International cohort peers International partner organizations International visiting groups and individuals	International resources International recruitments International suppliers International investments Contacts to key players in terms of international market entry	International collaboration Peer collaboration International pilot projects

5. Discussion

There are several important implications, some of them are theoretical and some of them are practical. Firstly, this study illuminates the process of becoming embedded through a detailed single case study. Thus, it extends knowledge on the process of becoming embedded in the parallel process of venture creation and early internationalization. The outcome of the study is two-dimensional typology based on the theoretical concepts of network embeddedness and international opportunities to highlight the role of accelerators for internationalizing startups. The topic combines accelerators and internationalization, which is under researched, and this research contributes to the emerging discussion.

More generally, this research adds to the discussion of the parallel process of venture creation and internationalization (Stayton & Mangematin, 2016). The findings show the parallel process of internationalization and venture creation and how the relevant networks in both processes are interrelated. For instance, some of the identified key players like public sector partners with whom products are co-created relate to both to the venture formation (co-creating products) and to internationalization (first customer references for credibility abroad). Thus, this study explicitly addresses the newness of the ventures, which has not always been the focus in the studies revolving around international new ventures (Coviello & Tanev, 2017). This choice was methodologically supported by collecting real time data instead of retrospective data.

Furthermore, this study also contributes to the academic studies related to accelerators. Kabbara (2016) identified variables influencing the internationalization of the web based startups in the

accelerator context. The model refers to the startup related factors and accelerator related factors. This study, however, identifies and analyses actors and mechanisms through which startups identify and develop international opportunities. This study stresses collaboration in addition to the resources and networks, which are broadly discussed in the literature of networks and international opportunities. Collaboration takes place between startups, startups and partners/accelerator as well accelerator and partners and all levels where present in the case study findings.

Finally, this research strongly supports the idea that the role of an accelerator is an intermediary between the startups and partner network (Goswami et al., 2018) or an ecosystem creator (Drori & Wright, 2018). The ecosystem viewpoint to accelerators stresses the positive impact on the non-accelerated startups as well. The findings from this study show evidence for this, e.g. through systemizing the co-creation to acquire first reference customer at the public-private interface. The study, thus, aligns with views of recent research that the systemic level of international opportunities is important in addition to the venture level (Mainela, Puhakka, & Sipola, 2018). To sum up, a sector specific accelerator may increase the network embeddedness in relevant network and thus, the change in the position from an outsider to an insider leads to international opportunities and further to internationalization (Johanson & Vahlne, 2009; Schweizer et al., 2010).

In terms of the practical implications the accelerator managers benefit from the findings when designing and implementing accelerator programmes, supporting alumni communities and further developing partner networks of accelerators. The collaboration as an attitude 'sharing is caring' i.e. willingness and openness to support each other and a connected community do not simply emerge. Enhancing collaboration requires explicit efforts by the accelerator. This study suggests to have the internationalization on the agenda of the accelerators and consider developing partner networks accordingly. Yet, as this study shows, the international partners alone are not enough. The key for the internationalization was to remove the domestic obstacle of first reference customers. Furthermore, the internationalization also refers to the internationalization of the accelerator, which is linked with the emerging startup internationalization.

Besides, startups and entrepreneurs with intentions to the global markets may benefit from the results when considering the choice of a suitable accelerator e.g. in terms of choices between general and sector specific accelerators. The value of accelerator is not limited to the program but the opportunities emerge through the networks, resources and collaboration beyond the accelerator period. The accelerator literature shows the tendency is towards the sector specific accelerators (Mian et al., 2016). According to the findings of this study a sector specific accelerator seems to have benefits for the startups to become embedded in the relevant networks, which foster the early internationalization.

Based on this study and the insights around the parallel process of venture creation and internationalization, this study suggests the policies targeted towards early stage venture support should more strongly be integrated with the support for internationalization.

Finally, the single case study may be considered a limitation or an asset. Nevertheless, it provides rich in-depth insights on the emerging internationalization of startups in an emerging sector. The findings may be transferable to other industrial and country contexts. Regarding further research, we suggest a comparative study at country level or between different industry sectors to highlight, whether the findings of this in-depth study in one geographical and industrial context are applicable for accelerators in other contexts. Moreover, it would be of interest to focus on the accelerator as a unit of analysis or on relationships among startups and peers or startups and partners. Studying relationship development over time would also provide

valuable insights and correspond to the process nature of internationalization and entrepreneurship.

6. Conclusions

This paper attempts to explain the role of an accelerator as an embedding mechanism for internationalizing edtech startups in the Finnish context. Theoretically the results are based on the concepts of network embeddedness and international opportunity development. Combining the dimensions of network relationships and network embeddedness in international opportunity development generates categories (local/international networks, resources and collaboration) that illustrate the role of an accelerator in the international opportunity development of startups. The results show the network of local and international partners is essential in the international opportunity development and in the context of this study the accelerator enables the startups to enter relevant sector specific networks, which, in turn, may foster the internationalization.

Secondly, the findings of the study discuss, how startups develop international opportunities through networks, resources and collaboration. Startups have limited resources and parallel to the early internationalization they are still iterating the product, business model and creating organization. Therefore, access to further resources and co-creation and collaboration opportunities locally enhance the early internationalization.

Finally, the findings highlight the role of accelerators in the early internationalization of startups. The findings of the study show that the profile and role of an accelerator may be substantially more versatile than offering tools for business development, mentoring and potential contacts with investors. The findings of this study also highlight the importance of co-creation partners and removing obstacles at private-public interface, the efforts to build up partner networks for internationalization and the active role of the accelerator to enhance the peer-to-peer support and collaboration. The accelerator enables startups to create local and international network relationships that may contribute to new networks, resources and collaboration in the interactive, dynamic and iterative process of international opportunity development. Even though not all startups succeed or are able to exploit international opportunities, the whole sector benefits from the efforts of the accelerator.

References

- Amal, M., & Rocha Freitag Filho, A. (2010). Internationalization of small- and medium-sized enterprises: A multi case study. *European Business Review*, 22(6), 608-623. doi:10.1108/09555341011082916
- Andersson, S., Evers, N., & Griot, C. (2013). Local and international networks in small firm internationalization: Cases from the rhône-alpes medical technology regional cluster. *Entrepreneurship & Regional Development*, 25(9-10), 867-888.
- Antonic, B., & Hoang, H. (2003). Network-based research in entrepreneurship: A critical review. *Journal of Business Venturing*, 18(2), 165-187. doi:10.1016/S0883-9026(02)00081-2
- Autio, E., Nambisan, S., Thomas, L. D., & Wright, M. (2018). Digital affordances, spatial affordances, and the genesis of entrepreneurial ecosystems. *Strategic Entrepreneurship Journal*, 12(1), 72-95.
- Blank, S. (2013). Why the lean start-up changes everything. *Harvard Business Review*, 91(5), 63-72.

- Blankenburg Holm, D., Johanson, M., & Kao, P. (2015). From outsider to insider: Opportunity development in foreign market networks. *Journal of International Entrepreneurship*, 13(3), 337-359. doi:10.1007/s10843-015-0154-8
- Boehe, D. (2013). Collaborate at home to win abroad: How does access to local network resources influence export behavior? *Journal of Small Business Management*, 51(2), 167-182.
- Boeije, H. (2002). A purposeful approach to the constant comparative method in the analysis of qualitative interviews. *Quality and Quantity*, 36(4), 391-409.
- Bruneel, J., Ratinho, T., Clarysse, B., & Groen, A. J. (2012). The evolution of business incubators: Comparing demand and supply of business incubation services across different incubator generations. *Technovation*, 32(2), 110-121. doi:10.1016/j.technovation.2011.11.003
- Business Finland. (2018). Startups, accelerators and role of TEKES
- Chandra, Y., Styles, C., & Wilkinson, I. (2009). The recognition of first time international entrepreneurial opportunities: Evidence from firms in knowledge-based industries. *International Marketing Review*, 26(1), 30-61.
- Chandra, Y., Styles, C., & Wilkinson, I. F. (2012). An opportunity-based view of rapid internationalization. *Journal of International Marketing*, 20(1), 74-102.
- Chetty, S. K., & Stangl, L. M. (2010). Internationalization and innovation in a network relationship context. *European Journal of Marketing*, 44(11/12), 1725-1743.
- Cohen, S. L., & Hochberg, Y. V. (2014). *Accelerating startups: The seed accelerator phenomenon* UR Scholarship Repository.
- Coviello, N. E., & Cox, M. P. (2006). The resource dynamics of international new venture networks. *Journal of International Entrepreneurship*, 4(2-3), 113-132.
- Coviello, N., & Munro, H. (1997). Network relationships and the internationalisation process of small software firms. *International Business Review*, 6(4), 361-386.
- Coviello, N., & Tanev, S. (2017). Initiating a new research phase in the field of international entrepreneurship: An interview with professor nicole coviello. *Technology Innovation Management Review*, 7(5)
- Drori, I., & Wright, M. (Eds.). (2018). *1. accelerators: Characteristics, trends and the new entrepreneurial ecosystem*. Edward Elgar Publishing.
- Dubois, A., & Gadde, L. (2002). Systematic combining: An abductive approach to case research. *Journal of Business Research*, 55(7), 553-560.
- Dubois, A., & Gibbert, M. (2010). From complexity to transparency: Managing the interplay between theory, method and empirical phenomena in IMM case studies. *Industrial Marketing Management*, 39(1), 129-136.
- Dyer Jr, W. G., & Wilkins, A. L. (1991). Better stories, not better constructs, to generate better theory: A rejoinder to eisenhardt. *Academy of Management Review*, 16(3), 613-619.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532-550.
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *The Academy of Management Journal*, 50(1), 25-32.
- Elfring, & Hulsink. (2003). Networks in entrepreneurship: The case of high-technology firms. *Small Business Economics*, 21(4), 409-422. doi:10.26180/418357

- Engelman, R., Carneiro zen, A., & Fracasso, E. M. (2015). The Impact of the incubator on the internationalization of firms. Retrieved from <http://repositorio.uahurtado.cl/handle/11242/6730>
- Eriksson, P., & Kovalainen, A. (2008). Qualitative research in business studies.
- Etemad, H., Wright, R. W., & Dana, L. P. (2001). Symbiotic international business networks: Collaboration between small and large firms. *Thunderbird International Business Review*, 43(4), 481-499. doi:10.1002/tie.1009
- European accelerator summit. (2016). *Acceleration today: Trends and challenges* Retrieved from <http://www.europeanaccelerators summit.com/wp-content/uploads/sites/14/2016/12/ACCELERATION-TODAY.pdf>
- Evered, R., & Louis, M. R. (1981). Alternative perspectives in the organizational sciences: “inquiry from the inside” and “inquiry from the outside”. *Academy of Management Review*, 6(3), 385-395.
- Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry*, 12(2), 219-245.
- Gibbert, M., & Ruigrok, W. (2010). The “what” and “how” of case study rigor: Three strategies based on published work. *Organizational Research Methods*, 13(4), 710-737.
- Goswami, K., Mitchell, J. R., & Bhagavatula, S. (2018). Accelerator expertise: Understanding the intermediary role of accelerators in the development of the bangalore entrepreneurial ecosystem. *Strategic Entrepreneurship Journal*, 12(1), 117-150.
- Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American Journal of Sociology*, 91(3), 481-510.
- Gummesson, E. (2007). Case study research and network theory: Birds of a feather. *Qualitative Research in Organizations and Management: An International Journal*, 2(3), 226-248.
- Hackett, S. M., & Dilts, D. M. (2004). A systematic review of business incubation research. *The Journal of Technology Transfer*, 29(1), 55-82.
- Halinen, A., & Törnroos, J. (2005). Using case methods in the study of contemporary business networks. *Journal of Business Research*, 58(9), 1285-1297.
- Hathaway, I. (2016). What startup accelerators really do. *Harvard Business Review*, 1
- Hilmersson, M., & Papaioannou, S. (2015). SME international opportunity scouting—empirical insights on its determinants and outcomes. *Journal of International Entrepreneurship*, 13(3), 186-211.
- Isabelle, D. A. (2013). Key factors affecting a technology entrepreneur's choice of incubator or accelerator. *Technology Innovation Management Review*, 3(2), 16.
- Jack, S. L., & Anderson, A. R. (2002). The effects of embeddedness on the entrepreneurial process. *Journal of Business Venturing*, 17(5), 467-487.
- Jack, S. L., Anderson, A. R., Drakopoulou Dodd, S., & Moulton, S. (2015). Using the constant comparative technique to consider network change and evolution. *Handbook of Qualitative Research Techniques and Analysis in Entrepreneurship*, 21-51.
- Johannisson, B., Ramírez-Pasillas, M., & Karlsson, G. (2002). The institutional embeddedness of local inter-firm networks: A leverage for business creation. *Entrepreneurship & Regional Development*, 14(4), 297-315.

- Johanson, J., & Vahlne, J. (2009). The uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. *Journal of International Business Studies*, 40(9), 1411-1431.
- Kabbara, D. (2016). 6. the influence of the entrepreneur and the accelerator in the internationalization process of web-based firms. *The Changing Global Economy and its Impact on International Entrepreneurship*, 136.
- Keeble, D., Lawson, C., Smith, H. L., Moore, B., & Wilkinson, F. (1998). Internationalisation processes, networking and local embeddedness in technology-intensive small firms. *Small Business Economics*, 11(4), 327-342.
- Lahtinen, H., Pekkala, H., Halme, K., Salminen, V., Härmälä Valtteri, Wiikeri, J., Rouvinen, P. (2016). Startup-yritysten kasvun ajurit ja pullonkaulat.
- Laperriere, A., & Spence, M. (2015). Enacting international opportunities: The role of organizational learning in knowledge-intensive business services. *Journal of International Entrepreneurship*, 13(3), 212-241.
- Lechner, C., Dowling, M., & Welppe, I. (2006). Firm networks and firm development: The role of the relational mix. *Journal of Business Venturing*, 21(4), 514-540. doi:10.1016/j.jbusvent.2005.02.004
- Leppäaho, T., Chetty, S., & Dimitratos, P. (2018). Network embeddedness in the internationalization of biotechnology entrepreneurs. *Entrepreneurship & Regional Development*, 30(5-6), 562-584.
- Mainela, T., Puhakka, V., & Servais, P. (2014). The concept of international opportunity in international entrepreneurship: A review and a research agenda. *International Journal of Management Reviews*, 16(1), 105-129.
- Mainela, T., Puhakka, V., & Sipola, S. (2018). International entrepreneurship beyond individuals and firms: On the systemic nature of international opportunities. *Journal of Business Venturing*,
- McDougall, P. P., & Oviatt, B. M. (2000). International entrepreneurship: The intersection of two research paths. *Academy of Management Journal*, 43(5), 902-906.
- Mian, S., Lamine, W., & Fayolle, A. (2016). Technology business incubation: An overview of the state of knowledge. *Technovation*, 50, 1-12.
- Miller, P., & Bound, K. (2011). *The startup factories*. London: National Endowment for Science, Technology and the Arts. Retrieved from <http://www.econis.eu/PPN-SET?PPN=71939192X>
- Nowiński, W., & Rialp, A. (2016). The impact of social networks on perceptions of international opportunities. *Journal of Small Business Management*, 54(2), 445-461.
- Onetti, A., Zucchella, A., Jones, M. V., & McDougall-Covin, P. P. (2012). Internationalization, innovation and entrepreneurship: Business models for new technology-based firms. *Journal of Management & Governance*, 16(3), 337-368.
- Oyson, M. J., & Whittaker, H. (2015). Entrepreneurial cognition and behavior in the discovery and creation of international opportunities. *Journal of International Entrepreneurship*, 13(3), 303-336. doi:10.1007/s10843-015-0156-6
- Pauwels, C., Clarysse, B., Wright, M., & Van Hove, J. (2016). Understanding a new generation incubation model: The accelerator. *Technovation*, 50, 13-24.

- Piekkari, R., Welch, C., & Paavilainen, E. (2009). The case study as disciplinary convention: Evidence from international business journals. *Organizational Research Methods*, 12(3), 567-589.
- PISA, O. (2015). PISA: Results in focus. *Organisation for Economic Co-Operation and Development: OECD*,
- Ruzzier, M., Hisrich, R. D., & Antoncic, B. (2006). SME internationalization research: Past, present, and future. *Journal of Small Business and Enterprise Development*, 13(4), 476-497. doi:10.1108/14626000610705705
- Schwab, K. (2016). *The global competitiveness report 2016-2017*
Retrieved from http://www3.weforum.org/docs/GCR2016-2017/05FullReport/TheGlobalCompetitivenessReport2016-2017_FINAL.pdf
- Schweizer, R., Vahlne, J., & Johanson, J. (2010). Internationalization as an entrepreneurial process. *Journal of International Entrepreneurship*, 8(4), 343-370. doi:10.1007/s10843-010-0064-8
- Slotte-Kock, S., & Coviello, N. (2010). Entrepreneurship research on network processes: A review and ways forward. *Entrepreneurship Theory and Practice*, 34(1), 31-57.
- Spigel, B. (2017). The relational organization of entrepreneurial ecosystems. *Entrepreneurship Theory and Practice*, 41(1), 49-72. doi:10.1111/etap.12167
- Spradley, J. P. (2016). *Participant observation* Waveland Press.
- Stayton, J., & Mangematin, V. (2016). Startup time, innovation and organizational emergence: A study of USA-based international technology ventures. *Journal of International Entrepreneurship*, 14(3), 373-409.
- Surlemont, B., Nlemvo, F., & Pirnay, F. (2002). Facets of technology incubation. *The International Journal of Entrepreneurship and Innovation*, 3(4), 237-243. doi:10.5367/000000002101299286
- Tanev, S. (2017). Is there a lean future for global startups? *Technology Innovation Management Review*, 7(5), 6-15. Retrieved from <https://search.proquest.com/docview/1963138106>
- Tekes. (2015). *Koulutusvienti. kysely oppimisalan yrityksille. oppimisratkaisut-ohjelma.* (). Retrieved from <https://docplayer.fi/1695515-Koulutusvienti-kysely-oppimisalan-yrityksille-2015.html>
- Timmermans, S., & Tavory, I. (2012). Theory construction in qualitative research: From grounded theory to abductive analysis. *Sociological Theory*, 30(3), 167-186.
- Uzzi, B. (1996). The sources and consequences of embeddedness for the economic performance of organizations: The network effect. *American Sociological Review*, , 674-698.
- Vandeweghe, L., & Fu, J. T. (2018). 3. business accelerator governance. *Accelerators: Successful Venture Creation and Growth*, , 37.
- Vasilchenko, E., & Morrish, S. (2011). The role of entrepreneurial networks in the exploration and exploitation of internationalization opportunities by information and communication technology firms. *Journal of International Marketing*, 19(4), 88-105. doi:10.1509/jimk.19.4.88
- Welch, C., Piekkari, R., Plakoyiannaki, E., & Paavilainen-Mäntymäki, E. (2011). Theorising from case studies: Towards a pluralist future for international business research. *Journal of International Business Studies*, 42(5), 740-762.

Welter, F. (2011). Contextualizing entrepreneurship—conceptual challenges and ways forward. *Entrepreneurship Theory and Practice*, 35(1), 165-184.