



The influence of the lean startup methodology on entrepreneur-coach relationships in the context of a startup accelerator

Downloaded from: <https://research.chalmers.se>, 2024-03-13 08:10 UTC

Citation for the original published paper (version of record):

Mansoori, Y., Karlsson, T., Lundqvist, M. (2019). The influence of the lean startup methodology on entrepreneur-coach relationships in the context of a startup accelerator. *Technovation*, 84-85: 37-47.
<http://dx.doi.org/10.1016/j.technovation.2019.03.001>

N.B. When citing this work, cite the original published paper.



The influence of the lean startup methodology on entrepreneur-coach relationships in the context of a startup accelerator

Yashar Mansoori, Tomas Karlsson, Mats Lundqvist

Chalmers University of Technology, Entrepreneurship and Strategy, Vera Sandbergs Allé 8B, 41296 Göteborg, Sweden

ARTICLE INFO

Keywords:

The lean startup methodology
Entrepreneurial coaching
Startup accelerator
Entrepreneur-coach relationship
Vicarious learning

ABSTRACT

The lean startup methodology has been steadily gaining widespread popularity during the past few years. As part of this trend, startup accelerator programs have begun to adopt the methodology as their main organizing framework. At the same time, coaches and their coaching practices lie at the core of many accelerator programs. Despite the widespread recognition of the importance of coaching, there is a lack of knowledge of how the role of coaches in accelerators interacts with the lean startup methodology. Using an ethnographic study design combined with interviews, this study investigates entrepreneur-coach relationships in the context of a university-based accelerator. The findings show that the lean startup methodology influences how entrepreneur-coach relationships evolve and how the formation and progression of these relationships facilitate learning among entrepreneurs. The lean startup methodology creates conflict between the information collected from customers and the (perceived) authority of coaches. However, the entrepreneurial method also enables the coaching to be evolutionary and assumption-changing. Suggestions are made for mitigating challenges related to the progress of entrepreneurial activities and entrepreneur-coach relationships.

1. Introduction

This study examines how adhering to the principles of the lean startup methodology influences entrepreneur-coach relationships in the context of an accelerator program. In recent years, accelerators have been gaining increasing popularity (Hochberg, 2015). From a public policy perspective, it is widely acknowledged that university-based accelerators are important components of regional entrepreneurial ecosystems (McAdam et al., 2016). Accelerators are often limited-duration programs aimed at helping entrepreneurs to define their ideas and build their first prototypes. Traditionally, organizers of such programs have resorted to business planning approaches as organizing framework in order to structure the training and other services they offer. However, as a response to the move away from business planning approaches, many accelerators now adopt the lean startup methodology (Blank and Dorf, 2012; Ries, 2011), which focuses on iterative learning from potential customers (York and Danes, 2014). Many highly ranked accelerators, such as Y Combinator, Techstars, 500 Startups, and AngelPad structure their services following the guidelines of the lean startup methodology. Although coaching is not addressed as part of the lean startup methodology, this study shows that the methodology influences, in markedly distinct ways, how knowledge is communicated within entrepreneur-coach relationships. As a result, the supportive and

developmental role of coaches (Ladd et al., 2015; Pauwels et al., 2016) changes from mentor and vehicle of knowledge transfer, in line with business planning, to facilitator of a hypothesis-testing practice, as per the lean startup methodology (Christiansen, 2009).

The emergence of the lean startup methodology has introduced new ways in which accelerators and services as part of them are structured. In addition to providing entrepreneurs with a more structured way of thinking and acting, the lean startup methodology provides an organizing framework in which coaches can arrange their activities in new ways. The principles and instructions of the lean startup methodology are being widely implemented as part of lectures, seminars, and coaching sessions offered at accelerators. In this vein, coaches employ the structure of the methodology to organize their coaching sessions. These sessions are generally centered on topics such as customer interaction, hypothesis validation, and the analysis of gathered data, all of which are at the center of the instructions of the lean startup methodology. The practices of the methodology are embedded within the coaching sessions and contribute to the regularities or irregularities of coaching practices.

Despite the prevalence of accelerators and the importance of the role of coaches, relatively few studies have examined entrepreneur-coach relationships in any depth. Those that mention coaching tend to be limited to introducing the existence of such role, rather than

E-mail address: yashar.mansoori@chalmers.se (Y. Mansoori).

<https://doi.org/10.1016/j.technovation.2019.03.001>

Received 17 March 2017; Received in revised form 22 February 2019; Accepted 7 March 2019

Available online 14 March 2019

0166-4972/ © 2019 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

providing detailed examinations of the coaching practices and nature of entrepreneur-coach relationships (Adomdza, 2014). Against this backdrop, the purpose of this study is to investigate entrepreneur-coach relationships at a university-based accelerator in Sweden that follows the lean startup methodology. The research question guiding this study was ‘how the incorporation of the lean startup methodology into the processes of an accelerator influences the dynamics of relationships between entrepreneurs and their assigned coaches?’ Here, an ethnographic approach is used to examine the lectures, seminars, and coaching sessions that form the backbone of a 15-week accelerator program. In addition, ten interviews with entrepreneurs and six interviews with coaches were conducted to complement the extensive non-participatory observational data. This study contributes to the literature on accelerators, entrepreneurial coaching, and the lean startup methodology in two ways. First, it develops a more in depth understanding of the role of coaches and coaching sessions in terms of both form and content. Second, it traces the instructions of the lean startup methodology throughout and beyond the coaching sessions to investigate the influence of the methodology as an organizing framework.

2. Frame of reference

The current research setting involves three main spaces with various levels of overlap: the lean startup methodology, entrepreneurial coaching and accelerators. These components will, therefore, be introduced here in this order to then qualify the ethnographic study where interrelations between these components will be investigated.

2.1. The lean startup methodology

The lean startup methodology by Ries (2011) was inspired by the principles of the lean manufacturing (avoiding waste and optimizing resource spending) and the work of Steve Blank (Blank, 2006). The ideas in the methodology are reminiscent of contributions such as “disciplined entrepreneurship” (Sull, 2004), “discovery-driven planning” (McGrath and MacMillan, 2000) and “probe and learn” (Lynn et al., 1996). The methodology benefits from a set of tools taken from other theories and methods, such as the customer development framework (Blank and Dorf, 2012), rapid prototyping of design thinking (Brown, 2008), and agile software development principles (Dybå and Dingsøyr, 2008). Core to the lean startup methodology is validated learning through purposeful experimentation, in which the effectuation principles of flexibility and affordable loss (Read and Sarasvathy, 2005) are applied (Fredriksen and Brem, 2017). The lean startup methodology has a unique language, structure and strict advice. Therefore, it can be viewed as a metaphorical boundary object, enabling the wielders of the method to display their expertise (Koskinen, 2005). Validated learning highlights progress through a process of testing a set of carefully formulated assumptions and analyzing solid empirical data obtained from real customers (Maurya, 2012; Ries, 2011).

The lean startup methodology as a cyclical process is grounded in three main sets of activities. First, entrepreneurs dissect their business ideas into testable assumption and map them onto the business model canvas (Osterwalder et al., 2005) as testable assumptions. This graphical representation contains all the key aspects that entrepreneurs should be relatively certain about. Second, entrepreneurs engage in a process designed to test the assumptions in relation to their business ideas (Ries, 2011). The sequence of these tests is determined by the perceived criticality of the results of the tests for the continuation of the process. One way to test the assumptions is to prepare a “minimum viable product” (MVP). An MVP is a version of the product containing the smallest set of features, built using the minimum amount of time and resources and provides entrepreneurs with the information required to validate or invalidate their assumptions (Ries, 2011). After a rigorous evaluation of the results, the invalidated assumptions are replaced by new assumptions and are then re-tested. This process

continues until a reasonable number of tests validates the critical assumptions. Finally, entrepreneurs decide on the remaining assumptions based on their interactions with potential customers. A key concept in the lean startup methodology is the “product-market fit.” The fit implies that the product idea has a market and, therefore, there are customers willing to pay for the value offered by the product (Blank and Dorf, 2012). The ultimate goal of the process is to guide entrepreneurs in finding this fit.

2.2. Entrepreneurial coaching

Coaching has been defined in several ways: as all activities aimed at bringing out the potential of individuals (Hargrove, 2000); all deliberate intervention activities used to help individuals to develop and achieve their specified goals (Aas and Vavik, 2015); a structured two-way process to developing skills and competencies through “assessment, guided practical experience, and regular feedback” (Parsloe, 1999:1); and a set of practices to help individuals to learn (Whitmore, 1992). Coaching is suggested to be instrumental as a support measure (Audet and Couteret, 2012), as a structured framework to steer communications and conversations (Spence and Grant, 2007), as a tool to organize peer-learning (Kutzhanova et al., 2009), as a way to create a sense of peer pressure (Van Weele et al., 2015), as a function that creates a sense of belonging to a larger group (Kutzhanova et al., 2009), and, most importantly, as an aid to encourage action (Cooper et al., 2012; Flaherty, 2005).

In this study, entrepreneurial coaching is defined as the support that entrepreneurs receive in the early stages of their entrepreneurial activities to help them to develop and acquire necessary skills (Audet and Couteret, 2012). The key to coaching, in general, and to entrepreneurial coaching in particular is the notion of learning (Bachkirova et al., 2014). Often, rather than resolving specific problems, coaches provide a context within which entrepreneurs can develop the skills and expertise needed to solve the problems that may arise. Coaching includes all the various ways of helping entrepreneurs in startup accelerator programs, where entrepreneurs lack knowledge, skills, and experience. Therefore, coaches can help entrepreneurs to extract entrepreneur-driven solutions. Although sometimes valuable, it is not necessarily the startup background and practical experience of coaches that defines entrepreneur-coach relationships (Britton, 2010).

The productiveness of the relationship between coaches and entrepreneurs is influenced by factors such as the equality of power between the two sides of the coaching relationship, the extent to which a culture of collaborative learning is promoted, the effectiveness of communication, and the tools and techniques used to facilitate the developmental efforts (Cox et al., 2014; Schein, 1987). In order to promote openness and trust within an entrepreneurial coaching relationship, it is advised to avoid a hierarchy between the coach (who can be viewed as the facilitator of learning) and the entrepreneur (O’Broin and Palmer, 2009; Schein, 1987). Moreover, communications can be facilitated effectively through practices such as “listening, clarifying, encouraging reflection and criticality, and questioning” (Cox et al., 2014:6), which have been shown to be reliable vehicles for collaborative learning (Cox, 2013). Therefore, the quality of these relationships impacts effective learning by facilitating and speeding up learning episodes.

Entrepreneurial coaching relationships can be divided into three archetypes: functionalist, engagement, and evolutionary. In a *functionalist coaching* relationship, the desired outcome of the coaching episodes is incremental changes to routines and activities, with no major revision of entrepreneurs’ existing norms and values (Brockbank, 2008). Functionalist coaching is directive, didactic, and advice-driven in principle (Brockbank and McGill, 2006). The learning outcome in this style is single-loop learning (Argyris and Schön, 1974). A drawback of this approach is that it views the entrepreneur as “detached, disembodied, and passive” (Brockbank and McGill, 2006:30).

In an *engagement coaching* relationship, similar to functionalist coaching, the desired outcome is incremental improvement in routines, while preserving existing norms and values. However, in this case, this happens in a non-directive manner. To minimize resistance from entrepreneurs, the coach adopts a humanistic and relationship-driven approach (Brockbank and McGill, 2006). This relationship places greater value on learning and change (Brockbank, 2008). The learning outcome in this style is also single-loop learning (Argyris and Schön, 1974) but includes the potential for reflection (Brockbank and McGill, 2006).

In contrast to functionalist and engagement coaching, in an *evolutionary coaching* relationship, the desired outcome is transformational development induced by fundamental changes to the established assumptions held by entrepreneurs. Similar to an engagement coach, an evolutionary coach adopts a humanistic and relationship-driven approach to learning (Brockbank and McGill, 2006). The learning outcome in this style is double-loop learning (Argyris and Schön, 1974), which promotes the personal and professional development of entrepreneurs, leading them to improve their existing norms and values (Brockbank and McGill, 2006). Here, the coach helps entrepreneurs to take ownership of their learning and development. The main distinguishing feature of evolutionary coaching is the platform it provides for 'reflective dialogue' with entrepreneurs (Brockbank and McGill, 2006). In the context of this study, coaches engage in an evolutionary approach, investing more time in assisting thought and reflection as a way to facilitate learning and development rather than directing entrepreneurs' actions.

2.3. Startup accelerators

The empirical setting of this study is that of startup accelerators. As a rapidly growing phenomenon, startup accelerators are viewed as a mutation of incubators (Wise and Valliere, 2014), providing more services than those offered by traditional incubators to early-stage businesses. In comparison with incubators, accelerators are "fixed-term, cohort-based programs" that include educational and inspirational elements in addition to coaching and "culminate in a public pitch event or a demo day" in front of a group of potential investors (Cohen and Hochberg, 2014:4). One of the first accelerators, Y Combinator, was established in the United States in 2005, and has since inspired many others. As part of accelerator programs, entrepreneurs are offered a work space, educational and coaching possibilities, and access to the accelerator's alumni, network of coaches, and organizers, including venture capitalists, experienced entrepreneurs, and corporate executives (Bruneel et al., 2012). The supportive environment of accelerators provides peer learning and peer support, allowing for opportunities for networking and referrals. Being affiliated with an accelerator contributes to creating an entrepreneur's brand and acts as a legitimization tool, helping the entrepreneur to establish contacts and raise necessary funds (Wise and Valliere, 2014). In contrast with incubators, an important value-added service is the role played by coaches. However, despite the growing interest in accelerators from policymakers, private and public investors, universities, and even corporations (Mian et al., 2016), little is known about the role of coaches and their coaching in the context of accelerators.

This study relies on data gathered from an accelerator housed by Chalmers Ventures, the incubation and seed-funding subsidiary of Chalmers University of Technology in Sweden. Chalmers is recognized as an entrepreneurial university that emphasizes venture creation (Berggren, 2011; Clarysse and Bruneel, 2007; Jacob et al., 2003; Lundqvist, 2014; Lundqvist and Williams-Middleton, 2008; Ollila and Williams-Middleton, 2011; Wright, 2007). The accelerator program runs for 15 weeks and offers access to its network, coaching, and educational facilities for up to 20 entrepreneurial teams in each cohort.

Like most accelerators, the aim of this accelerator program is to help a business idea or an existing venture to become growth and

investment-ready (Davila et al., 2010). The accelerator program offers office spaces, networking and financing events, dedicated business coaching, and visits from serial entrepreneurs and culminates in a demo day. The program bears direct resemblance to the Y Combinator program in terms of its structure. However, the competition to get into the studied accelerator is lower than Y Combinator, and a consequence is that the ventures in the studied accelerator are younger than those in Y Combinator.

Entrepreneurs apply to join the accelerator program while in the early stages of the development of their ideas and are put in groups with assigned coaches. The coaches include successful entrepreneurs, accelerator program alumni, venture capitalists, lawyers, angel investors, and corporate executives. The accelerator program also offers a number of educational lectures covering a wide range of topics in line with the lean startup methodology. The program is structured into three phases, each lasting five weeks. After the second phase, there is a selection process, with almost half of the teams being eliminated. The remaining teams continue through the third phase before pitching their ideas, receiving feedback, and answering questions posed by investors and the public on the final demo day.

3. Data and methods

3.1. Research methods

It has been argued that the combination of ethnography, interviews, and other data-collection methods can result in important contributions as this provides mechanism-based explanations and rich descriptive accounts that cross and connect different levels of analysis (Vaughan, 2009). Ethnography can be understood as "research conducted by situating oneself in a social setting to observe and analyze individual interaction in order to understand some complex social process, event, activity, or outcome" (Vaughan, 2009:690). Ethnographers spend time in their research setting and become immersed in the activities that need attention, including the beginning and ending points. Furthermore, they enter the field with no clear guidelines as to how the process might evolve. According to Aldrich and Baker (1997), there is a lack of ethnographical research in the field of entrepreneurship, to which Martinez et al. (2011) concur. This study adopts ethnography as a research method to investigate the actions and social interactions in the context of a startup accelerator program. Thus, the empirical evidence is based on ethnographic data, including exploratory non-participant observations, interviews, and secondary data, assisting in generating an empirically grounded understanding of entrepreneur-coach relationships.

3.2. Sample

The sample initially consisted of 17 entrepreneurial teams and 41 entrepreneurs. All teams were composed of at least two entrepreneurs and were encouraged to participate in all scheduled activities. The sample included a broad range of participants in terms of age, gender, education, and experience. The accelerator program included three phases. At the end of the second phase, the organizers identified 10 teams to proceed to the third phase. Thus, the sample was limited to the remaining teams for further interviews and a closer examination of their processes, although the data gathered through observation up to that point included all 17 teams. This was simply the result of a lack of access to the eliminated teams. During some of the interviews, team members other than the lead entrepreneurs participated, but for simplicity, they were treated as a single group in the analysis of the collected data. For instance, statements from entrepreneurs who were part of Startup 1 are presented as S1. Tables 1 and 2 provide additional details about the entrepreneurs and coaches, respectively.

Table 1
Entrepreneurs and their teams.

	Idea	Prototype before the program	Prior knowledge of LSM ^a	Major changes	Finished prototype
(S1)	Online diagnosis of urinary tract infection	No	None	No	Yes
(S2)	Property registration platform	No	None	No	Not completed
(S3)	Market research platform	Yes	Limited familiarity	Yes	Yes
(S4)	Matchmaking tool for the sublet market	No	Previous courses	Yes	Not completed
(S5)	Digital recruitment service	No	Limited familiarity	Yes	Not completed
(S6)	Sleep optimization app	No	None	No	Yes
(S7)	Online ecological shop	No	Limited familiarity	Yes	Yes
(S8)	Gardeners logging app	Yes	Limited familiarity	No	Yes
(S9)	Smart textile for road workers	No	None	Yes	Yes
(S10)	App for diabetes	No	None	Yes	Not completed

^a The lean startup methodology.

3.3. Data collection

The empirical data for this study were collected through ethnographic field research during spring and summer of 2016. This included non-participant observations, in-depth semi-structured interviews, weekly qualitative questionnaires, the cohort's public Slack channel (a cloud-based team collaboration tool), and field notes collected during the coaching sessions, lectures, and inspirational seminars. During the 15 weeks of the accelerator program, the lead author was physically present at the accelerator and followed nearly all of the activities. All lectures, inspirational seminars, and coaching sessions were recorded. During the weekly coaching sessions, the lead author attended one of the sessions and recorded the other two. Interviews with the lead entrepreneurs of the 10 teams who proceeded to the third phase, as well as with the six coaches involved in the accelerator program were conducted. The interviews lasted 80 min each, on average, and were recorded and transcribed verbatim. Three sets of qualitative questionnaires were sent on a weekly basis: one at the beginning of the week, one after the coaching sessions, and one after the lectures and inspirational seminars. The entrepreneurs were asked about the activities they had undertaken, their learning, and their plans for the upcoming week. All the public interactions between the entrepreneurs and their coaches as well as other entrepreneurs, which were documented on the program's Slack channel were closely monitored and coded. Table 3 demonstrates the data sources.

3.4. Data analysis

The data were analyzed inductively using grounded methodology principles, following natural language coding and categorization (Miles and Huberman, 1984). All empirical data were imported into a qualitative data analysis application (Atlas.ti) and open-coded at the level of smallest meaning units (Strauss and Corbin, 1998). The codes include a wide range of topics, such as inclusion of the lean startup methodology as part of the accelerator program, coaches and their positions of authority, the role of coaching sessions in creating legitimacy for the coaches, the impact of the coaching sessions on entrepreneurs' mental development, and the role of the social setting in developing necessary skills. To limit the broad categorization process, the data were arranged using the codes and categories related to the entrepreneur-coach relationships. The rationale behind focusing on these codes and categories, and excluding others, follows the purpose of the study, which revolves around an explicit entrepreneurial method, the pronounced role of coaches, and the social aspects of the coaching sessions. For instance, the category "lack of instructions on the level of tools and tactics" was excluded because it pertains to the design of the accelerator program rather than to entrepreneur-coach relationships. This structure provided a rich and concise narrative of events. Table 4 presents themes and categories.

4. Findings

In line with Table 4, the findings section is organized into three subsections, corresponding to the three larger themes. Therefore, each theme is discussed by providing quotes from the entrepreneurs and coaches for the identified categories. The findings section focuses primarily on the impact of incorporating and applying the lean startup methodology on entrepreneur-coach relationships along the three themes of coaching form, coaching content, and coaching context.

4.1. Coaching form

The first theme refers broadly to the elements of the accelerator program that impact the structure of coaching sessions. It provides texture to the dynamics of the entrepreneur-coach relationships and offers insights into the role played by the instructions of the lean startup methodology. The entrepreneurs and their coaches interacted through individual and group coaching sessions, as well as during educational lectures. A large number of these interactions were influenced by the ideas and the instructions of the lean startup methodology. The team of coaches decided to follow a common structure during the coaching sessions. They explicitly asked entrepreneurs to prepare status updates describing their contacts with people outside their teams, past activities related to validating their hypotheses, and plans for upcoming activities as well as the insights they gathered from those activities (to provide a space for peer learning). This agenda helped to structure the interactions between coaches and entrepreneurs in ways that made entrepreneurs aware of the activities expected of them and, therefore, facilitated their progress in line with the expectations of the coaches.

According to the coaches, this agenda was designed to "provide direction and confidence" [C1, C3, C4], "help to develop new ways of thinking and necessary skills" [C1, C5], "induce peer pressure and increase engagement" [C1, C6], "encourage sharing experiences and helping each other" [C5, C6], and "cultivate a sense of belonging" [C2, C5, C6]. One of the coaches explained the process of setting the agenda as follows: "We sat down and discussed a few headlines and then we dug into those. I can say that we finally landed on following the lean startup methodology in everything we did" [C1]. Moreover, all coaches claimed that they followed the principles and instructions of the lean startup methodology explicitly when organizing their coaching sessions and their individual relationships with the teams they coached. Consider the following statement: "I think that the lean startup methodology and all the tools such as business model canvas give the entrepreneurs and us coaches ways to structure information and find gaps in our knowledge to be able to treat some of the uncertainties and make sense of various situations" [C5].

The inclusion of the lean startup methodology also impacted how coaches were viewed by the entrepreneurs during the coaching sessions. The structure signalled legitimacy of coaches' experience and facilitated trust between them and the entrepreneurs. The explicit adherence to the instructions of the lean startup methodology eventually had a positive influence on the entrepreneur-coach relationships and

Table 2
Coaches and their experiences.

	Experience at the accelerator	Coach training	Knowledge about the lean startup methodology	Coaching experience	Startups coached
(C1)	Four years	No	Trips to California, books, online resources	Business plan competitions, Chalmers ventures, Chalmers Innovation	S1, S2, S4, S5
(C2)	Two years	No	Books and online resources	Chalmers Ventures	S1, S2, S4, S5
(C3)	Four years	No	Trips to California, books, online resources	BornGlobal, Chalmers Innovation	S3, S7, S8
(C4)	15 years	No	Books, online resources, lectures by proponents of the lean startup methodology	Chalmers Ventures, Chalmers Innovation	S3, S7, S8
(C5)	16 years	Yes	Books, online resources, lectures by proponents of the lean startup methodology	Chalmers Ventures, Chalmers Innovation	S6, S9, S10
(C6)	One-and-a-half years	No	Books, online resources, course at Palo Alto	Chalmers Ventures	S6, S9, S10

created a sense that the coaches possessed the relevant expertise: “I listen to my coach because his knowledge is the sum of years of reading, interactions and solid experiences. I would listen to someone who is an expert in the lean startup processes rather than one who just expresses opinions” [S7]. This legitimacy was used directly to resolve internal conflicts in the teams by referencing the instructions received from the coaches that followed those of the lean startup methodology: “If I said something and my team members disagreed and then I confronted them with what our coach had said, they agreed with my point a lot easier because they valued our coach’s expertise especially regarding the lean startup methodology” [S5].

Moreover, several factors led to the coaches being viewed as figures of authority. Placing demands on the entrepreneurs in line with the lean startup methodology, requiring that they structure their activities around them, and the filtering process after the second phase were important factors in the conditioning of the entrepreneur-coach relationships. One of the entrepreneurs offered the following statement in response to a hypothetical question: “If I talk to a bunch of people and then they tell me that an aspect of my idea does not make any sense, and then I consult my coach and he advises me to the contrary, I listen to my coach” [S3]. One of the coaches expressed concern about the unreasonable trust and authority that this created: “If the coach says go left and the customer says go right, then the entrepreneurs go left. It is because they have unsound expectations of their coach. Unfortunately, the entrepreneurs have a bit too much respect for our authority” [C1]. In addition to providing a structure and direction for the coaching sessions and entrepreneur-coach relationships, the instructions of the methodology influenced the thinking and actions of the entrepreneurs.

4.2. Coaching content

The second theme refers broadly to the implicit and explicit effects of the lean startup methodology as the organizing framework on the knowledge content throughout the coaching sessions. Participating in coaching sessions and being exposed to the instructions of the lean startup methodology led to a number of salient changes in the activities undertaken by the entrepreneurs. As part of the coaching sessions, entrepreneurs were asked to map their assumptions about their business ideas to the business model canvas: “Early in the process, we were supposed to map our critical hypotheses about our target customers, document them on the [business model] canvas and immediately start talking to them to figure out whether or not the problem we aim to solve actually exists outside of our heads” [S4]. Moreover, the coaches explicitly required that entrepreneurs contact potential customers and collect feedback on their ideas: “Our coaches made us go out and talk to as many customers as possible, and report the insights gained through those interactions during coaching sessions. As it became competitive between the teams, we pushed all our team members to talk to an even larger number of people” [S1].

The newly introduced activities in the coaching sessions led to new routines and processes: “Every single step we now take is based on the knowledge we have gathered from validated sources, mainly from customers and users. Now, every decision we make is based on validated assumptions” [S5]. These new routines eventually translated into new ways of

viewing the venture-creation process. That is, the entrepreneurs’ mindset related to reasonable and rational ways to proceed was modified: “Having participated in the coaching sessions and through interacting with our coaches, I think it is fair to believe that when one has an idea, one needs to bounce it back and forth with others in general and customers in particular and consider the feedback one gets after thorough evaluation” [S9].

As a result of the lean startup methodology, coaching sessions also created an environment in which entrepreneurs gained self-confidence and self-efficacy. This was facilitated by coaching sessions that provided a forum in which entrepreneurs could discuss their achievements, share their experiences, receive recognition and help other entrepreneurs, and perceive a level of expertise. Despite failing to fully execute his idea and create the first prototype, one of the entrepreneurs expressed more confidence in pursuing new ideas: “I hope we would continue with our idea but if we do not succeed with it, I feel much more comfortable pursuing a new idea or starting a new company in the future because interacting with our coaches gave us this experience and helped us to collect necessary knowledge in relation to starting a new business” [S6]. Another entrepreneur claimed that he now has a clear process for starting a new business: “By completing this accelerator program and participating in the coaching sessions, I believe it is more accessible for us to pursue another idea because I have the experience. Our participation in the coaching sessions and learning from our coaches make me believe that we have a much better overview of the entrepreneurial process” [S2].

In addition to higher self-confidence, entrepreneurs generally expressed higher self-efficacy. Having access to new ways of doing things was instrumental in their perceived self-efficacy. They reported that being instructed by the coaches about the lean startup methodology has helped to improve their chances of success, both during and after the accelerator program: “I am already researching a number of different ideas at the moment. I definitely feel now that I have a higher chance of becoming successful at starting my business than if I have not learned about the [the lean startup] methodology” [S8]. In addition to providing content and form, the inclusion of the lean startup methodology, coupled with the social nature of the coaching sessions, proved to be influential in terms of knowledge accumulation, motivation, and confidence.

4.3. Coaching context

The third theme refers broadly to the role played by the context of the coaching sessions in combination with the instructions of the lean startup methodology. This theme focuses on the interactions within the coaching sessions, both between the entrepreneurs and the coaches, and among the entrepreneurs. One of the entrepreneurs described his experience of receiving feedback from his coach as moments that provided him with new perspectives that he had previously neglected: “We attended the coaching sessions each week with the perception that we had confirmed or disconfirmed some of the assumptions about our idea. During these sessions, coaches gave us new angles of perception by arguing in line with the [the lean startup] methodology, even though we thought we had confirmed some aspects of our idea. In many cases, this led us to different directions altogether” [S10]. One of the coaches noted that an important

Table 3
Empirical data.

Data type	Sources of data	Details
Interviews	Six coaches	8 h
	12 entrepreneurs	11 h
Observations	12 group coaching sessions	12.6 h
	Seven lectures and six seminars	20 h
	Discussions between coaches during pre-program selection meeting	2 h
	Discussions between coaches during mid-program selection meeting	3 h
	17 elevator pitches during demo day at the end of phase 2	4 h
	10 15-min pitches during final demo day	3 h
Presentations	PowerPoint slides	27 slide decks
Messages and discussions	Slack channel communications	40 pages
Qualitative questionnaires	Three sets of weekly online questionnaires	471 data points
Researcher's notes	Non-participant observations in the program	65 pages
Recordings	27 group coaching sessions	20 h

aspect of the coaching sessions was to make the entrepreneurs follow the lean startup methodology, report back on the insights they had gained through customer interactions and capitalize on the social nature of the coaching sessions. The intention was to encourage further interactions and learning possibilities during the coaching sessions. One of the coaches expressed this as follows: *“The point is that we wanted them to get out of the building and conduct interviews, to start interacting with their customers and report them back. We explicitly asked them for solid evidence and the implications of the evidence collected through those interactions”* [C3]. In general, the coaches encouraged the entrepreneurs to *“raise the bar”* [C2, C5, C6] by increasing the number of interactions in subsequent weeks.

The coaches used the lean startup methodology to add richness to the social interactions of the coaching sessions. They encouraged entrepreneurs to see themselves in the coaching groups as members of *“the collective brain”* [C5] and, therefore, find ways to help their fellow entrepreneurs by being supportive at all times. Many of the interactions among entrepreneurs were influenced by the instructions of the lean startup methodology. As a result, entrepreneurs shared their experiences and received feedback from other entrepreneurs: *“We spend a lot of time with each other working out a map of where we should be going, what we should be doing, and planning activities while giving each other feedback. We gave advice or got inspiration. For instance, we got interesting feedback on the experiments we had designed to validate some of our*

hypotheses” [S9]. One of the coaches described the dynamics of the coaching sessions as follows: *“When entrepreneurs talked about a particular topic, they knew that others may have gone through the same process before. So, they wanted to know what and how others have managed various issues and what their learning was”* [C2]. Another coach characterized the coaching sessions as learning and developmental episodes, leading to entrepreneurs bond over knowledge and, thus, benefit from each other's expertise: *“The relationships can get more solidified. When two entrepreneurs with quite different opinions on something discussed during the coaching sessions, they triggered something in each other. The group nature of the coaching sessions allowed for this to happen. I think the bonding over the knowledge and the ensuing friendships between the entrepreneurs were important outcomes of using the lean startup methodology in the coaching sessions”* [C1].

In addition, the nature of these coaching sessions provided a plethora of possibilities for peer learning and peer pressure. The coaches consciously created a competitive setting, which contributed to the formation of these possibilities. On several occasions, entrepreneurs discussed learning events that had resulted from second-hand experiences during the coaching sessions. By virtue of being present at the coaching sessions, entrepreneurs succeeded in accumulating relevant knowledge in line with the lean startup methodology that proved helpful to their processes. Consider the following statement from one of the entrepreneurs during an informal chat with the lead author: *“I*

Table 4
The emerging themes and categories.

Themes	Categories	Example codes
Coaching form	<ul style="list-style-type: none"> ● The lean startup methodology and the entrepreneur-coach dynamics ● Coaches and the position of authority ● Coaches and their legitimacy ● Coaching sessions and revised structure ● Coaching sessions and facilitation of trust formation 	<ul style="list-style-type: none"> ● The coaches' expectations from the entrepreneurs in line with the methodology ● Valuing coaches' opinions higher than external sources of data ● Coaches' knowledge about the methodology creating credibility ● Commitment to the lean startup methodology as a structuring framework ● Building trust facilitated by the demands of the methodology to share progress and problems
Coaching content	<ul style="list-style-type: none"> ● Coaching sessions and changes in activities undertaken ● Coaching sessions and changes in mindset ● Coaching and elevated self-confidence ● Coaching and elevated self-efficacy 	<ul style="list-style-type: none"> ● A systematic approach to validating ideas facilitating interactions with coaches ● Understanding changes and openness to flexibility ● Group coaching as a tool contributing to self-confidence ● Changes in perception related to the difficulty of starting a new business
Coaching context	<ul style="list-style-type: none"> ● Social aspects of the coaching sessions (interactions with the coaches) ● Social aspects of the coaching sessions (interactions with the other entrepreneurs) ● Coaching sessions and opportunities for peer learning ● Competition and progress ● Coaching sessions and peer pressure 	<ul style="list-style-type: none"> ● Coaches encouraging more discussion and participation ● Entrepreneurs sharing contacts and offer help ● Entrepreneurs sharing plans on how they validated their hypotheses ● Competition as a motivating factor for entrepreneurs to contact customers ● Coaching session as a mechanism to pressure entrepreneurs into more action

remember several occasions during the coaching sessions that one of the entrepreneurs asked a question or shared a specific experience and the question was exactly what I was pondering about or the insights from the experience were very relevant to my own process" [S10]. The coaches viewed the coaching sessions as arenas in which entrepreneurs could give each other feedback and listen to and learn from each other's experiences: "The main goal behind the coaching sessions was to build an effective culture where entrepreneurs shared experiences and gave each other leads" [C6].

Moreover, the coaches placed pressure on the entrepreneurs by exposing them to other entrepreneurs' achievements. They structured the coaching sessions in a way that the entrepreneurs were required to give status updates, including critical insights gained through their interactions with customers. This helped the coaches to create pressure and provide encouragement and, therefore, get entrepreneurs to raise their ambitions: "We certainly wanted to make it more efficient by having peer pressure among the teams. The idea was to expose them to what other teams have really been up to, talking to people, getting a deeper understanding, and getting more meaningful contacts with potential customers" [C4]. This resulted in a competitive environment in which some entrepreneurs tried to surpass others by becoming more proactive and persistent in attracting the attention of their coaches: "It was good for the entrepreneurs to listen and see how other teams were progressing in relation to what they were doing. It became somehow a competitive environment. When we gave them a task, they did not want to come back and be the worst guys in the room. They knew that at the end of the day, there was a qualification for them to be able to continue in the accelerator program. I think this resulted in them performing better by being in a social setting, listening to other entrepreneurs and contributing to discussions" [C3]. In general, entrepreneurs were positive about the competitive side of the coaching sessions and associated some of their progress to this specific element: "The coaches made it into a competition between us. I think that it was when they pushed the hardest that we progressed the most by fighting the most during this experience" [S8].

4.4. A brief summary of the key findings

The findings suggest several ways in which the lean startup methodology influenced the entrepreneur-coach relationships. The coaches were tasked with providing direction and confidence and help entrepreneurs to develop their thinking and gather necessary skills. However, the dynamics of the coaching sessions were more similar to a traditional leader-follower structure. The lean startup methodology enabled coaches to create the sense of trust and competence necessary to establish productive entrepreneur-coach relationships. The coaches' advice in line with the instructions of the lean startup methodology helped to reduce team conflict by resolving intra-team deadlocks. Interestingly, the entrepreneur-coach relationships were shown to be at odds with the basic theoretical principles of the lean startup methodology, namely, that hypotheses should be tested against empirical data collected through interactions with potential customers, rather than having theory or authority be the key principles guiding action. A particular aspect of the coaching sessions was the opportunities it provided for social and peer learning. This affected the entrepreneur-coach relationships, as well as how the coaching sessions were structured and organized. Lastly, entrepreneurs felt they benefited from the competitive environment.

5. Discussion

This study explores the relationships between entrepreneurs and their coaches within the context of an accelerator, guided and structured explicitly by the instructions of the lean startup methodology. Employing an ethnographic research design, this study offers important insight into the coaching practices and how the inclusion of the lean startup methodology helps to influence and shape coaching practices.

The discussion section is divided into four sub-sections: the structure of the coaching sessions, the dynamics governing the entrepreneur-coach relationships, the paradox of data in relation to authority, and the vicarious learning that occurs during these coaching sessions.

5.1. The structure of coaching sessions

The experience of entering an accelerator program and facing similar challenges has been found to cultivate strong ties and create a common identity among entrepreneurs (Bruneel et al., 2012). Previous studies have shown that participating in lectures and inspirational seminars relevant to problems faced by entrepreneurs contributes to an increased knowledge base among the participants (Davidsson and Honig, 2003). In the current case, coaches organized the coaching sessions following the lean startup methodology to encourage entrepreneurs to act and to allow for their transparent evaluation. This included encouraging entrepreneurs to share detailed accounts of their activities specific to the lean startup methodology in order to build bonds among them.

The setup of the studied accelerator program culminated in the announcement of a winning team that was offered investment and created a competitive environment. Therefore, there was both a communal feeling among entrepreneurs where collaborating and co-operating was the norm as well as a sense of competition and rivalry (Bøllingtoft, 2012). The adoption of the lean startup methodology fostered both effects. On the one hand, it led to entrepreneurs carrying out activities to attract the attention of their coaches. On the other hand, entrepreneurs used coaching sessions based on the lean startup methodology as opportunities to collectively make sense of the methodology. Entrepreneurs attempted to understand the instructions of the methodology through repeated discussion and reflection, both with coaches and other entrepreneurs. This can be interpreted as a process of knowledge internalization (Nonaka et al., 1996) as well as the adoption of certain guiding principles (Argyris and Schön, 1974).

5.2. The dynamics of entrepreneur-coach relationships

Effective relationships between coaches and entrepreneurs and among entrepreneurs are conditioned by the process of their initiation: formally, under a pre-established structure as part of an initiative (e.g., an accelerator program), or informally, through personal relationships between coaches and entrepreneurs (Eby and Lockwood, 2005). In the accelerator program, the formation of these relationships was pre-determined by the organizers. That is, entrepreneurs and coaches were paired based on coaches' interests in the business ideas. The initial dynamics of the relationships were impacted directly by the introduction of the lean startup methodology. This was a natural outcome of the methodology defining and dictating the structure and content of the coaching sessions.

The effectiveness of these entrepreneur-coach relationships is largely dependent on an environment of trust and closeness. Trust has been identified as a precondition for channeling coaches' expertise to support entrepreneurs' learning in a systematic way (Rymer, 2002). The methodology directs coaches' conversations in the coaching sessions and aligns their expectations with the perceived expectations of entrepreneurs. This provides a common starting point for discussions, highlights coaches' skills in relation to the lean startup methodology and leads to a sense of mutual trust (Audet and Couetret, 2012). By posing questions that allow entrepreneurs to openly discuss their progress, be proud of their progress, and ask for help in domains where they lack experience and expertise, coaches can create trust without seeming incompetent.

Trust helps to form the pretext to learning from the coaching sessions, namely, acknowledging a lack of experience and expertise related to specific tasks and the skills necessary to perform the expected activities. This signals the need for learning and acquiring new

knowledge, creating closer relationships between entrepreneurs and their coaches (Kutzhanova et al., 2009). It also encourages honest interactions with the coaches. Entrepreneurs' initial and continued commitment to fruitful relationships with their coaches and their willingness to change their behavior and actions are critical to the quality of interactions (Audet and Couteret, 2012; Peterson and Millier, 2005). Sustained trust between entrepreneurs and their coaches increases the likelihood of adopting the structures put in place by the coaches.

Previous studies note that coaches should adopt the role of providing the necessary structure for entrepreneurs (Ragins et al., 2016). In the case of the studied accelerator program, the coaches employed the structure of the lean startup methodology, offering shared mental models and additional points of departure. The methodology facilitates interactions and conversations between entrepreneurs and their coaches. By coupling this with inspirational seminars, coaches created legitimacy for the lean startup methodology as the structuring framework. Inherent in its logic, the methodology encourages flexibility and openness to change, resulting in a space where entrepreneurs are more likely to change their behavior, attitude, knowledge base, and to adopt new tools. The current approach resembles an evolutionary coaching strategy aimed at transforming and developing entrepreneurs by inducing fundamental changes to their established assumptions (Brockbank and McGill, 2006). This contrasts with business plan-driven coaching, which tends to be more functional in style.

It has been suggested that coaches' expertise has a direct impact on the outcomes of their coaching activities (Spence and Grant, 2007; Sue-Chan and Latham, 2004). Coaches' advocating for the lean startup methodology contributes to their perceived experience and expertise. Entrepreneurs' perceptions of coaches' expertise are important to the coaches' legitimacy. However, other characteristics of coaches, such as their familiarity with the subject area and previous experience in coaching, too, influence their legitimacy and the entrepreneur-coach relationships. Hence, the lean startup methodology coupled with the coaches' expertise influence entrepreneur-coach relationships in spite of our results showing that expertise is valued more highly than the methodology.

5.3. Paradox of data versus authority

An interesting and important finding relates to the role of authority during the coaching sessions and in the entrepreneur-coach relationships. Contrary to the ideas of the lean startup methodology, the coaches were not perceived as neutral facilitators, guiding entrepreneurs in following the instructions. Owing to the design of the accelerator program—having three phases and one round of qualification at the end of the second phase—the coaches were not seen as facilitators of skill development, but rather as authority figures whose opinions were often valued more highly than the data. This is in stark contrast to the foundation of the lean startup methodology that the data collected through interactions with potential customers have primacy over prior or outdated knowledge and experience (Blank and Dorf, 2012; Ries, 2011). Coaches' expertise in terms of business development should only matter as a way to create a sense of legitimacy. This leads to a paradoxical situation: coaching may be detrimental to the adoption and execution of the lean startup methodology.

To overcome this paradox, coaches would benefit from being aware of their style of advising and how they seek to transform entrepreneurs and should be less concerned about their legitimacy and instructive capabilities. Here, they can instead focus on encouraging team members to speak to one another and engage in learning (Harms, 2015). At the same time, coaches should generate a base-level legitimacy to be able to inspire action and elicit trust from entrepreneurs and to convince them to adhere to the lean startup methodology. This highlights the importance of early and clear communication by coaches as facilitators of skill development in the lean startup methodology and of a process of consultation (Schein, 1987). This may require a clear division

of labor between those involved in selecting the teams and those acting as coaches. Note that the structure of the accelerator program provides an environment that elevates the importance of coaches as authority figures, thus undermining the validity and significance of the empirical evidence collected by entrepreneurs.

5.4. Vicarious learning as part of the coaching sessions

The structure of the coaching sessions created a space for vicarious learning. Because peer learning is an important goal and outcome of coaching sessions, entrepreneurs are enabled to bypass experience by listening to other's experiences. In this way, entrepreneurs can decrease the economic and psychological cost of trial and error while benefiting from second-hand experiences. Vicarious learning, represented by listening and reflective thinking (Nehls, 1995), is largely conditioned by the values individuals associate with the outcome of the modeled experiences (Gioia and Manz, 1985). Some of the modeled behaviors were communicated to them by coaches and others by entrepreneurs. As a faster method than direct experience, these learning episodes create a larger knowledge base among entrepreneurs and affect their interpersonal relationships with other entrepreneurs. The introduction of the lean startup methodology and its influence on the structure of the coaching sessions had a direct impact on the progression of vicarious learning episodes.

A factor that fosters vicarious learning is the acknowledgement that others can provide insights from their own experiences that are perceived as applicable to individuals' own cases (Ellis et al., 2004). This is linked directly to the notions of legitimacy and authority and how they are signaled successfully early on or are acquired in a relationship (Clegg et al., 2007). These notions become especially relevant when the ideas communicated from a position of authority and legitimacy are treated as truth and, therefore, not subject to scrutiny and interpretation (Harden, 2000). This suggests that building trust and legitimacy rather than authority is important to facilitating vicarious learning in these settings. In other words, there is value in giving prominence to and encouraging interactions between entrepreneurs to cultivate such learning.

In line with the vicarious learning taking place as part of the coaching sessions, inspirational seminars can play an important role because they function as legitimizers of the lean startup methodology. In the studied accelerator, most of the speakers explicitly endorsed the lean startup methodology and were viewed by the entrepreneurs as legitimate figures who were well-versed in terms of the methodology's core ideas. This created a space that helped entrepreneurs to learn vicariously from these speakers, whose success they associated with the methodology, encouraging them to act in accordance with the methodology's instructions.

5.5. Implications for theory

The lean startup methodology has gained broad acceptance in the startup community in a relatively short period (Fredriksen and Brem, 2017). However, there is a lack of evidence on the effectiveness of the methodology. There is also little knowledge about the role of entrepreneurial coaching in accelerators driven by the lean startup methodology. The main implications for theory from this study are around the lean startup methodology used in accelerators, namely: 1) its behavior-changing effects, 2) its trust-building qualities, 3) its limitations, and 4) its potential to open a new conversation into the pragmatic role of entrepreneurial methods in entrepreneurial coaching practices.

First, lean startup methodology used by coaches in an accelerator has notable effects both on entrepreneur-coach relationships and on vicarious learning among entrepreneurs. The transformative effects captured in the current study do not stem only from coaching or accelerator context alone but also from the introduction of the lean

startup methodology by coaches as an organizing framework. This is an effect beyond entrepreneurs cultivating strong ties and creating common identity, previously identified in accelerator programs (Bruneel et al., 2012). The lean startup methodology helps to structure entrepreneur-coach interactions, as well as, provides an environment with plenty of opportunities for vicarious learning among entrepreneurs.

Second, trust is a precondition for entrepreneurs to learn in a systematic way as previously found (Rymer, 2002). Moreover, How trust is built matters greatly. Trust instilled through the lean startup methodology as an organizing framework differs from the traditional way coaches have gained trust by using authority, previous success, and personal experiences and position. The latter arguably results in a functional business planning focused coaching style, whereas the lean startup methodology in the current study enabled an evolutionary coaching style transforming and developing entrepreneurs by inducing fundamental changes to their established assumptions (Argyris and Schön, 1974).

Paying attention to microlevel interactions between accelerator coaches, their practices and entrepreneurs, thus, provides additional richness to our understanding of the relationship between the accelerator environment and entrepreneurial performance (Soetanto and Jack, 2016; Van Weele et al., 2017). Our study suggests that the introduction of the lean start up methodology in accelerators changes the authority of coaches, possibly rendering them less assertive. While this enabled a more evolutionary coaching style, it also indicates that coaching theory in the context of accelerators need to deal with the dilemma between authority, expertise and assertiveness, on the one hand, and method-orientation on the other hand.

Third, there are a number of caveats in relation to the context of use for the lean startup methodology. All the entrepreneurs examined here were working on ideas where interaction with customers was key. This is in line with the lean startup methodology holding the customer as a main authority. However, ventures with lower levels of technological readiness (e.g., bioengineering or material sciences) might benefit from other methods than the likes of the lean startup methodology (Harms et al., 2015). Also, coaches in more specialized accelerators could take a larger role in offering networks for the benefit of their clients, as suggested by Baraldi and Ingemansson-Havenvid (2016) within medical sciences, rather than asking entrepreneurs to take on all such network building activities. Nevertheless, prescriptive entrepreneurial methods (Mansoori, 2018) such as the lean startup methodology, can play an important role in changing the relationship between the entrepreneurs and their coaches from functionalist and engagement to evolutionary.

And fourth, entrepreneurial methods can be seen as vehicles for making coaches into agents of behavioral modifications rather than the de facto bearers of context dependent knowledge (Grant, 2006). Assumption-changing behavior of entrepreneurs by coaches has previously not been anticipated in research nor in the lean startup methodology itself. Research on entrepreneurial coaching, accelerators, and the broader entrepreneurship would benefit from more investigation of applied entrepreneurial methods. It should also strive to improve entrepreneurial methods and devise novel ones that not only can illuminate the path for entrepreneurs but also help enrich the entrepreneur-coach relationships and by proxy benefit startup accelerators.

Hence, this study opens a new conversation into the pragmatic role of entrepreneurial methods in understanding the dynamics of entrepreneurial coaching. Entrepreneurial methods can be seen not only as tools to organize entrepreneurial activities but also as boundary objects (Koskinen, 2005) facilitating the transition of coaches from authoritarian know-it-all to enablers of behavioral changes in entrepreneurs (Parsloe and Leedham, 2009). That is, entrepreneurial methods can act as vehicles of change in entrepreneurial behavior, from traditional planning approaches to more experimental and experiential styles. This brings to the forefront the need for more thorough investigation of the role of entrepreneurial methods on entrepreneurial

outcomes (Mansoori, 2018). A question that remains is whether the lean startup methodology can act in similar ways in the daily practice of entrepreneurs as in formalized and cohort-based context of accelerators.

5.6. Implications for practice

This study highlights the importance of the role of coaches and the challenges in the design of accelerator programs based on the lean startup methodology. When structuring activities, accelerators have traditionally focused on a combination of theories on business planning and on the experience of coaches. Coaches' experience is an important factor in entrepreneur-coach relationships because they are regarded as experts and their experience is considered as instruction for further action. However, including the lean startup methodology introduces challenges into the design of such programs and the role played by coaches. Therefore, it may be necessary to reconsider the role of coaches in these programs. Coaches need to consider a process of consultation that is empowered by avoiding the pitfalls of exercising expert authority (Schein, 1987).

A possible way forward may be to regard coaches more as facilitators of knowledge accumulation and skill development than authority figures with extensive experience. Coaches should then limit their authoritative advice to suggestions and options (Hytti and O'Gorman, 2004) and allow entrepreneurs to drive their processes. Therefore, they should aim to formulate their advice and opinions as hypotheses subject to validation rather than as facts based on past experiences. Moreover, there may be benefits in dividing the functions of coaches and organizers. In the studied accelerator program, the fact that the coaches were also the organizers led to some entrepreneurs valuing their coaches' experience more highly than the data they collected from potential customers. This contradicts the basics of the lean startup methodology and creates confusion for entrepreneurs. Thus, there is a need to rethink the design of accelerator programs to provide a space that negates cognitive biases such as anchoring and confirmation biases (Kahneman, 2011).

6. Conclusion

This study examines the dynamics of entrepreneur-coach relationships in a university-based accelerator in Sweden based on the lean startup methodology. The main result is that entrepreneur-coach relationships are directly impacted by the introduction of the lean startup methodology because the methodology defines and dictates the structure and content of the coaching sessions and, thus, provides a common starting point for discussions. The methodology instills trust, encourages honest interactions with coaches, and increases participants' willingness to change their behavior. Thus, it contributes to an evolutionary coaching strategy aimed at transforming and developing entrepreneurs. This finding contrasts with business plan-driven coaching, which tends to be more functional in style. Contrary to the ideas of the lean startup methodology, the coaches were not perceived as neutral facilitators, guiding entrepreneurs in following the methodology. Rather, they were seen as authority figures whose opinions were often valued more highly than the data. The structure of the coaching sessions created a space for vicarious learning episodes. As a faster method than direct experience, these episodes contribute to a larger knowledge base among entrepreneurs and impact their interpersonal relationships.

Future research should investigate how the coaching style and organization of accelerators affect the paradox of coaches being too authoritative in relation to entrepreneurs, potentially hampering the entrepreneurs' hypothesis-generation and testing efforts. In addition, the legitimacy of the methodology might be challenged by the nature of the ventures being accelerated. Future research should investigate how well the methodology suits ventures that have lower technology readiness levels and other characteristics that affect the heterogeneity of the

accelerator program. Furthermore, focusing on the relationship between novices and seniority in coaching when using the methodology could be a promising avenue for future research. Finally, this study focused on entrepreneur-coach relationships while indicating the importance of team learning and other forms of peer learning within an accelerator. Future research should consider how such vicarious and experiential learning are affected by the lean startup methodology and other entrepreneurial methods.

References

- Aas, M., Vavik, M., 2015. Group coaching: a new way of constructing leadership identity? *Sch. Leadersh. Manag.* 35, 251–265.
- Adomdza, G., 2014. Choosing between a student-run and professionally managed venture accelerator. *Entrep. Theory Pract.* 40, 943–956.
- Aldrich, H., Baker, T., 1997. Blinded by the cites? Has there been progress in entrepreneurship research? In: Sexton, D., Smilor, R. (Eds.), *Entrepreneurship 2000*. Upstart Publishing Company, Chicago, IL, pp. 377–400.
- Argyris, C., Schön, D.A., 1974. *Theory in Practice: Increasing Professional Effectiveness*. Jossey-Bass, San Francisco, CA.
- Audet, J., Couteret, P., 2012. Coaching the entrepreneur: features and success factors. *J. Small Bus. Entrep. Dev.* 19, 515–531.
- Bachkirova, T., Cox, E., Clutterbuck, D., 2014. Introduction. In: Cox, E., Bachkirova, T., Clutterbuck, D. (Eds.), *The Complete Handbook of Coaching*. Sage, London, pp. 1–20.
- Baraldi, E., Ingemansson-Havenvid, M., 2016. Identifying new dimensions of business incubation: a multi-level analysis of Karolinska Institute's incubation system. *Technovation* 50, 53–68.
- Berggren, E., 2011. The entrepreneurial university's influence on commercialization of academic research—the illustrative case of Chalmers University of Technology. *Int. J. Entrep. Small Bus.* 12, 429–444.
- Blank, S., 2006. *The Four Steps to the Epiphany*. Cafepress, San Francisco, CA.
- Blank, S., Dorf, B., 2012. *The Startup Owner's Manual: The Step-by-Step Guide for Building a Great Company*. K&S Ranch, Incorporated, San Francisco, CA.
- Bøllingtoft, A., 2012. The bottom-up business incubator: leverage to networking and cooperation practices in a self-generated, entrepreneurial-enabled environment. *Technovation* 32, 304–315.
- Britton, J., 2010. *Effective Group Coaching: Tried and Tested Tools and Resources for Optimum Coaching results*. John Wiley & Sons, Ontario, Canada.
- Brockbank, A., 2008. Is the coaching fit for purpose? A typology of coaching and learning approaches. *Coach. Int. J. Theory, Res. Pract.* 1, 132–144.
- Brockbank, A., McGill, I., 2006. *Facilitating Reflective Learning Through Mentoring and Coaching*. Kogan Page Publishers, London, United Kingdom.
- Brown, T., 2008. Design thinking. *Harvard Business Review* 86, 84–92.
- Bruneel, J., Ratinho, T., Clarysse, B., Groen, A., 2012. The evolution of business incubators: comparing demand and supply of business incubation services across different incubator generations. *Technovation* 32, 110–121.
- Christiansen, J., 2009. Copying Y Combinator, A Framework for Developing Seed Accelerator Programs (MBA dissertation). University of Cambridge, United Kingdom.
- Clarysse, B., Bruneel, J., 2007. Nurturing and growing innovative start-ups: the role of policy as integrator. *R&D Manag.* 37, 139–149.
- Clegg, S., Rhodes, C., Kornberger, M., 2007. Desperately seeking legitimacy: organizational identity and emerging industries. *Organ. Stud.* 28, 495–513.
- Cohen, S., Hochberg, Y., 2014. Accelerating startups: the seed accelerator phenomenon. *SSRN Electron. J.* 1–16.
- Cooper, C., Hamel, S., Connaughton, S., 2012. Motivations and obstacles to networking in a university business incubator. *J. Technol. Transf.* 37, 433–453.
- Cox, E., 2013. *Coaching Understood*. SAGE Publications Limited, London, United Kingdom.
- Cox, E., Bachkirova, T., Clutterbuck, D., 2014. Theoretical traditions and coaching genres: mapping the territory. *Adv. Dev. Hum. Resour.* 16, 1–22.
- Davidsson, P., Honig, B., 2003. The role of social and human capital among nascent entrepreneurs. *J. Bus. Ventur.* 18, 301–331.
- Davila, A., Foster, G., Jia, N., 2010. Building sustainable high-growth startup companies: management systems as an accelerator. *Calif. Manag. Rev.* 52, 79–105.
- Dybå, T., Dingsøyr, T., 2008. Empirical studies of agile software development: a systematic review. *Inform. Softw. Technol.* 50, 833–859.
- Eby, L., Lockwood, A., 2005. Proteges' and mentors' reactions to participating in formal mentoring programs: a qualitative investigation. *J. Vocat. Behav.* 67, 441–458.
- Ellis, R., Calvo, R., Levy, D., Tan, K., 2004. Learning through discussions. *High. Educ. Res. Dev.* 23, 73–93.
- Flaherty, J., 2005. *Coaching: Evoking Excellence in Others*. Butterworth-Heinemann, Oxford, United Kingdom.
- Fredriksen, D.L., Brem, A., 2017. How do entrepreneurs think they create value? A scientific reflection of Eric Ries' lean Startup approach. *Int. Entrep. Manag. J.* 13, 169–189.
- Gioia, D., Manz, C., 1985. Linking cognition and behavior: a script processing interpretation of vicarious learning. *Acad. Manag. Rev.* 10, 527–539.
- Grant, A., 2006. A personal perspective on professional coaching and the development of coaching psychology. *Int. Coach. Psychol. Rev.* 1, 12–22.
- Harden, J., 2000. Language, discourse and the chronotope: applying literary theory to the narratives in health care. *J. Adv. Nurs.* 31, 506–512.
- Hargrove, R., 2000. *Masterful Coaching Fieldbook*. Jossey-Bass, San Francisco, CA.
- Harms, R., 2015. Self-regulated learning, team learning and project performance in entrepreneurship education: learning in a lean startup environment. *Technol. Forecast. Social. Change* 100, 21–28.
- Harms, R., Marinakis, Y., Walsh, S.T., 2015. The lean startup for materials ventures and other science-based ventures: under what conditions is it useful? *Transl. Mater. Res.* 2, 1–8.
- Hochberg, Y.V., 2015. Accelerating entrepreneurs and ecosystems: the seed accelerator. *Innov. Policy Econ.* 16, 25–51.
- Hytti, U., O'Gorman, C., 2004. What is “enterprise education”? An analysis of the objectives and methods of enterprise education programs in four European Countries. *Educ. + Train.* 46, 11–23.
- Jacob, M., Lundqvist, M., Hellsmark, H., 2003. Entrepreneurial transformations in the Swedish university system: the case of Chalmers University of Technology. *Res. Policy* 32, 1555–1568.
- Kahneman, D., 2011. *Thinking, Fast and Slow*. Macmillan, New York, NY.
- Koskinen, K.U., 2005. Metaphoric boundary objects as coordinating mechanisms in the knowledge sharing of innovation processes. *Eur. J. Innov. Manag.* 8, 323–335.
- Kutzhanova, N., Lyons, T.S., Lichtenstein, G.A., 2009. Skill-based development of entrepreneurs and the role of personal and peer group coaching in enterprise development. *Econ. Dev. Q.* 23, 193–210.
- Ladd, T., Lyytinen, K., Gemmell, R., 2015. How customer interaction and experimentation advance new venture concepts in a cleantech accelerator. *Acad. Manag. Proc.* 1–37.
- Lundqvist, M., 2014. The importance of surrogate entrepreneurship for incubated Swedish technology ventures. *Technovation* 34, 93–100.
- Lundqvist, M., Williams-Middleton, K., 2008. Sustainable wealth creation beyond shareholder value. In: Wankel, C., Stoner, J. (Eds.), *Innovative Approaches to Global Sustainability*. Palgrave MacMillan, New York, NY, pp. 39–62.
- Lynn, G., Morone, G., Paulson, A., 1996. Marketing and Discontinuous Innovation: the probe and learn process. *Calif. Manag. Rev.* 38, 8–38.
- Mansoori, Y., 2018. *Entrepreneurial Methods as Vehicles of Entrepreneurial Action* (Doctoral dissertation). Chalmers University of Technology, Gothenburg, Sweden.
- Martinez, M., Yang, T., Aldrich, H., 2011. Entrepreneurship as an evolutionary process: research progress and challenges. *Entrep. Res. J.* 1 (Article 4).
- Maurya, A., 2012. *Running Lean: Iterate from Plan A to a Plan that Works*. O'Reilly Media, Sebastopol, CA.
- McAdam, M., Miller, K., McAdam, R., 2016. Situated regional university incubation: a multi-level stakeholder perspective. *Technovation* 50, 69–78.
- McGrath, R., MacMillan, I., 2000. *The Entrepreneurial Mindset: strategies for Continuously Creating Opportunity in an Age of Uncertainty*. Harvard Business Press, Cambridge, MA.
- Mian, S., Lamine, W., Fayolle, A., 2016. Technology business incubation: an overview of the state of knowledge. *Technovation* 50–51, 1–12.
- Miles, M., Huberman, A., 1984. Drawing valid meaning from qualitative data. *Educ. Res.* 15, 20–30.
- Nehls, N., 1995. Narrative pedagogy: rethinking nursing education. *J. Nurs. Educ.* 34, 204–210.
- Nonaka, L., Takeuchi, H., Umemoto, K., 1996. A theory of organizational knowledge creation. *Int. J. Technol. Manag.* 11, 833–845.
- O'Brien, A., Palmer, S., 2009. Co-creating an optimal coaching alliance: a cognitive behavioural coaching perspective. *Int. Coach. Psychol. Rev.* 4, 184–194.
- Ollila, S., Williams-Middleton, K., 2011. The venture creation approach: integrating entrepreneurial education and incubation at the university. *Int. J. Entrep. Innov. Manag.* 13, 161–178.
- Osterwalder, A., Pigneur, Y., Tucci, C., 2005. Clarifying business models: origins, present, and future of the concept. *Commun. Assoc. Inform. Syst.* 15, 1–38.
- Parsloe, E., 1999. *The Manager as Coach and Mentor*, second ed. CIPD Publishing, London, United Kingdom.
- Parsloe, E., Leedham, M., 2009. *Coaching and Mentoring: Practical Conversations to Improve Learning*. Kogan Page Publishers, London, UK.
- Pauwels, C., Clarysse, B., Wright, M., Van Hove, J., 2016. Understanding a new generation incubation model: the accelerator. *Technovation* 50–51, 13–24.
- Peterson, D., Millier, J., 2005. The alchemy of coaching: “you're good, Jennifer, but you could be really good.”. *Consult. Psychol. J.: Pract. Res.* 57, 14–40.
- Ragins, B., Cotton, J., Miller, J., 2016. Marginal mentoring: the effects of type of mentor, quality of relationship, and program design on work and career attitudes. *Acad. Manag.* 43, 1177–1194.
- Read, S., Sarasvathy, S.D., 2005. Knowing what to do and doing what you know: effectuation as a form of entrepreneurial expertise. *J. Priv. Equity* 9, 45–62.
- Ries, E., 2011. *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. Random House Digital, Inc., New York, NY.
- Rymer, J., 2002. “Only connect”: transforming ourselves and our discipline through co-mentoring. *J. Bus. Commun.* 39, 342–363.
- Schein, E., 1987. *Process Consultation: Lessons for Managers and Consultants*. Addison-Wesley OD Series, Reading, MA.
- Soetanto, D., Jack, S., 2016. The impact of university-based incubation support on the innovation strategy of academic spin-offs. *Technovation* 50, 25–40.
- Spence, G., Grant, A., 2007. Professional and peer life coaching and the enhancement of

- goal striving and well-being: an exploratory study. *J. Posit. Psychol.* 2, 185–194.
- Strauss, A., Corbin, J., 1998. *Basics of Qualitative Research: Procedures and Techniques for Developing Grounded Theory*. SAGE Publications, Thousand Oaks, CA.
- Sue-Chan, C., Latham, G., 2004. The relative effectiveness of external, peer, and self-coaches. *Appl. Psychol.* 53, 260–278.
- Sull, D., 2004. Disciplined entrepreneurship. *MIT Sloan Manag. Rev.* 46, 71–77.
- Van Weele, M., Van Rijnsoever, F., Eveleens, C., 2015. Start-EU-up! International incubation practices to overcome the main challenges of the Western European entrepreneurial ecosystem, In: DRUID15 Rome – The Relevance of Innovation.
- Van Weele, M., van Rijnsoever, F.J., Nauta, F., 2017. You can't always get what you want: How entrepreneur's perceived resource needs affect the incubator's assertiveness. *Technovation* 59, 18–33.
- Vaughan, D., 2009. Analytic ethnography. In: *The Oxford Handbook of Analytical Sociology*, pp. 688–711.
- Whitmore, J., 1992. *Coaching for Performance*. Nicholas Brealey, London, United Kingdom.
- Wise, S., Valliere, D., 2014. The impact on management experience on the performance of start-ups within accelerators. *J. Private Equity* 9–19.
- Wright, M., 2007. *Academic Entrepreneurship in Europe*. Edward Elgar Publishing, Cheltenham, United Kingdom.
- York, J., Danes, J., 2014. Customer development, innovation, and decision-making biases in lean startup. *J. Small Bus. Strategy* 24, 21–39.