Lean Startup Methodology: A Venture Capitalist's Perspective

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ABSTRACT,
Recent macro-economic developments have led experts to argue that nowadays Lean Startup Methodology (LSM) has lost its value. This research focusses on how Dutch early stage venture capitalists value the method as a means to getting a startup ready for them to invest in. Derived from literature, it identifies five categories of investment criteria that are used to explain the investment decision. 11 semi-structured interviews were conducted with these venture capitalists to collect data about the possible relationship between these categories and LSM. These data were analyzed using a grounded theory approach to find out how LSM contributes to the willingness to invest. Findings suggest that when given positive product and market characteristics, an early stage venture capitalist might be more likely to invest when these are developed by using LSM. However, it is found that the right use of LSM is perceived to be determined by the personality of the entrepreneur. When used wrong, over-experimentation might occur, which might ultimately decrease the willingness to invest.

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Lean Startup Methodology, venture capital, investment criteria, early stage, business development, entrepreneurship

1. INTRODUCTION

1.1 Background on rationale

Starting a new venture is a capital-intensive process. In the beginning phases of a startup, friends and family are often first asked for capital to start up the business (Kotha & George, 2012). Later on, either when initial product development requires a lot more effort, or when the business is starting to scale, more capital is required. Since financing in this early stage of a startup comes with high risks, traditional capital suppliers, e.g. banks, are often unwilling to supply financial capital (Ueda, 2014).

Venture capitalists have a different approach in making investment decisions, as they use equity investments. Through acquiring equity in a company instead of loaning money, this high risk offers high reward potential when the startup is successful (Manigart et al., 2002; Tyebjee & Bruno, 1984). Another difference with traditional capital providers is the fact that venture capitalists often offer more to startups than just financial capital. In many cases, venture capitalists bring extensive managerial and business growth expertise to the startup and sometimes take on an active role within the startup. Furthermore, they have influential networks in industries that can provide both customers and human resources for the startup. Therefore, the money that venture capitalists invest in startups is often referred to as 'smart money' (Hellmann & Puri, 2000).

However, the fact that these investors are willing to run the risk in this early stage, does not make acquiring an investment from them an easy task. It was found that only two percent of the startups looking for an investment, actually got funded (Fried & Hisrich, 1994). To evaluate whether an investment proposal is worth investing in, investors use investment criteria. These criteria reflect characteristics of the startup and general details of the deal. To meet these criteria, entrepreneurs must develop the business to a certain stage or have a clear strategy on how to get there (Mensink, 2010).

There are multiple methodologies to do so. The Lean Startup Methodology (LSM), as popularized by Ries (2011), is such a method. The methodology starts by translating the vision of the entrepreneur into falsifiable hypotheses that are tested first qualitatively and then quantitatively (Maurya, 2012). This research will show what problems customers face and based on that, startups can develop minimum viable products and iteratively improve this product based on customer feedback. As a consequence, market, product and customer uncertainty is aimed to decrease (Maurya, 2012). The risk reducing aspects of LSM make it interesting to research how an early stage investor perceives the use of this method related to their investment criteria.

Recent articles regarding the use of LSM showcase conflicting views. One of the founding fathers of the methodology, Steve Blank, argued "Lean for startups seems like some quaint notion of a bygone era" (2018, p. 4), referring to the importance of the first mover advantage over being able to first prove a demand and then iteratively develop your product. On the other hand, seed funds in the Netherlands are lacking good deal flow, as most of them are behind on their investment goals (Mensink, 2018). This situation asks for a methodology, like LSM, that allows startups to grow to the point of scaling, when venture capitalists are interested to invest (Maurya, 2012).

1.2 Research objective

With the stage for LSM in venture capital set, this research's objective is to examine an early stage investor's opinion on the usefulness of Lean Startup Methodology. While there are other capital providers in the early stages of a startup, this research focusses on venture capitalists for reasons mentioned in Section 2.2.1. This leads to the following main research question.

RQ: *"How can the use of Lean Startup Methodology contribute to the willingness of an early stage venture capitalist to invest?"*

It is assumed that the perceived usefulness will be connected to venture capital investment criteria, as they were found to explain the decision-making process of a venture capitalist best (Hall & Hofer, 1993). Therefore, the first objective of this research is to find what investment criteria early stage venture capitalists use.

RQ_1: *"What investment criteria are used by early stage venture capitalists?"*

Together with criteria that are derived from articles and the interviews, these criteria are then used as items for the topic list for the semi-structured interviews with venture capitalists. A grounded theory approach (Boeije, 2009) will then be used in order to provide arguments for answering the following question and consequently the main research question.

RQ_2: "*What is the relationship between using Lean Startup Methodology, the investment criteria and the venture capitalist's willingness to invest?"*

2. THEORETICAL FRAMEWORK

2.1 Lean Startup Methodology

2.1.1 The methodology

The Lean Startup Methodology (LSM) is a customer centric business development methodology, based on validated learning and iterative product releases (Ries, 2011). This means that the vision of an entrepreneur is converted into falsifiable hypotheses to validate the customer needs, to decrease the chances of developing possible unnecessary additions, in order to ultimately achieve product-market fit (Maurya, 2012). It builds on Lean principles that are used in other industries, for example to define customer value and decrease waste (Bicheno & Holweg, 2000).

The validation process of LSM has first been described in the customer development model of Blank (2003). Later on, Ries (2011) has further developed the method into the iterative Build-Measure-Learn loop (Figure 1). Together with the business model canvas of Osterwalder and Pigneur (2010), this formed the basis of Lean Startup Methodology.

Maurya (2012) built on these principles and developed the Lean Canvas (Figure 2). The different business units in this canvas are regarded as hypotheses that need to be tested. First qualitatively, with customer interviews, then quantitatively, in order to ultimately prevent waste. Using the same Build-Measure-Learn loop of Ries (2011), Maurya (2012) describes three stages in a startup.

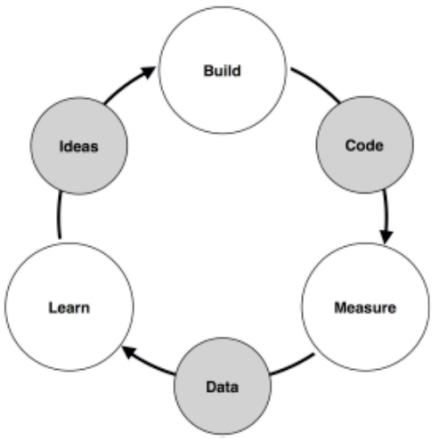

Figure 1. Build-Measure-Learn loop (Ries, 2011)

The first stage is obtaining problem/solution fit. In this stage, the entrepreneur tests if there is a pain to be solved, who has that pain and is willing to pay for it, and if the problem is solvable (Maurya, 2012). The answers to these questions will form the feature set for a minimum viable product (MVP): "that version of the product that enables a full turn of the build-measure-learn loop with minimum amount of effort" (Ries, 2011, p. 77).

This MVP is then used to validate whether the entrepreneur has built something that people actually want and how well it solves the customer's problem. Again, by validating both qualitatively and quantitatively with customers, the startup achieves product-market fit (Ries, 2011; Maurya, 2012). This first point of market traction is often the stage when investors are likely to invest (Maurya, 2012). After product-market fit, the MVP is expanded with additional features, using the same iterative approach of the Build-Measure-Learn loop (Figure 1).

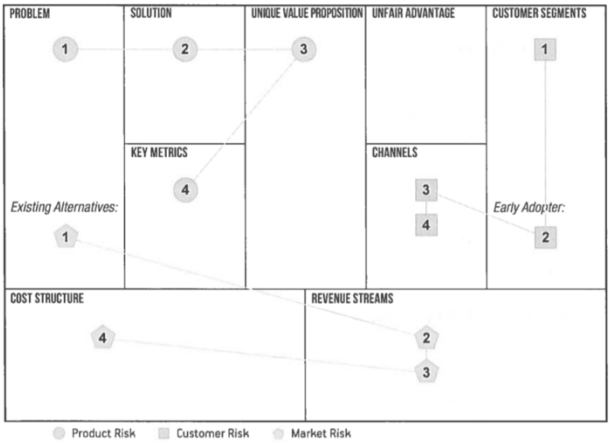

Figure 2. Lean Canvas (Maurya, 2012)

While simultaneously testing the hypotheses regarding the various elements of the Lean Canvas (Figure 2), the Lean Startup Methodology systematically reduces risk of the entrepreneurial venture in the product, customer, and market area. (Maurya, 2012). These systematic procedures of reducing risk is what might make this methodology interesting for venture capitalists.

2.1.2 Limitations of LSM

Lean Startup Methodology is often used in the software industry (Blank, 2018), as software products can be released and altered without substantial costs, enabling small iterations. Recent studies have shown that the methodology is limited in some industries due to substantial development costs or difficulty in validating with potential customers. An example of such research is a study of Harms, Marinakis and Walsh (2015), arguing that LSM is a helpful methodology to reduce market uncertainty and is best used when technology uncertainty is low (Figure 3). This research helped with interpreting the answers that venture capitalists gave during the interviews.

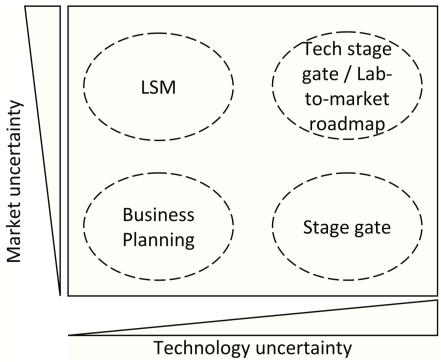

Figure 3. Combinations of market and technology uncertainty (Harms et al., 2015)

Although the hypothesis driven approach might decrease risk over multiple areas (Maurya, 2012), research found that validating more hypotheses does not directly lead to a more successful venture (Ladd, 2015). Furthermore, an inverse U-shaped relationship might exist between the amount of experimenting and a venture's success (Ladd, 2015). Ladd (2015) argues that this relationship might be explained by the erosion of self-efficacy due to too much negative customer feedback. Consequently, low self-efficacy was found to have a negative moderating effect on the relationship between improvisational behavior and new venture performance (Hmieleski & Corbett, 2008). This phenomenon was researched from the perspective of the entrepreneur but might also be relevant for LSM from a venture capitalist's perspective, as decreased performance increases the risk of an investment and therefore might impact the venture capitalist's willingness to invest in the startup.

2.2 Early stage investment criteria

2.2.1 Early stage investors

Many different parties offer financing, though, as described in Section 1, not all these parties are willing to run the risk that accompanies early stage investments. In this research, we define 'early stage' as both the seed phase and early stage up to the Series A investment round (Murray & Lott, 1995). This early stage is also called the 'Valley of Death', for little revenue and certainly no profits are made, as development costs are substantial. It is the riskiest time to invest in a startup, as it has little to no empirical evidence that the startup will succeed (Murray & Lott, 1995). Typical significant investors in this stage are business angels and venture capitalists (Mason & Harrison, 2004b). In the Netherlands, a special fund has been raised by the Ministry of Economic Affairs to stimulate venture capitalists to invest in this stage (Netherlands Enterprise Agency, 2016).

To define business angels and venture capitalists, we use the definition of Bachher and Guild (1996), stating "Business Angels (BAs) also known as private or informal investors, are

individuals, aside from the entrepreneurs or their family and friends, who invest their own funds in private companies. […] Private Venture Capitalists (PVCs), also known as professional or institutional investors, assume equity or equity-type positions in private companies. On behalf of their professional venture capital companies, they mostly participate along with the management of the companies they invest in, often with the intent of developing the company to the point where an initial public offering (IPO) is possible" (p.2).

It was decided to focus this study on venture capitalists and exclude angel investors from the research scope. Angel investors are found to perform less due diligence and mostly make investment decisions based on gut feeling and the entrepreneur's personality (Mason & Stark, 2004; Sudek, 2006; Van Osnabrugge & Robinson, 2000). In contrast, venture capitalists are found to have a more diverse set of criteria and perform more professional due diligence (Mason & Stark, 2004). This allows for more in-depth conversations about the investment process and is therefore argued to be better able to illustrate where LSM might contribute in this process.

2.2.2 Investment criteria

As startups in the early stage accompany high risk, a thorough evaluation process precedes any investment being made by a venture capitalist. This evaluation process is so thorough that only two percent of the startups that enter a fund's funnel receive an investment (Fried & Hisrich, 1994). In the decision process of making an investment, investment criteria have been the most researched, as they can explain the decision whether to invest or not, best (Hall & Hofer, 1993).

As a result, a substantial amount of research has already taken place in the field of these investment criteria since 1970 (Drover et al., 2017). Though it was found that throughout the years, the criteria did not change much (Westerik, 2014). An overview of all leading research into investment criteria can be found in Appendix A (Zacharakis & Meyer, 2000).

The first contributions to this field of research comes from Tyebjee and Bruno (1984), soon followed up on by one of the most cited works in the field of investment criteria; that of MacMillan et al. (1985)., being one of the first stating the five different main categories in investment criteria that are still used today. More recent studies found additional criteria for these same main categories but differed in weighing the importance of the criteria (Bachher & Guild, 1996; Carter & Van Auken, 1994; Muzyka, Birley & Leleux, 1996).

The most used categories for these criteria are 'Characteristics of the entrepreneur' – consisting of both the personality and experience of the entrepreneur –, 'Characteristics of the product', 'Characteristics of the market' and 'Financial considerations'. Most papers mention that the characteristics of the entrepreneur or team are the most important investment criteria (e.g. Carter & Van Auken, 1994; Hall & Hofer, 1993; Muzyka et al., 1996). MacMillan (1985) even argues that "the quality of the entrepreneur ultimately determines the funding decision" (p. 128).

However, these findings are not specific enough to only be used as background for this study. The research population of most of these studies was either not specific enough or targeted foreign venture capitalists. Without discriminating on stage and industry "a single hierarchy of decision criteria in all cases and across all VCs" (Muzyka et al., 1996, p. 274) can be wrongly assumed. Other research also states that valid models that assess venture capitalists' evaluation of proposals "need to be geared towards a firm's specific criteria (i.e., stage, industry, etc.)" (Zacharakis & Meyer, 2000, p. 343).

While the weight of the criteria was found to differ in the Netherlands and some additional criteria were found, most criteria are also used and valued by Dutch early stage venture capitalists in the ICT industry (Mensink, 2010). It was found that these venture capitalists might even value criteria regarding the characteristics of the product or service more than the entrepreneur's personality, what was thought to be the top-ranking category in other research (Drover et al., 2017).

As there is no other more recent study of investment criteria used by Dutch early stage venture capitalists, to the knowledge of the researcher, the research of Mensink (2010) forms the basis of this research into Lean Startup Methodology. The detailed investment criteria that Mensink (2010) found can be viewed in Appendix B.

This research deliberately chose not to discriminate on industry, as this would limit the already difficult to reach research population, as described in Section 3.2. This would threaten the likeliness of finishing this research in the set timeframe of ten weeks.

2.2.3 Visualization investment criteria categories

Combining these categories in a model visualizes how early stage venture capitalists in the Netherlands make an investment decision. Appendix B contains the detailed criteria corresponding with these categories. This concludes RQ_1: "What investment criteria are used by early stage venture capitalists?" and forms the basis for holding the semi-structured interviews with the venture capitalists.

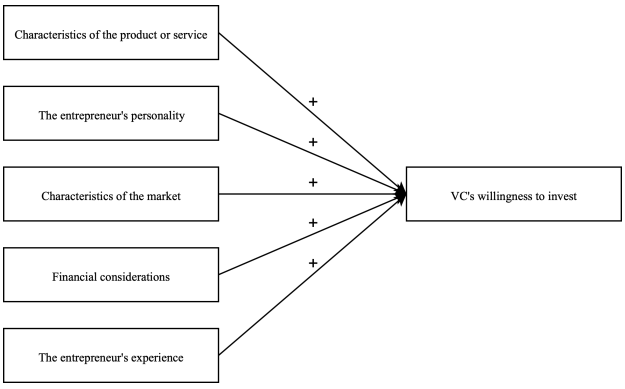

Figure 4. Visualization investment criteria categories

3. METHODOLOGY

3.1 Design

While both the field of investment criteria and LSM have been extensively researched, there has not been a research yet connecting these fields to each other. This research aimed to

explore if a relationship might exist between the fields and make initial discoveries on how LSM plays a role in this relationship, as stated in RQ_2. Both LSM, for Lean is a general term that is used in many other industries (Bicheno & Holweg, 2000), and investment criteria are topics that can have multiple interpretations. For the validity of this research, it was crucial that the same interpretations were used throughout the interviews. Therefore, a qualitative approach to this research was used. Data was gathered via semi-structured interviews, which "typically contains a set of more general questions, but no fixed order in which they are asked" (Bryman & Bell, 2012, p. 467). It allowed participants to express their views and share experiences regarding investment proposals and the use of LSM. Furthermore, it allowed the researcher to ask follow-up questions, which fitted the challenges that rose due to the risk of multiple interpretations.

3.2 Sample

The participants of this study were Dutch venture capitalists that invest in the early stage, as defined in Section 2.2.1. The participants in this study had the function of investment analyst, investment associate, investment manager or partner at their respective funds. An important inclusion criterion was that the participant was involved in the final decision-making process.

These participants were sampled through convenience sampling. The first participants were contacted from the personal network of the researcher and via the contact information on the websites of the Netherlands Enterprise Agency (2018) and an investment analysis website (Golden Egg Check, 2018). As the early stage investment industry is regarded as a closed one in terms of information sharing and venture capitalists often do not have a lot of time available to participate in these studies (Mensink, 2010), a snowballing method was implemented to get a "study sample through referrals made among people who share or know of others who possess some characteristics that are of research interest" (Biernacki & Waldorf, p. 141).

In total, 11 venture capitalists were interviewed, after which a point of information saturation was reached; the point where no new data is being gathered (Boeije, 2009).

3.3 Data collection

3.3.1 Tools

The semi-structured interviews were held via telephone for two reasons. First, it was recommended by various investment managers that a phone interview would be perceived as less time consuming by venture capitalists, therefore increasing the chances of them participating in the research. Second, most early stage venture capitalists in the Netherlands are located in the areas of Amsterdam, Rotterdam and Utrecht, making it difficult to hold face-to-face interviews in the period of time that was available to the researcher, who was located in Enschede. The phone interviews were audio-recorded, after consent was given by the interviewee.

Furthermore, observational, methodological and theoretical memos were kept during the total duration of this research to document and structure possible leads and topics of interest (Boeije, 2009).

3.3.2 Structure

The sourcing of participants started on September 24th. Personal contacts of the researcher were contacted via LinkedIn and cold acquisition was done via phone, when a phone number was available. The goal of this first contact was to plan a phone call for the interview, which was often done via a gatekeeper in the form of a secretary. Before the interview commenced, the participant received an email, containing information on the research objective, an informed consent form and a list of the most used investment criteria (Appendix B).

The 11 interviews took place between October 1st and October 18th of 2018. The spoken language was Dutch, as this was in all cases the native language of the participant, allowing them to more freely express their views. The mean duration of the interviews was 28 minutes.

The topic list of the interview was set up after the literature review of investment criteria. A pre-test of the interview was held with a startup analyst who is an expert in the field of early stage investments and a business angel from the personal network of the researcher. The interview guideline is presented in Appendix C. First, the respondent was asked for his or her view on LSM in general and questioned about any experiences that the venture capitalists had with investment proposals that used this method. Then the investment criteria were used to talk about the relationship that they have on their willingness to invest, and how the use of LSM plays a role in this relationship. Next to the investment criteria of Mensink (2010), the participants were asked about investment criteria that became relevant due to other interviews or recent online articles about LSM as discussed in Section 1.1. Examples of these criteria are 'burn rate', 'first mover advantage' and 'product-market fit'. At the end of the interview the participant was debriefed by thanking him or her for participating in the study, once more stating their rights regarding their participation in the study and giving information on when the final report could be expected.

3.3.3 Ethics

The research proposal was reviewed and approved by the BMS Ethics Committee of the University of Twente before interviews were started. This approval implies that the research is conducted in an ethically sound manner. Participants of the research have received an informed consent form and have all given their consent regarding participating in the study, fully knowing their rights regarding privacy and withdrawal from the study.

3.4 Data analysis

3.4.1 Data preparation

The data that was audio-recorded during the interviews, was first transcribed and consecutively coded and analyzed according to grounded theory, as described by Boeije (2009). The non-verbatim transcriptions of the interviews resulted in 62 pages of text. The anonymity of the participants was protected by using the letters A to K to indicate who responded, corresponding with the order that they were interviewed in. Transcripts were processed in Microsoft Word and no additional software tools were used in either the preparation or analysis stage of the research.

3.4.2 Data analysis

To analyze the data, an adapted version of grounded theory was used (Boeije, 2009; Strauss & Corbin, 2007). In order to transform the data into findings, this method segments and reassembles the data via open, axial, and selective coding. The final coding scheme can be found in Appendix D.

Open coding consisted of "breaking down, examining, comparing, conceptualizing and categorizing data" (Strauss & Corbin, 2007, p. 61). Next to the theoretical concepts derived from the literature of investment criteria, 20 additional codes

have been deducted from the data. In the axial coding stage, using "a set of procedures whereby data are put back together in new ways after open coding, by making connections between categories" (Strauss & Corbin, 2007, p. 96), some codes were merged into comprehensible categories, leading to the main categories presented in the findings section. During the final step, selective coding, which "is aimed at integrating the loose pieces of earlier coding efforts [in order to] make sense of what is happening in to "make sense of what is happening in the field" (Boeije, 2009, p. 114), the categories were linked to each other as presented in the findings section.

Opposed to what is usual in grounded theory (Boeije, 2009), due to time constraints, this research gathered data in one iteration. While the data of the first interviews did influence the questions asked in the later interviews, most of the coding and analysis has taken place after the data was gathered.

4. FINDINGS

The findings of the research have been categorized as follows. First, general findings of the use of LSM are presented. This section highlights general opinions about LSM and sets the stage for the investment criteria. Then, the way that LSM is perceived to relate to these criteria is presented. The findings about the investment criteria are presented in the same categories as found in the literature, with the exception of combining the entrepreneur's personality and the entrepreneur's experience. Finally, a section is dedicated to presenting findings and discussing the limitations of using LSM, as viewed by the participants, which related to their willingness to invest. This section is split in two; first, the type of market where LSM is argued be less applicable, and second, how the wrong use of LSM and experimentation can result in negative contributions to the willingness to invest, which might possibly be explained by an inversed U-shaped relation between experimenting and perceived usefulness, as discussed in Section 2.1.2. Quotes from interviews will be presented in an italic typeface and quotation marks.

4.1 General

Like mentioned in Chapter 1 by Blank (2018), nowadays, USA venture capital funds are more likely to take risks, which could make working Lean more of a limitation than a helpful tool. In the Netherlands this trend has also been identified by investors. *"The rent is low, which makes money relatively cheap. This results in a lot of new funds that need to make their first deals in order to show their shareholders: look we're doing things. This makes a lot of capital available in the market. In turn, you'll see that businesses will adapt their plans and request millions [of euros] without a proof of concept. This could work but brings a lot of risks."* The participants of this study found that there are a lot of startups trying to raise significantly more money than they actually need in the eyes of the investor, which is called overfunding. They were generally not willing to invest in these startups, as the risk would be too big. A reason for this could be that the Dutch culture is more uncertainty avoidant than the USA culture (Hofstede & Bond, 1988).

When looking at the investment criteria that are supposed to evaluate this risk, a participant confirmed that, as found in theory (Westerik, 2014), *"in the last 25 years of venture capital, the criteria haven't changed. The reason for this is that they look for risks, in the end it everything boils down to risk versus reward"*. Next to the finding that investors do still use the investment criteria that were found in literature, it was found that venture capitalists do not use different criteria for a startup that makes use of LSM, compared to a startup that does not use LSM. As it ultimately boils down to a risk versus reward tradeoff, it is perceived by the participants that mitigating risk is where LSM has its value, due to its customer validating and evidence-based approach. In what categories LSM is perceived as most valuable will be discussed in Section 4.2.

When completely no customer validation has taken place, venture capitalists were very hesitant to invest in the startup. Participants shared multiple experiences of companies that started with developing a technology for a couple of years, without focusing on a customer need. The result is that often, after years of investing time and recourses, the startup concludes that it does not have the hypothesized product market fit and it fails. This is one of the reasons why most venture capitalists that participated in this study only invest in startups that have found a form of product market fit or market traction. An interesting finding, as the Netherlands Enterprise Agency (2018) labeled the funds as 'Seed funds', typically a stage where no revenues are made yet, as discussed in Section 2.2.1. As one participant put it: *"Pivoting is always painful and costly. For example, pivoting your pricing model is painful, but is manageable. But pivoting your product market fit is extremely costly. We always want to mitigate that possibility."*

LSM is argued to mitigate this possibility, as discussed in Section 2.1.1, as it provides validated hypotheses that have been tested with customers. While the participants of this study found this very valuable, it is not enough evidence for them to invest. Instead of a predictor of product market fit, validated hypotheses, they want to see a result of it: market traction and revenue. Most of them require real sales, which preferably is returning revenue, as other revenue streams from for example consulting is often not scalable. LSM does not make a distinction in what type of revenue is made and the first type of evidence that the method gathers appears not to be enough to persuade venture capitalists to make an investment.

However, the participants did argue that they expected companies using LSM to get their product faster to the point of market traction, as the customer is involved earlier in the development process, which will be elaborated on in Section 4.2.2. Furthermore, the method is seen as a capital efficient way of getting to product market fit, as the earlier that customers are involved in the development process, the earlier an entrepreneur can conclude that a pivot needs to be made and no additional resources are wasted. However, this experimenting with customers might also have its limitations, as discussed in Section 4.3.2.

Experiences that participants had with investment proposals that used LSM in their eyes differed from entrepreneurs using solely a Lean Canvas (Maurya, 2012) as pitch deck, to entrepreneurs starting out with an MVP and building on from there. The latter was often referred to, as entrepreneurs are likely to start out with very limited resources. They might start a company next to their normal job that leads to limited time, next to having limited financial resources. Therefore, entrepreneurs are forced to develop the right thing the first time and start out small in order to build proof of their product market fit. This was also sometimes viewed as a form of working Lean by the participants. While this type of development is in accordance with the Lean principles (Bicheno & Holweg, 2000), it is not using the methodology Lean Startup, as this entails more than following these principles, as described in Section 2.1.1.

To conclude this section, this research found evidence indicating that ultimately an early stage venture capitalist makes a decision based on a tradeoff between risks of losing the investment and the potential reward of the startup becoming successful. To evaluate both sides, they use certain criteria that will be discussed

in the next section. While Lean Startup Methodology may stimulate the entrepreneur to work capital efficient and to make evidence-based decisions to get to product market fit, validating with customers is likely to not be enough to convince an early stage venture capitalist to invest in the startup. This research found that venture capitalists may require proof in the form of revenue and market traction and care less about the way that an entrepreneur gets there. However, the next section will discuss how the separate categories that build the willingness to invest may relate to the use of LSM by startups that seek an investment.

4.2 Investment criteria

In order to answer RQ_2 "*What is the relationship between using Lean Startup Methodology, the investment criteria and the venture capitalist's willingness to invest?"*, the different categories were analyzed. The categories 'the entrepreneur's personality' and 'the entrepreneur's experience' were combined during axial coding, as they are closely related. Every section will end with a conclusion on whether there might be a relationship between the use of LSM, the category and the willingness to invest.

Based on the article of Blank (2018), 'burn rate' and 'first mover advantage' were added to the topic list and will be discussed under Section 4.2.4 and Section 4.2.3 respectively. During the interviews, additional criteria were only found in the category of the entrepreneur's personality.

4.2.1 The entrepreneur

While previous research argued that early stage Dutch venture capitalists valued product characteristics over the entrepreneur (Mensink, 2010), this research found conflicting arguments. When asked if there were any other criteria that they use than the ones listed in the research of Mensink (2010), 9 out of the 11 participants answered that for them the entrepreneur's personality should be the top scoring category. While the other two participants did not use these words, they did mention that they review more criteria for this category. 'Flexibility' was a common theme identified in the data, meaning that the entrepreneur is able to pivot when needed, as pivoting was mentioned as something that every startup will run into at some point in time. This closely relates to the other criterion that was identified in the data; 'coachability of the entrepreneur'. As introduced in Chapter 1, venture capitalists are often regarded to as 'smart money', for they not only provide capital, but also guidance. When an entrepreneur is found to be too stubborn and cannot be coached by the venture capitalists, this research found that venture capitalist may be less willing to invest in the startup. These criteria were added to the topic list of later interviews.

An argument was made for the use of a structured method like LSM mitigating the amount of experience that an entrepreneur needs in order to successfully build a business. While to some extent this proposition was supported by the data of other interviews, as developing systematically could allow the entrepreneur to rely less heavily on his experience, the proposition was not sufficiently supported to argue that there is a relationship. In the contrary, multiple experiences were shared by the participants where experience, that is argued to build gut-feeling of the entrepreneur, proved more valuable than a structured plan, as it improved the capability of the entrepreneur to deviate from the envisioned plan and be flexible in finding a right solution.

While the voluntary use of LSM by an entrepreneur was positively viewed upon by the participants, as it would generally indicate to them that the entrepreneur might be resourceful, creative and able to work systematically, the use of LSM was argued not to change an entrepreneur's personality. On the other hand, there were some consistent findings. The participants argued consistently that the successful use of LSM was determined by the entrepreneur's personality. The wrong use of LSM may decrease the willingness to invest, as discussed in Section 4.3.2. Furthermore, the entrepreneur is expected not to blindly follow one methodology, like LSM, but is expected to select what is useful for the startup from a multitude of methodologies, depending on what the startup needs. The personality of the entrepreneur was viewed as the main influence of this decision. One venture capitalist explained the use of a methodology like LSM the following way: *"when you give everyone a book about juggling balls, the one who followed the instructions of the book best, isn't necessarily the one who juggles the balls best. It is the same with starting a business. It is about a certain talent, learned skill or character of the entrepreneur that makes him a good entrepreneur"*.

Concluding, LSM might have a more positive relationship with other categories, given positive personality traits of the entrepreneur.

4.2.2 The product

As with the other categories, the criteria within the product category were found to be formulated in an isolated way by the participants. This means that many criteria within this category are only of value, given a positive score on other criteria. For instance, the participants indicated that lacking scalability of the product would be a rejection criterion on its own but a scalable validated technology without a market was worth nothing. Furthermore, it was argued that it is not always better to have a shorter time to market or just a functioning prototype. Participants argued that other methods could do this quicker, but when viewed in the context of the market criteria, a startup that uses LSM was expected to outperform other methods as it stimulates the prototype to be the minimum viable to be tested with customers. Just developing a product does not make it viable for customers and therefore susceptible to false rejections by the market, leading to wrong conclusions on how to develop the product further.

The criterion about having a sustainable competitive edge over competitors and outperforming other competitors are a part of the Lean Canvas in the Unique Selling Point quadrant (Maurya, 2012). However, the participants of this research did not find startups that use LSM generally have better technical product characteristics. Rather, the value of LSM lies in the criterion 'the technology solves a painful problem of the customer'. While, again, the use of LSM was viewed not to significantly influence the technology, participants did expect startups that use LSM to better be able to determine what the pain of the customer is, as the use of LSM stimulates to validate early on with potential customers what their pain is. Furthermore, participants believed that by validating with customers, an entrepreneur has a better understanding of who the competitors are, as they are currently solving the customer problem. An early stage venture capitalist might therefore be more willing to invest, given positive product characteristics, if these were developed by LSM.

Concluding, the use of LSM was found to possibly have a positive moderating effect on the linkage between product characteristics and the venture capitalist's willingness to invest.

4.2.3 The market

In Section 4.1 the main criterion of achieving product market fit is discussed. In the previous section, the product side of this is highlighted, where it is also proposed that the validation of the market might be the most valuable part of LSM, when viewed by early stage venture capitalists. This section first discusses whether the proposed relevance of a first mover advantage is

present in the Netherlands. Then, the criteria from literature are discussed, and a conclusion is given for the category.

The arguments of Blank (2018) regarding LSM limiting a startup to gain a first mover advantage, were to some extent supported by the participants. As discussed in Section 4.2.2, LSM might be slower in getting a product to market compared with other methodologies, but a first mover advantage is not seen as such an important criterion to the participating venture capitalists. Being a first mover, means creating a new market, which offers great potential, but an even greater risk. The venture capitalists that were interviewed about this subject preferred being a second mover to a market rather than a first mover for this reason. They argued that chances of success increase drastically as there is less uncertainty about the market and the potential to become market leader is almost as big. Furthermore, it was argued that nowadays, to come up with something that no one has ever done before is extremely rare and almost only occurs in high tech industries like biotech or deep-tech. Therefore, when an entrepreneur proposes having a first mover advantage outside of these industries, the positive side of this statement is often evaluated with a grain of salt.

From all the categories found in the literature, participants found the most relationships between the use of LSM and market related criteria. The biggest reason for this is that with the proposed customer validation of LSM, the entrepreneur is assumed to be better be able to evaluate the market. Entrepreneurs that have not validated their assumptions about their envisioned market are thought to systematically overestimate the size of their market, as also concluded by Busenitz and Barney (1997). The entrepreneur might hypothesize that their product might be suitable for a whole industry, whereas in reality they might be positioning their product for a small niche. The same applies with respect to the scalability of the revenue model. It was argued by the participants that true scalability can only be found through constant iterations of experiments that reveal what product features result in value that a customer is willing to pay for. However, this experimentation has its drawbacks, as discussed in Section 4.3.2.

Without customer validation, the risk that an investor runs with investing in such a startup is increased. This perception of risk by the venture capitalists might result in a decreased willingness to invest. All participants of this research expected a startup that uses LSM to have validated the hypothesized market demand, as it is a defined module in the Lean Canvas (Maurya, 2012). Furthermore, LSM presents a step in the methodology where the MVP is validated with paying customers (Maurya, 2012). This was found to relate to criteria like ‘the entrepreneur can demonstrate a market demand’, ‘people will pay for the product’, ‘the revenue model is proven in small scale’, ‘customers are known and/or there are already some customers’ and ‘the target market is clear and defined’. These criteria were identified often by the participants. Though mentioned more often, the type of relationship was found to be the same as for the product characteristics category. For instance, it was argued the use of LSM does not make people pay for the product, the value and pricing strategy of the product fulfills that criteria. However, it is thought by the participants that the use of LSM should provide the entrepreneur with empirical evidence about this, that he can use in his pitch to investors. This can increase the willingness to invest, as this evidence is perceived as risk decreasing.

While mentioned with less emphasis by the participants, this type of relationship also accounts for the other criteria in this category, for example ‘there is a large total available market’ and ‘the product has a strong value proposition for a specific target market’. This might mean that when startups that use LSM propose positive market characteristics, an early stage venture capitalist might be more willing to invest.

Concluding, consistent with the product category, the use of LSM was found to possibly have a positive moderating effect on the linkage between market characteristics and the venture capitalist’s willingness to invest.

4.2.4 Financial considerations

The financial considerations used in previous literature mostly consisted of return rates, which is used to balance the trade-off between risk and reward. Neither in the data nor the literature proof was found of a possible relationship between the use of LSM and return rates. When interviewing venture capitalists, two possibly new criteria appeared in the data that could be categorized under financial considerations; ‘capital efficiency’ and ‘burn rate’.

It was found that LSM is viewed by venture capitalists as a capital efficient way of developing a startup, it was interesting to find out what the implications are of this view. First of all, being able to cost-efficiently develop your business decreases the risk of an investment, as the same chances of failure with a lover investment equals decreased risk. This was often linked to the small iterations that LSM promotes. The quicker you can conclude that something is working or not, the less capital you have to invest in researching it, which then can be spent on other development projects.

Secondly, by developing in small steps, it allows the startup to raise smaller rounds of capital. Experiences of participants indicated that overfunding, when a startup asks for more capital than they actually need, results in a lower efficiency and therefore higher risk. But next to the implications for the investor, this also has implications for the entrepreneur. As mentioned in Section 4.1, the ultimate tradeoff in investing is risk versus reward. When the risk of an investment increases, for example because there is no validation, the investor expects more equity of the company. With smaller investment rounds, entrepreneurs can validate quicker, decrease risk and therefore keep more equity to themselves.

Capital efficiency was often referred to in the data as one of the characteristics of LSM, but it was not important enough to the venture capitalists to be considered a criterion that makes or breaks deals, as the efficiency of a startup only really can be evaluated after an investment is made, depending on what milestones have been achieved. Therefore, it was not included in the list of investment criteria.

A criterion that was looked at with more attention is burn rate. Although not the most important criterion in the eyes of the participants, the burn rate of a startup says something about the risk involved. The capital efficient way of LSM and small iterations made the participants believe that a company that uses LSM usually has a lower burn rate than companies that do not. As discussed in the previous paragraph, when burn rates increase, it was thought that capital efficiency decreases. To mitigate this risk, one has to be certain that product market fit has been achieved and the startup is ready to scale up. Once this validation process has been completed and the startup can scale up, the risk is decreased, as it is believed that every euro that is put into the company is able to double itself. As discussed in the previous sections, the participants believed that a company that uses LSM is expected to get faster to that point of product market fit.

While the venture capitalists that were interviewed generally preferred a low burn rate due to the accompanied lower risk, the investors found themselves in a predicament, as the exit market currently favors growth rate over burn rates. An example of an exit is when a big company like Google acquires a startup. The

capital that is available to these big companies is in the current economy a lot, according to the participants. Therefore, they care more about the technological advancements and a growing customer base than the short-term profitability of a startup. As a result, venture capitalists can be more inclined to invest in a startup with a high burn rate, as the profitability does not significantly influence the exit value of the company.

Venture capitalists might favor a low burn rate as this might improve capital efficiency and decrease the risk of the investment. In that regard, a startup that uses LSM might therefore enjoy an increased willingness to invest in it. On the other hand, when the exit market does not care for these risks, the incentive to burn more in order to grow faster is also present. It is therefore key to only increase burn rates when product market fit has been found. Waiting too long for this is something that investors also link with the use of LSM, which will be discussed in Section 4.3.

While there might be some merit to using LSM in the light of financial considerations, these considerations are not interpreted as influencing the willingness of an investor to invest significantly. Hence, there was not enough evidence found to conclude that there is a relationship between the use of LSM and financial considerations that influence the willingness to invest.

4.3 Limitations of LSM

4.3.1 Target market

The previous sections discussed how the use of LSM could contribute to the fulfillment of the investment criteria that venture capitalists use. In most cases, LSM could contribute positively to the criteria but only if used right. This is not possible in every market, as discussed in Section 2.1. The participants of this study confirmed this dependence on technology uncertainty, which was often linked to the Technology Readiness Level of a product. Some industries like the medical, hardware or deep-tech industry have long development programs and are therefore unable to easily develop an MVP, as this MVP already requires significant investments to be made. Next to that, customer validation might become very difficult, as these companies are often early to the market and customers are not ready yet to implement the often-radical changes that these new technologies bring. Customer interviews might therefore produce false negatives, meaning good ideas are mistakenly rejected as the market is not yet ready for it.

Furthermore, the data indicated that there might be less usefulness to LSM in markets where a company needs to get their product right the first time. For example, medical applications often need certification before they can be tested with real customers, which also links with the previous paragraph. However, this also holds for markets where customer-trust is very important, like cybersecurity. Such markets were found to require an MVP that is already developed in detail, for otherwise the future reputation of the startup might be permanently damaged. As a result, this research found that early stage venture capitalists might be more hesitant to invest in a startup that uses LSM in these industries.

4.3.2 Over-experimenting

Experimenting, and with that validated learning, is seen as the core concept of reducing risk in LSM ventures by the participants of this study. As discussed in Section 4.2.1, the right execution of LSM principles is found to be depending on the entrepreneur's capabilities. In some cases, experimenting too long can increase risk, decrease the perceived usefulness of the method and ultimately decrease willingness to invest. Examples that venture capitalists gave will be showcased below.

First of all, experimenting too long can result in a lack of focus. When an entrepreneur thinks he has hit product market fit, he must at one point in time make the jump and increase his spending in order to really scale up, otherwise venture capitalists may not evaluate his business as worthwhile to invest in. As achieving product market fit is not something that is binary, the entrepreneur might not feel comfortable with making this decision. The fact that he has always been capital efficient could increase his risk aversiveness, which ultimately might result in never scaling up.

Secondly, there is a case of listening too much to your customers. Validating with customers is at the heart of LSM, but some entrepreneurs fall for trying to please all customers. By adding features for a certain customer segment, an entrepreneur can make the product unnecessarily complicated. With that, he not only loses a customer segment, but also loses scalability of the product, which is an essential criterion for investors (Mensink, 2010).

Thirdly, in some cases a startup is heavily reliant on momentum. This reliance can occur when the business gets traction or when a business opportunity emerges, for instance the introduction of the GDPR, as illustrated by a participant. It is perceived by the venture capitalists as counterproductive to make small iterations in case of reliance and keep testing. These opportunities often only come once and the risk aversiveness that an entrepreneur who uses LSM might have built, might prevent him from taking this business opportunity.

Lastly, when an entrepreneur is too heavily reliant on following LSM e.g. by mapping a whole conceptual model of possible customer needs, he no longer appears to be an entrepreneur to venture capitalists. LSM proves to be a great handbook, but it should not become a bible as starting a business is seen not to be only about validating hypotheses, but also doing something with the validated learning.

These examples possibly indicate that there might be an inverted U-shaped relationship between the amount of experimentation and the usefulness of it. As discussed in Section 2.1.2, this inverted U-shaped relationship was also found in literature, which "might be caused by cognitive overload, where too many types of feedback overwhelm the founders' ability to receive, contemplate, and then incorporate customer-generated ideas" (Ladd, 2015, p. 23). While Ladd's (2015) research was conducted from the entrepreneur's perspective, this current research found that early stage venture capitalists also perceive an inverted U-shaped relationship between the amount of experimenting and its usefulness. Usefulness was defined as the contribution to venture success in Ladd's research (2015), whereas in this research it is linked with the willingness of a venture capitalist to invest in the startup, which is likely to be a result of the perceived venture success.

5. CONCLUSION AND DISCUSSION

The objective of this research was to get a clearer picture on an early stage investor's opinion on the usefulness of LSM. This opinion has been conceptualized into the willingness of a venture capital investor to invest in a startup, leading to the research question: *"How can the use of Lean Startup Methodology contribute to the willingness of an early stage venture capitalist to invest?"*. This research found that there are five main categories of investment criteria influencing this willingness, which were all analyzed for possible relationships.

In the end, the willingness of an early stage venture capitalist to invest in a startup is determined by a tradeoff between risk and reward. Often venture capitalists only invest in startups that have

already achieved product market fit, caring less for how the startup gets there, as they prefer to make decisions on the result of product market fit, namely revenue, instead of the predictors of product market fit, which can be validated hypotheses that LSM provides.

Nonetheless, LSM is perceived to decrease the riskiness of an investment proposal by having a positive moderating effect on the linkage between the market characteristics and willingness to invest and the linkage between the product characteristics and willingness to invest. This means that when given positive product and market characteristics, an early stage venture capitalist might be more likely to invest when these are developed by using LSM. This is mainly expected due to experimenting with customers early on in the development of the startup which leads to validated learning and ultimately decreased risk.

However, LSM remains 'just' a business development method and should not be regarded as a holy grail that is as useful in every industry. The wrong use of LSM can result in the opposite effect; increased perceived risk leading to decreased willingness to invest. The successful use of LSM is perceived by venture capitalists to be determined by the personality of the entrepreneur.

5.1 Limitations

Throughout this research the conclusions have been deliberately formulated with caution, for the research contains a couple validity related concerns. Only one researcher was active in gathering and analyzing the data. The lack of inter-coder reliability makes this research prone to researcher bias. The experience of the researcher in the researched field, LSM and venture capital, mitigates this risk of misunderstanding concepts that were discussed during the interviews, but might add to the researcher bias as more experience could lead to more prejudice. The researcher has done an internship at a startup where he used LSM to develop the business and has been active for 1.5 years at a Dutch venture capital firm.

Furthermore, due to time constraints, another reason for formulating the conclusions with caution is because it was only possible to obtain a sample of 11 venture capitalists to participate in this study. While some form of information saturation was achieved, in order to generalize the findings of this study, follow up research must take place. Recommendations for this will be listed in Section 5.3.

Lastly, the same time constraint limited the research to one iteration of data gathering. Normally in a qualitative study, multiple rounds of data gathering take place to get a deeper understanding of the theoretical concepts (Boeije, 2009). While the earlier interviews did influence the way that questions were asked in the later interviews, this did not result in a fully different iteration of data gathering. This might have led to a more superficial understanding of the researched concepts.

5.2 Implications

This research may have practical implications for both entrepreneurs seeking an investment and early stage venture capitalists. Furthermore, it adds to the scientific literature of entrepreneurial finance and LSM.

In the first place, insights in how an early stage venture capitalist might view a business development method like LSM provides an entrepreneur, who is seeking an investment, information that allows this entrepreneur to make a better-informed decision on what business development method this entrepreneur should employ to get to an investment.

Secondly, it provides venture capitalists with a deeper understanding of their and their competitors' behavior when evaluating startups. Venture capitalists are not perfect in predicting a startup's success. That is why many startups that get invested in still fail. A deeper understanding of one's own behavior can help with evaluating the way that venture capitalists make investment decisions and possibly improve this process.

Finally, this research adds to the scientific literature of entrepreneurial finance, as it describes the investment behavior of early stage venture capitalists in the Netherlands, as it was found that the category about the entrepreneur might also be the highest valued in the Netherlands and additional criteria were found for the entrepreneur's personality. Furthermore, it provides further insights in the value and limitations of LSM, as it found new evidence for the suggested inverted U-shaped relationship between the amount of experimentation and its usefulness. Lastly, it contributes to filling the current research gap in literature about the way venture capitalists perceive business development methods, with a focus on LSM.

5.3 Future research

The proposed inverted U-shaped relationship can be ground for future research. While the perspective of the entrepreneur has been researched by Ladd (2015), the venture capitalist perspective has only been briefly touched in this research. As these limitations of LSM were often mentioned during the interviews, there may be multiple experiences of venture capitalists with over-experimenting. Future research might provide insights into where the line of too much experimentation is drawn.

Furthermore, this research found information that might indicate that entrepreneurs who use LSM might hold a bigger equity stake in the company due to the decreasing risk approach of LSM, which might result in venture capitalists agreeing to a smaller equity stake in the company. Subsequently, it allows to raise smaller rounds, which enables the entrepreneur to collect more evidence for the potential success of the startup and reduce risk more for future investment rounds, repeating the process and in the end possibly ending up with a higher equity stake than if he would not employ LSM.

Lastly, this research could be built on by including a bigger sample and designing the research in a way that allows for a proper grounded theory approach. For this research, it might be interesting to also include business angels, as one of the findings of this research was that although the venture capital funds are labeled 'seed funds' by the Dutch government, most of them only invest after product market fit has been achieved. This study found that ultimately venture capitalists care that this fit is present, instead of caring about how the fit was achieved. Another interesting unit of analysis might be incubators and accelerators as they offer development programs that might make use of LSM principles and procedures and generally operate in the stages before investments are made in the startup.

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8. APPENDIX

Study	Wells (1974)	Poindexter (1976)	Tyebjee and Bruno (1984)	MacMillan et al. (1985)	MacMillan et al. (1987)	Robinson (1987)	Timmons et al. (1987)	Hall and Hofer (1993)
Method	Personal interviews	Questionnaire	Phone survey and questionnaire	Questionnaire	Questionnaire	Questionnaire	Unstructured interviews	Verbal protocol
Sample size	8	97	46 (Study 1) 41 (Study 2)	100	67	53	47	16
Entrepreneur/team characteristics:								
mgmt skill & experience	X	X	X	X	X	X	X	X
venture team				X	X	X		X
mgmt stake in firm		X	X					
personal motivation	X					X		
entr personality				X				
Product/service characteristics:								
product attributes	X		X	X	X			
product differentiation			X				X	
proprietary	X			X	X			
growth potential			X					
mkt acceptance				X			X	
prototype				X				
Market characteristics:								
mkt size	X		X				X	X
mkt growth	X		X	X		X	X	
barriers to entry			X				X	
competitive threat				X	X		X	
venture creates new mkt				X				
Financial characteristics:								
cash-out method	X		X					X
expected ROR		X	X	X			X	
expected risk		X						
percentage of equity		X						
investor provisions		X						
size of investment	X		X					
liquidity				X	X	X		
Other								
references	X					X		
venture development stage		X	X					
VC investment criteria								X

Table 1. Overview of investment criteria research (Zacharakis & Meyer, 2000)

8.2 Appendix B: Investment criteria by Mensink (2010)

Criteria	The Netherlands Mean	SD	Aver.
The entrepreneur's personality			
Capable of sustained intense effort	4,17	0,72	
Able to evaluate and react to risk well	4,25	0,62	
Ability to articulate well when discussing the venture	3,75	0,75	3,68
Attends to detail	3,55	0,69	
Has a personality compatible with mine	2,67	0,98	
The entrepreneur's experience			
Thoroughly familiar with the market targeted by venture	4,50	0,52	
Demonstrated leadership ability in past	3,50	0,67	
Has a track record relevant to venture	3,83	0,94	3,45
The entrepreneur was referred to me by a trustworthy source	2,83	1,03	
I am already familiar with the entrepreneur's reputation	2,58	0,67	
Characteristics of the product or service and business model			
The product is new, unique, and has substantial innovative content	3,75	0,62	
A strategy is available to protect the products uniqueness	3,42	0,51	
The product or technology has IP protection	2,92	0,90	
The technology provides a sustainable competitive edge	4,25	0,75	
The product is difficult to copy	3,67	0,49	
The product has an evolving innovation	3,67	0,78	
The product has a disruptive innovation	3,17	1,11	
The technology is scalable	4,67	0,49	
The technology is proven and validated	3,83	0,83	
The product has been developed to the point of a functioning prototype	4,17	0,83	
The product is ready to market or has short time to market	4,08	1,00	3,69
The product can be adopted by customers without a significant behavioural change	3,67	0,65	
The product enjoys demonstrated market acceptance	3,67	0,89	
The product solves a painful problem of a customer	4,25	0,62	
The product is involved in the core business of the customer	3,50	1,00	
The product is easy to understand and communicate	3,42	0,90	
The product performance is superior to competitors' products	4,08	0,79	
The product is consistent with corporate strategy of my company	2,83	0,83	
The product is resistant to economic cycles	3,00	0,63	
Characteristics of the market			
The target market is clear and can be defined	3,92	0,67	
The entrepreneur can demonstrate a market demand	4,67	0,65	
The entrepreneur can demonstrate a market gap	3,55	0,82	
The venture is in a dynamic, disruptive market with attractive patterns	3,33	0,98	
The target market has a large growth potential	4,67	0,49	
The implied growth rate between the ventures' size today and in 3-5 years is realistic	4,33	0,49	
The venture has a large growth potential	4,58	0,51	
There is a large total available market	4,50	0,67	
The total available market can be benchmarked for an accurate prediction of the size	3,33	0,65	
The venture is able to (know how to) defend their market in 2-3 years	3,83	0,39	
There is little threat of competition during the first 2-3 years	2,83	0,39	
The product has the competitive advantage to be no. 1 or 2 in the market	3,83	0,72	
An attractive position and/ or large potential market share can be claimed in the market	4,00	0,74	
The product is scalable across geographies and has international potential	4,25	0,97	
The venture can use its customer's international network to enter new markets	3,33	0,65	
(Uncertain) political factors do/ will not interfere the market	3,17	0,94	
The entrepreneurs' vision on market growth is not too underestimated	3,27	1,01	3,66
The entrepreneurs' vision on market growth is not too overestimated	3,45	1,04	
Competitors are present and known	3,50	1,17	
Customers are known and/ or there are already some customers	4,00	0,74	
I get good referrals from customers/ professionals/ competitors/ other VCs about the venture	3,50	0,90	
The venture has relations with stakeholders (customers/ service providers/networks)	3,50	1,08	
The venture enjoys a first mover advantage	3,08	0,67	
The venture is able to maintain their first mover advantage	3,42	0,67	
The venture choose the most attractive position in the value chain	3,58	0,67	
The venture found a niche market	2,64	0,92	
The product is different than the trend in the market	1,92	0,79	
The product is conform the trend in the market	2,83	1,11	
Barriers to entry should not be too difficult for the venture	3,00	1,28	
The venture will stimulate an existing market	3,00	0,85	
The venture will create a new market	2,33	0,78	
The venture will transform the market	2,75	0,62	
The venture is in an industry with which I am familiar	4,00	1,10	
The product has a strong value proposition for a specific target market	4,58	0,67	
The value proposition is different from competitors	3,92	0,67	
The value proposition provides barriers to entry	3,50	0,80	
The value proposition fits in the value chain	3,64	0,81	
The product is a 'must have' or 'need to have'	4,33	0,98	
People will pay for the product	4,64	0,50	
The revenue model is proven in small scale	4,08	0,67	
The revenue model is proven internationally	2,83	0,72	
The revenue model is attractive	4,42	0,51	
The revenue models adds value	4,45	0,52	
The revenue model is scalable	4,83	0,39	
Financial considerations			
I require a return equal to at least 10 times my investment within 5-10 years	4,08	0,90	
I require an investment that can be easily made liquid (e.g., taken public or acquired)	3,17	1,11	3,56
I require a return equal to at least 10 times my investment within at least 5 years	3,42	0,67	

Table 2. Investment criteria (Mensink, 2010)

8.3 Appendix C: Interview guideline

The interviewee is emailed an informed consent form, before the interview starts, this is accepted by the interviewee before the interview starts.

Definition of Lean Startup

Are you familiar with Lean Startup (LS) methodology? How did you become familiar with it?

There may be different conceptions of what LS is. This question aligns the view of interviewer and interviewee.

What are your general thoughts on using Lean in developing a startup?

Experiences

To your knowledge, did any proposals you have evaluated made use of Lean (Startup)?

What were your experiences with such proposals?

Investment criteria

Do you see yourself using these criteria (see list of most important criteria) when evaluating deals? Are there any important criteria that you're missing?

Are customer/product and product/market fit a must have before you invest in a startup?

Compared to a 'regular' startup, which investment criteria would be influenced by the use of Lean Startup?

Benefits and flaws of LSM

These are general questions that do not reflect a separate research question. The answers link with the investment criteria in the coding stages.

Would you recommend LS to a new startup? Why (not)?

Conclusion

The interviewee is informed about the further process of the research and his/her rights regarding the participation in this research.

8.4 Appendix D: Coding scheme

General

- Risk vs reward
- No customer focus
- Late market validation
- Investing after PM fit
- Hypothesized validation > Decreases risk
- Unknowingly using LSM principles
- Small impact Business Development Method

Investment Criteria

All Criteria

1. **The entrepreneur**
- Management team top criterium
- Indirect creativity/resourcefulness
- Vision
- Coachability
- Flexibility
- Experience

2. **The product**
- Product characteristics
- 'Technology is scalable'
- 'Technology is proven and validated'
- 'Short time to market'
- 'Developed to the point of functioning prototype'
- 'Technology sustainable advantage'
- 'Product solves painful problem'
- 'Product performance is better than competitors'

3. **The market**
- Market validation
- 'Large potential'
- 'Large total available market'
- 'Competitors are known'
- 'Strong value proposition in specific target market'
- 'Demonstrate market demand'
- 'People will pay for the product'
- 'Must be proven in small scale'
- 'Scalability of market'
- Returning revenue
- No first mover

4. **Financial considerations**
- Capital efficiency
- Burn rate

Limitations of Lean

1. **Type of companies for LSM**
- First time right required
- Technology Readiness Level

2. **Over-experimenting**
- Researching too long (not choosing a focus point)
- Due to negative customer feedback > lacking scalability
- Momentum
- Never getting to the real big changes
- Too much research (researcher instead of entrepreneur, links to personality)