

Strategic decision-making during different stages of business creation: a study of causation and effectuation.

Author: Casper Peters
University of Twente
P.O. Box 217, 7500AE Enschede
The Netherlands

ABSTRACT,

In recent years, a lot of research has been done on strategic decision-making. Among that research, there is a bit of division on which decision-making approaches to use. On the one hand, planning-based approaches can be identified, these emphasize planning and control. On the other hand, we have got flexible approaches, these emphasize adaptiveness and flexibility. The goal of this research is to investigate which decision-making approaches to use during different stages of business creation. Interviews were conducted with entrepreneurs who started their own businesses or have been involved in the business creation process. The interviews tried to investigate whether entrepreneurs use a planning-based (causation) or a flexible decision-making approach (effectuation) during the different stages of business creation. The results showed that during the different stages, the effectual approach is being used more than the causal approach when looking at both approaches separately. When looking at the approaches as being able to be combined or alternated, the results showed that a combination of the approaches is being used in practice. This research also showed that every business is different, meaning they all face different situations and all use different approaches because of that.

Graduation Committee members:

1st examiner: Dr. M.R. Stienstra

2nd examiner: Dr. B. Kump

Keywords

Decision-making, effectuation, causation, business creation, different stages.

1. INTRODUCTION

1.1 Situation and argumentation

Why is entrepreneurship important? Entrepreneurship is important in creating social, economic, and technological growth and development. Especially the entrepreneurs themselves are the main drivers of these important developments (Zahra & Wright, 2015). However, being an entrepreneur and creating a new business can come with its challenges. A common problem with startups is that they are known for their high failure rates. According to data from the Bureau of Labor Statistics of the United States, over twenty percent of new businesses fail within the first two years of operation, about forty-five percent fail within the first five years, and about sixty-five percent fail within the first ten years. Only twenty-five percent of newly founded companies survive for fifteen years or more (U.S. Bureau of Labor Statistics, 2022, as cited in Deane 2022). New businesses could fail due to the lack of management skills (Everett et al., 1998). Management skills will often mainly be influenced by the entrepreneur itself when starting up a new business. According to Alvarez and Barney (2005) the need to make decisions and take action while facing uncertainties characterizes the process of starting a new business. These uncertainties make it hard for the entrepreneur to know, how to organize the new business. For example, making decisions on where to allocate the available resources (Alvarez & Barney, 2005). To better deal with these uncertainties, it could be helpful for entrepreneurs to gain a better understanding of the decision-making approaches or tools they can use to organize their new business.

Amongst entrepreneurship literature, there is a bit of division on which decision-making approaches to use. On the one hand, there are planning-based approaches. These approaches emphasize business planning and control. An example of such an approach is causation (Sarasvathy, 2001). On the other hand, there are flexible approaches. These emphasize adaptiveness and flexibility. Some examples are bricolage (Baker & Nelson, 2005), effectuation (Read & Sarasvathy, 2005), and improvisation (Hmieleski & Corbett, 2008). When starting up a business a choice has to be made by the entrepreneur on which approach or combination of approaches to use. When looking at the planning-based approaches when starting up a business. These approaches tend to have less success when facing uncertainty. That is because plans are often based on predictions and these predictions often do not accurately work anymore as time passes (Brinckmann et al., 2010). When looking at flexible approaches. They tend to work better when having to deal with uncertainty. That is because when facing uncertainty, the company needs to be flexible to quickly adapt and respond to changes over time (Alvarez & Parker, 2009). On the contrary to this, when there is no uncertainty, the entrepreneurship literature suggests that it is more beneficial to use a planning-based approach instead of a flexible approach (Alvarez and Barney, 2005; Sarasvathy 2001). In this research, the main focus will be on two decision-making approaches examples given before. These are causation and effectuation. Causation as the planning-based approach and effectuation as the flexible approach.

Decisions that are being made during the business creation process will shape the business over time. However, a business is not always in its startup phase. This means that the conditions the business is in will change over time. These conditions will then in turn also have an impact on decision-making (Reymen et al., 2015). For example, as mentioned before, the amount of uncertainty can have a big influence on which decision-making approach to use. Since uncertainty can change a lot over time, entrepreneurs are likely to switch their decision-making approach over time as well (Read & Sarasvathy, 2005). Simply

switching from one approach to the other might not be the best option. Using a combination of both approaches might be better. Therefore, this thesis will not focus on them as competing approaches but as approaches that could be alternated or combined. Knowing which decision-making approaches to use over time, and under what circumstances shifts or combinations should occur, could be very useful for entrepreneurs when starting up their new venture.

1.2 Research Gap

The effects of causation and effectuation have been researched a lot before (e.g., Dew et al., 2009; Sarasvathy, 2001). But there are some scholars that criticize this research. For example, according to Fischer and Reuber (2011), previous research on effectuation focuses on hypothetical startup processes instead of actual startup processes (e.g., Dew et al., 2009; Read et al., 2009). Because of that in this paper, the focus will be on entrepreneurs who started their own businesses.

When taking a look at causation and effectuation over time in the process of starting up a new business there is not a lot of research present. However, there is one study that has been done in this field called: "Understanding dynamics of decision making in venture creation" by Reymen et al. (2015). This study focuses on technology-based companies since they often face a lot of uncertainty (Reymen et al., 2015). Because of this Reymen et al. (2015) suggests that more research should be done in businesses that face other types of uncertainty. In this research, the focus will therefore be on types of businesses that could be present in any local area. The most plausible area to use in this case would be the province of Overijssel since it is the local area of the author of this paper.

With the arguments of Fischer and Reuber (2011) and the suggestions of Reymen et al. (2015), the following research gap can be identified: strategic decision-making approaches during different stages of business creation in the Overijssel region.

1.3 Research question

The research gap identified before leads to the following research question:

- Which approach or combination of approaches should entrepreneurs use in different stages of the business creation process?

The objective of this research is to understand which decision-making approaches to use during different stages of starting up a business. The aim is to give information about, which decision-making approaches there are, when to use which approach or combination of approaches, and during what stage of the business creation process to use them. This research hopes to be able to give recommendations to entrepreneurs who want to start their own business, on when a certain decision-making approach could be used.

This research will test the arguments about the effectuation theory made by Fischer and Reuber (2011). And this research will be a contribution to the work of Reymen et al. (2015).

2. LITERATURE

2.1 Planning-based approach vs flexible approach

Entrepreneurial decision-making is of big importance when it comes to organizing a business under uncertainty. But what decision-making approach or tools should be used under these conditions? In the Entrepreneurship literature, there is a division between two main approaches to decision-making. These are the planning-based approach and the flexible approach.

The literature in favor of planning-based approaches implies that planning improves a human's effectiveness when acting and therefore helps a person in attaining their goals (Ansoff, 1991). The planning-based approach mainly relies on prediction. This is why, when developing a business strategy, planning can be used to predict better and therefore make sure your business is more prepared for future challenges (Wiltbank et al., 2006). Being more prepared for challenges is a big positive of planning, but according to Delmar and Shane (2003), there are more positives when it comes to planning. The first one is that planning specifies goals and identifies the steps to achieve these goals. Therefore, planning enables firms to get more control in achieving their goals. Another positive is that planning can enable more rapid decision-making since information gaps can be predicted in advance and therefore, they are easier to address. For example, it is possible to test assumptions without using up resources. Also, resource flows can be improved, and bottlenecks can be avoided. The last positive is that planning can make sure there is better communication with people inside or outside of the company (Delmar & Shane, 2003; Priem et al., 1995). These are quite some positives. However, there is also a problem with using the planning approach, especially when starting up a new business. When entrepreneurs start up their business there is often not a lot of or no reliable data available to base their decisions on. This means that they are facing uncertainty and therefore the effectiveness of planning and predicting will probably be limited (McKelvie et al., 2011; McMullen & Shepherd, 2006).

The other approaches, the flexible approaches, have another way of looking at decision-making. The flexible approach takes on a more adaptive and incremental approach (Brews & Hunt, 1999). This means doing things step by step and being flexible. Using this approach means that you are not using a predefined or formal plan (Mintzberg, 1995). According to Mosakowski (1997), this approach is especially useful when a company operates in uncertain and unpredictable environments because this strategy allows for more rapid action to capture arising opportunities. As opposed to the planning-based approach, Hough and White (2003) suggest, that when organizations face a high level of environmental uncertainty, they should focus on learning and pursuing a flexible strategy. Additionally, they argue that being too formalized and predictable may cause internal stiffness when operating in these environments. Because of this, being too committed to plans and regulations can result in not being able to adapt to changes in the external environment and therefore result in lower business performance (Haveman, 1992; Mosakowski, 1997). An important upside of the flexible approaches compared to the planning-based approaches is that planning takes recourses. For example, a manager's time. These recourses could be used for other activities that create value for the business (Carter et al., 1996). Instead of spending time on predicting the future, the manager could benefit from using the resources they have to try and acquire more resources (Wiltbank et al., 2006). This is especially the case for new firms because the risk of losing resources as a result of managerial mistakes should be minimized since recourses are often limited (Bhide, 2000).

2.2 Causation and Effectuation

In the entrepreneurship literature, two main concepts have been developed to describe entrepreneurial processes. These are called causation and effectuation. Causation and effectuation, and their relation to each other have gained quite some interest over the years (Chandler et al., 2011; Reymen et al., 2015; Sarasvathy, 2001). This part will take a look at both concepts and their differences. Causation as an example of a planning-based approach and effectuation as an example of a flexible approach. The literature often differentiates causation and effectuation in four decision-making dimensions (Dew et al., 2009; Reymen et

al., 2015). This research will take a deeper look at the dimensions described by Dew et al. (2009).

2.2.1 Basis for taking action

Causation is focused on goals. When using a causal decision-making approach, you define a goal, and based on that, you select what recourses you need in order to reach that goal (Dew et al., 2009). For example, when your goal is to cook something, you use a recipe as a mean to cook it (Reymen et al., 2015). When using a causal approach, entrepreneurs start by setting a goal. Then they often perform an analysis of market trends, their competitors, and their own perceived advantage over competitors. Based on this analysis, they make a strategic plan to get the right resources together to be able to achieve the goal (Brinckmann et al., 2010). On the contrary, effectuation means that you use the recourses available to the business as a starting point, and work towards goals that are possible to reach with these recourses (Sarasvathy, 2001). For example, using the ingredients that are still in your fridge to cook something that can be made with those ingredients (Reymen et al., 2015).

2.2.2 Risks and recourses

When making and seeking investments there is a big difference between both causation and effectuation. The causation approach is more focused on maximizing return. Because of that it often makes and seeks for bigger investments. A business plan is created that covers possible scenarios and a calculation is made to predict returns. This could be seen as a more careful approach (Dew et al., 2009). On the contrary, effectuation embraces the environment and its unpredictability. With effectuation, the focus is more on the available assets of founders and current investors, instead of looking for as much new investment as possible (Dew et al., 2009). A principle that is often used is the affordable loss principle by Sarasvathy et al. (2014). According to that principle, entrepreneurs should focus on what they can afford to lose instead of looking for as much return as possible (Dew et al., 2009). This means that investments are often smaller with effectuation since it only uses the available assets.

2.2.3 Attitude towards outsiders

During the business creation process, the two approaches also differ in the way they interact with people and organizations. When using a causation approach, entrepreneurs often tend to protect their competitive advantage from people outside of the business. They often use property protection strategies (Chesbrough, 2006). When they do decide to partner with other companies, the partners are very carefully selected. Often based on the competencies they have, and only if they also align with the organization its goals (Read et al., 2009). On the other hand, when using an effectuation approach, entrepreneurs are open for outsiders as stakeholders. They want to involve them because stakeholders can bring the company extra recourses. Stakeholders can also reduce uncertainty and help shape the business, by giving feedback (Read et al., 2009). An example of that is by using draft products. Draft products can be shown to stakeholders to get feedback on them. This can in turn also attract other stakeholders (Reymen et al., 2015).

2.2.4 Dealing with unexpected events

The causation and effectuation approaches differ a lot in how they react to their environment and market. With causation, the main aim is to stick to the plan. The strategy would be interrupted if that weren't done. However, always sticking to the plan can negatively affect the business when any unexpected event occurs (Choi et al., 2008). Effectuation, on the other hand, is very adaptive to unexpected events. It seeks for feedback and tries to incorporate that feedback back into the business. Being more

adaptive and using feedback often positively affects the business when facing unexpected events (Chandler et al., 2011).

2.3 Decision-making overtime

Which decision-making approach to use could be dependent on the stage of the company. The business could already be fully established or completely new. Startups still have to establish themselves as an organization, and in the market while often dealing with more uncertainty and less data to base their decision on. This could be a big challenge for them, and it is something already established firms do not have to face anymore (McMullen & Shepherd, 2006).

The causation approach uses forecasting future situations, determining how they will affect the company, developing strategies in response to changing conditions, and evaluating the predicted results of that (Bhide, 2000; Dew et al., 2009). Because entrepreneurs of new firms often have less experience in this, compared to executives of established firms, the degree of uncertainty is higher for them. Also, when going into a new market, entrepreneurs of new businesses need to make assumptions, which could be hard to test. For instance, they can find it challenging to assess in advance how well they can anticipate and meet client demand (Bhide, 2000) This means that compared to established businesses it might be harder for startups to predict the future. This results in the startup having more uncertainty. Another factor new firms have to deal with compared to established firms is having limited information. The newer the firm, the more information they need to acquire, and the more learning they need to do (Shepherd et al., 2003). When looking at both uncertainty and the limited information a new business has, the effectuation theory described by Read & Sarasvathy (2005), and Sarasvathy (2001), gives explanations of how entrepreneurs could make decisions in uncertain times. According to this theory, when there is no good or not much information, planning activities are not that effective for a company's performance. Also, when the profit potential of the new business is unknown because of uncertainty, entrepreneurs often rather limit potential losses instead of maximizing profit. This then results in the fact that these companies might also prefer to keep the costs associated with market analysis and research low. Because of all of this, when the company is young entrepreneurs are more likely to focus on business aspects they can control. For example, networking instead of business planning (Read & Sarasvathy, 2005; Sarasvathy, 2001; Wiltbank et al., 2006).

According to Brinckmann et al. (2010), once the business survives and gets bigger over time, it is likely that the decision-making approach would shift from an effectual approach towards a causal approach. Similarly, Brinckmann et al. (2010) found planning to be less effective in relatively new businesses. According to Reymen et al. (2015) in practice, entrepreneurial decision-making often consists of a hybrid of the causal and effectual approach. The shift from effectual decision-making in the beginning stages of venture creation towards a causal approach when the company is more mature is taken into doubt by Reymen et al. (2015). According to them, effectual decision-making can reappear in the later stages of business creation. Meaning that in practice, there can be not only a combination of causal and effectual decision-making, but they can also reoccur over time. The research by Reymen et al. (2015) also supports the argumentation by Alvarez and Barney (2005) that shifts in the level of uncertainty will require entrepreneurs to change their decision-making approaches in the business creation process over time. That together with conditions like stakeholder pressure and the recourse position of the company, can have an influence on decision-making. These conditions explain why there is not just a simple change from an effectual to a causal

decision-making approach over time. A small change in one of these conditions can already interrupt the fitness of a decision-making approach (Reymen et al., 2015). For example, changes in the recourse position of the business can lead to a change in objectives or plans, resulting in a shift towards another decision-making approach. When there is an insufficient number of recourses available entrepreneurs often tend to increase the amount of effectual decision-making (Reymen et al., 2015).

3. METHODOLOGY

3.1 Research design

A semi-structured interview was designed to assess the interviewees' preference for causal or effectual decision-making in the startup process of their company. This is a form of qualitative analysis to gain more in-depth information about the entrepreneur's personal experience of starting up a venture.

The entrepreneurs were asked questions about the decisions they made during different stages of starting up their businesses. The questions contain the theories of causation and effectuation as described before in the literature. Except for the first two questions, all questions are dichotomous, meaning two options to choose from. One option is based on a causal decision-making approach and the other option is based on an effectual decision-making approach. The answers can be viewed as causal, effectual, or a combination of both approaches. There is also the possibility of both approaches not being used by the entrepreneur. Three stages are introduced in every question to determine whether decision-making changes over time. These stages are: (1) before the official start of the company, (2) within the first two years after the official start of the company, and (3) from two years after the official start of the company. Besides the questions, follow-up questions were asked to gain more insight into the entrepreneurs' experience in the startup process of their company.

3.2 Data collection

3.2.1 Interview Information

In total, 5 interviews were conducted. The interviews had an average length of about 22 minutes. Three of the five interviews were conducted face to face, one of the interviews was conducted over a phone call, and another interview was done over email. The interviews were recorded, and these recordings can be found with the author of this paper. The interviewees all gave consent to record and use their data. The questions of the interviews can be found in appendix A.

3.2.2 Sample

The entrepreneurs were selected based on the following criteria: (1) they started or have been involved in starting up a business, (2) the business is at more than two years after the official startup, and (3) the business operates in the Overijssel region.

The first entrepreneur started her business with her companion at the beginning of 2021. The business sells tiles to its customers. The entrepreneur is female and 22 years old. She is currently finishing her bachelor's in Fashion and Textile Technologies at Hogeschool Saxion.

The second interviewed entrepreneur has been involved in the startup process of multiple different companies over the years, often as an investor and director. With all of his experience, some could say he is an expert in this area. Because of that, the interview with him is more focused on his approaches with all the companies he helped start-up, and on what he thinks would be the best decisions when it comes to starting up a new

company. The entrepreneur is male and 52 years old. He has a master's degree from the University of Twente.

The third entrepreneur is male and 20 years old. He is currently finishing his bachelor's degree in commercial economics at Hogeschool Saxion. He started a business, together with his friend, which sells products on a well-known resale platform.

The fourth entrepreneur is male and has started a company in lipid-based medical device coatings. He has a Ph.D. in supramolecular chemistry from the University of Twente. During his Ph.D., he came up with the idea of starting his company. The company officially started at the end of 2016.

The fifth entrepreneur is male and 59 years old. In 2011 he started a company that processes and sells high-end meat. He owned a bistro at first, which he then sold to start his newest business.

3.2.3 Interview questions

In total, there are ten questions. The first question asked about basic information from the entrepreneur. The second question asked about the amount of uncertainty they faced within the different stages of the startup process. The other eight questions are about the four dimensions of causation and effectuation described by Dew et al. (2009). The entrepreneurs were not told about the dimensions to make sure not to create any bias. The questions will be discussed a bit more below:

The first dimension described by Dew et al. (2009) is called: "basis for taking action". The questions in this dimension are about the means and the goals of the business. Question 3 is about the means used by the business and question 4 is about the goals.

The second dimension described by Dew et al. (2009) is called: "Risks and recourses". As the name already says it is mainly about risks and recourses. Question 5 asked about the risks the entrepreneur took when starting up the business. And question 6 asked about focusing on returns versus focusing on what the entrepreneur can afford to lose.

The third dimension described by Dew et al. (2009) is called: "Attitude towards outsiders". It is mainly about how the company dealt with its environment and stakeholders. Question 7 asked about how the company got the information about the market it operates in. Question 8 asked about the relationship between the company and its environment.

The last and fourth dimension described by Dew et al. (2009) is called: "Dealing with unexpected events". It is about how the company dealt with certain events. Question 9 asked whether the company tries to predict those events. Question 10 asked about business planning and the flexibility within those plans to react to certain events.

3.3 Analysis

The main reason for interviews being chosen is because interviews can give insight into the personal experiences entrepreneurs had with starting up a business. A study done by McGrath et al. (2019) gave insight into how to do qualitative research. According to them, qualitative research allows researchers to explore in-depth research that is unique to the experience of the interviewees themselves. In this case, the interviewees all make different decisions in starting up their businesses. Therefore in-depth research can give a better understanding.

To connect the theoretical framework to the interview questions, the questions were categorized into the four dimensions of causation and effectuation (see appendix A). This categorization was to keep the interview consistent with the research done by Dew et al. (2009) and Reymen et al. (2015). This can in order also allow future research to build upon the findings of this research.

Similar to the questions, the answers to the interviews were analyzed and categorized in a causal (C) or effectual (E) decision-making approach (see tables in appendix B). When the interviewees answered by using both of the decision-making approaches, the answers were categorized as a combination (CE). For the questions where neither causation nor effectuation could be defined the character N was used. The literature used in chapter 2.2 about the differences between causation and effectuation gave insight into how to lead back the answers to one of the theories. For example in the first dimension (basis for taking action), the use of words like "to reach that goal..." indicate the use of a causal approach. On the contrary, words like "by using my own means..." is an indication of the use of the effectual approach. Some other examples of words that often indicate the use of causation are: "plan to", "my goal is", "analyze the market", and "try to predict". Some other examples of words that indicate the use of the effectuation approach are: "run in the moment", "react to the situation", "reinvest the means", and "collaborating with stakeholders".

4. RESULTS

The results of the interviews can be found in the tables in appendix B, here the entrepreneurs are stated on the y-axis, and the questions on the x-axis. The entrepreneurs will be stated by using E# and their corresponding numbers, and the questions will be stated by using Q and its corresponding numbers. This part will take a deeper into the entrepreneurs' experience with starting up a business. It will go deeper into the amount of uncertainty the entrepreneurs faced in the different stages, and into the decision-making by the entrepreneurs in every dimension described by Dew et al. (2009).

4.1 Uncertainty

When taking a first look at the level of uncertainty the entrepreneurs faced in the different stages of the startup process (see Table 1 in appendix B), you can see that except for E#5, they all faced uncertainty. Especially before the official startup, the degree of uncertainty is very high. E#1 mentioned that before the start she had a lot of question marks about which direction to go to with her business. There were several competitors already in the market as well. Because of both of these reasons, there was a lot of uncertainty for her. Over time the uncertainty decreased bit by bit, especially after opening a showroom. E#4 is in a similar situation, but after quite some years of doing business, the degree of uncertainty is still relatively high. He went all in with his business without a lot of finance. From the official start of the company he had to attract investors for research and development, and he still has to do that years after the official startup. This is quite challenging and often gives "do or die" moments for the business. Because of all that uncertainty remains quite high even years after the startup. E#2 who has been involved in many startups, often as an investor, can relate to that. According to him, when it comes to uncertainty new businesses face, almost every startup faces uncertainty from about five to eight years after the official startup. For E#3 it was a bit different. At the beginning of starting his business, the only uncertainty he had was about the first product brought to market. That uncertainty quickly vanished when the first product started performing right away. Although he quickly did not face a high degree of uncertainty anymore after the start-up, the entrepreneur still mentioned that there is always some degree of uncertainty in practice. E#3 recently started up another business. With his newest company, he needed bigger investments in the beginning, as compared to his first company. Because of that, there was more uncertainty about losing money. About that, the entrepreneur said the following: "That is just part of the job."

With E#5 it seems like another case when it comes to uncertainty. The entrepreneur did not face any uncertainty. He said the following about it: *"I have never been uncertain, I know exactly what I want, and what I can, you just have to know what you can and can't do."* He also mentioned that when you feel like you have something good you just have to go for it. About that he followed up with the following: *"I always stood 300% behind my product and that brought me to where I am now."*

4.2 Dimensions

4.2.1 Dimension 1: basis for taking action

When looking at the first dimension we can see through the tables (see tables 2,3,4 and 5 in appendix B), that before the start of the companies, the entrepreneurs mostly used effectual approaches. In the first two years, for some entrepreneurs, that changed towards a causal approach or a combination of both. Some also stick to the effectual approach. After two years of doing business, the causal approach is being used a bit more than before.

When looking at Q3 about, which means to use, we can see that before the start all entrepreneurs answered in an effectual way. They all used their own capital and resources. For example, E#1 said that she only produced on order. After the first couple of orders, she kept reinvesting the earned money back into the business. E#3 only needed to make a very small investment and kept reinvesting just like E#1. E#3 even used his own house as a storage for his products. E#5 had some money from the sale of his previous company to put into the new business, and he also kept reinvesting the earnings over the years. E#4 used his own means before the start, but after some time that changed. In the first years he got some subsidies and a subordinated loan, and later on, he got equity investments. This is a clear change over time from an effectual approach to a causal approach. E#2 said that that is very common in startups. He said in the interview that before the official start of the company, it is common that only the capital and resources of the owners get used. In the first two years of the business starting, that switches to a combination of both own resources and outside capital. After that, it is common that investors will come aboard meaning fully switching to a causal approach.

When taking a look at Q4 we can see that E#1, E#2, and E#3 start off by using the effectual approach and later on switch towards a combination of both the effectual and causal approach. E#1 had the most focus on running the business in the moment, meaning the use of an effectual approach. Even though she did set some goals in the beginning, these goals were often not that realistic. She however, kept on setting goals over the years, meaning that over time she used a combination of both a causal approach and an effectual approach. In the beginning E#3 had his main focus on managing the company in the moment. After two years of doing business, he started doing monthly meetings with his business partner to set up new goals and evaluate old goals. He said: *"At some point, you are getting a bit forced to be more professional."* E#4 and E#5 both kept the same approach over time. E#4 always had one goal with his company and that was: reducing the number of healthcare infections with their innovation. Since the focus is on one big goal E#4 always has to get together the means needed, in order to reach that goal. This is a clear example of the use of the causal approach. E#5 on the other hand, gives a clear example of the use of the effectual approach. E#5 didn't set any goals, his main focus was on running the business in the moment. He said the following: *"Sometimes things just happen, you can't plan those things."* In the beginning, he often went to his customers to try and sell his products. About that, he said the

following: *"You explore the market, and from that, I saw opportunities, and then it is just about working hard."*

4.2.2 Dimension 2: Risks and resources

When looking at the answers of the entrepreneur in the dimension about risks and resources you can see a division between approaches. Some entrepreneurs even use neither of the approaches.

When looking at Q5, E#3 and E#4 use the combination of both approaches over time. Before E#3 buys the products he sells, he always performs an analysis beforehand on how much he thinks he is going to make on that product. On the other hand, he also focuses on what the risks are of selling a certain product. This means that both the causal and effectual approach is being used by E#3. E#4 does it kind of similar. Especially in the beginning, a lot of market research and analysis on the barriers to entry have been done. Both the opportunities and the risks are always included in decision-making. E#1 didn't use any of the approaches before the start of the company. Only after she started selling more, she started to minimize risks as much as possible. For example, by looking for more suppliers to make sure not to be dependent on one supplier. This means that over time a change has been made to an effectual approach. E#2 and E#5 never used any of the approaches. E#2 said that the focus should be on the turnover and on trying to get as many customers as possible, especially in the startup stages. E#5 explained the use of neither approach with the following answer: *"My intentions have never been on the money, when the product is good, the money will come [...] you just have to make sure your organization and product are good, then the rest will come by itself."* He also explained that he was not scared of the risks since he knew his product was good.

When asked about whether the focus of the entrepreneur lies on maximizing the return or on what they could afford to lose, there were three entrepreneurs with a clear causal approach over time and two entrepreneurs who did neither follow a causal nor an effectual approach over time. E#1, E#2, and E#3 all had a focus on maximizing the return. With E#1 that was the case, especially before the start and in the first two years, because the company did not have a lot of costs, therefore the main focus was on returns to be able to reinvest it back into the business. E#2 said the following about it: *"There is never the thought about what you can afford to lose, it is always about the returns."* E#4 and E#5 use neither approach. E#4 his focus over the years has mainly been on developing the technology to a higher level. Now his company is getting to the point where they can use their innovation toward more revenue streams. This will slowly result in a shift towards maximizing the returns more. This is, however, not the case yet. E#5 has never thought about losses or maximizing returns. He said: *"When the chances are there you just have to take them. Your product and organization are the most important."*

4.2.3 Dimension 3: Attitude towards outsiders

When looking at the third dimension you can see (Tables 2,3 and 4 in appendix B) that the used decision-making approaches differ quite a lot between the entrepreneurs. Because of that, we will just look at Q7 and Q8 separately.

When taking a look at Q7 we can see that all of the investors always use the causal approach of doing market research. Especially before the official start of the company, three entrepreneurs only use the causal approach. The reason for that from E#1 was because she was not selling any product yet, therefore it was harder to use the effectual approach of getting feedback from stakeholders. The causal approach of market research was more viable in this moment of time. As E#1 and E#3 started to sell more of their products the feedback from their

stakeholders became very important as well. E#5 only kept on using the causal approach of constantly doing market research. That was mainly because his product was always selling meaning feedback was not that necessary. E#2 implied that both approaches should always be used. E#4 always uses a combination of both approaches. A lot of market research and interviews with stakeholders have been and are constantly being done. For example, by visiting customers and trade shows in order to fine-tune the value proposition.

When taking a look at Q8 about sharing information with outsiders, all entrepreneurs have collaborative relationships with suppliers and customers except for E#4. E#4 is very firm about the fact that no company intellectual property or other information can be shared with external parties, it is a common principle for them. E#2 said that in most cases your competitive advantage can be protected by patents and that a collaborative relationship with customers is always important. E#5 sometimes works together with other companies. His company is always open for collaborations if that does not hurt one or another. E#1 and E#3 both share some information with suppliers and customers. E#3 says the following about it: *"You are always competitive with others, but we were always open for collaborations, you can learn from each other [...] it is better to be colleagues than to swindle each other."*

4.2.4 Dimension 4: Dealing with unexpected events

In the final dimension about dealing with unexpected events, it is obvious that the entrepreneurs favor using the effectual approach.

All entrepreneurs said that managing the business in the moment is always important. E#5 told the following about the causal approach of trying to predict future events: *"What happens in the future, nobody knows that, and you don't have an influence on it."* He also said that his company does have a construction in place so that if some bad event happens they don't face a blooper. E#4 uses a combination of both approaches. In the interview, he said, that you should always try to identify the risks. When you do that, you will get a feeling of the things that could have an unexpected effect on the company. This is something you should then combine with managing the company in the moment. He also mentioned that when the company got bigger and bigger he was able to divide the tasks more, resulting in more effective risk management. When it comes to sticking to the plans made, all entrepreneurs were clear about the fact that you should always react to the new situation and adjust the plan to that, clearly stating the use of the effectual approach. E#5 said the following: *"You live from day to day, week to week, and every time you change your plans. [...] you are continuously exploring the market to try and react on that."* E#2 had a similar view. He said that the made plans will constantly change to address the situation of the company. Only after a year of five, there will be more structure in the company, and then the strategy will become more and more important. The main focus in the beginning years of the company should be on running the company in the moment. The entrepreneur gave the following quote about it: *"We will go and drive without a navigation and we will just see where we end up."*

5. DISCUSSION AND IMPLICATIONS

5.1 Discussion

In this research, we researched which and how decision-making approaches are applied in the literature and practice. Interviews were done to gather data from entrepreneurs who started their own businesses. This data has come to the result that, in the startup stages of their company, entrepreneurs are more intended to use the effectual decision-making approach, as compared to

the causal decision-making approach (see table 5, appendix B).

The literature implies that when starting up a new business, entrepreneurs often face a lot of uncertainty. They suggested that when entrepreneurs face a lot of uncertainty, they should focus on pursuing a flexible approach like effectuation (Alvarez & Parker, 2009). When we look at uncertainty in the sample we see that most entrepreneurs face uncertainty in all stages of the startup process (table 1, appendix B). However, this is not always the case. We see that E#5 of the sample did not have any degree of uncertainty over the years. That was mainly due to his experience in the sector and his firm belief in his product and own capabilities. This means that when it comes to uncertainty it could be very dependent on the type of company or the entrepreneurs. When looking at the other entrepreneurs, we do see quite a lot of use of effectual approaches when facing high degrees of uncertainty. However, since E#5 did also mainly use the effectual approach, but without facing any degree of uncertainty, we cannot say that the use of the effectual approach is definitely because of the uncertainty the entrepreneurs faced.

The literature also implied that planning-based approaches like causation tend to have less success when facing uncertainty. When it comes to uncertainty we see that, except for E#5, all entrepreneurs in the sample face some uncertainty in all startup stages (table 1 in appendix B). Even though there is a lot of uncertainty present in all stages, the planning-based approach of causation still gets used by entrepreneurs. An example of that is Q6 about the affordable loss principle described by Sarasvathy et al. (2014). That principle implies that, because of uncertainty, entrepreneurs often rather limit potential losses instead of maximizing returns. In practice that doesn't seem to be the case. When Q6 was asked, two of the five entrepreneurs did not focus on maximizing returns nor on limiting potential losses. The other three entrepreneurs did have the focus on maximizing returns, but not on what they could afford to lose at all. E#2 an entrepreneur with a lot of experience in the entrepreneurial area even said that entrepreneurs should never focus on what they can afford to lose, it should always be about the returns. The three entrepreneurs who did focus on maximizing their returns all said they faced some quite high degrees of uncertainty over all of the different stages of the business creation process. So, even though the causal approach gets used less than the effectual approach, it still contradicts the assumptions made by literature that planned-based approaches tend to have less success when facing uncertainty.

Multiple literature implied that once the business gets more established over time, it is likely that the decision-making approach would shift from an effectual approach towards a causal approach. That would be the case because the amount of uncertainty will reduce over the years (e.g. Brinckmann et al., 2010). However, research done by Reymen et al. (2015) took that phenomenon into doubt. They found that it is often not a simple switch from one approach to the other. According to them, a combination of both approaches is mostly being used in practice. This matches the results of this research. We could see that depending on the situation of the company, the entrepreneurs used a combination of both approaches. Reymen et al. (2015) also suggested that the effectual approach can reoccur over time. We found from the results of the interviewed sample that that is indeed the case. A prime example would be the answers on Q7 from E#1 and E#3. This question was about doing market research or asking for feedback from stakeholders to get information. The entrepreneurs' answers implied, that before the official start of the company, products were not sold yet, meaning they could not really ask for feedback from stakeholders yet. Therefore market research, which is a causal approach, was

mainly used in this stage. When they actually started selling their products the feedback from their stakeholders became very important as well, if not even more important than market research. This clearly shows an example of the effectual approach occurring in a later stage. From the interviewed sample it came apparent that the switches that occur over time were often not based on the reducing uncertainty, but based on the situation the company was in and the preferences of the entrepreneur.

5.2 Implications

5.2.1 Academic implications

This research can give more understanding on decision-making approaches during different stages of the business creation process. This research tests the theories of causation and effectuation researched by Dew et al., (2009) and Sarasvathy, (2001). It uses the suggestions made by Fischer and Reuber (2011) to use actual companies in the sample, instead of hypothetical ones. By researching which approaches get used over time, by non-technology-based companies, this research also contributes to the literature and suggestions made by Reymen et al. (2015). Since research in this specific area is still relatively limited, this paper can be a starting point for further research on strategic decision-making over time.

5.2.2 Practical implications

The findings of this research will give practical information about decision-making over time to entrepreneurs who own or want to start a new business. The study will provide information to entrepreneurs about when and which decision-making approaches to use when managing their businesses. They can also use it to reflect on their decision-making approaches during the startup process. Entrepreneurs may be intended to switch their approaches based on the results of entrepreneurs from the sample. Some entrepreneurs may also get another view on business planning because of this research. They might want to use more business planning or they might want to switch to a more flexible strategy. Overall the practical relevance of this research lies within the guidance and support of new or established business owners to try and make sure their business survives or even improves. This can in order also give economic and social benefits.

6. LIMITATIONS AND FURTHER RESEARCH

While this research will contribute to entrepreneurship literature, this research does have its limitations. First, due to the short time frame of this research, the number of interviews conducted with entrepreneurs was relatively small. The small number of interviews still gave very in-depth and quality data. However, a larger number of participants would have increased the validity of this research. Second, some of the companies did not exist that long yet, meaning that uncertainty did not fully reduce yet, meaning it was hard to test whether decision-making was influenced by uncertainty. The change in approaches over time could therefore not be linked to uncertainty in every case. Third, this research did not compare its findings to different cultural values. The sample was entirely based on the region of Overijssel in the Netherlands. Because of that, findings are limited to the cultural context of the Netherlands. It could be that decision-making is influenced by cultural values, therefore future research should also take into account different cultural settings. Additionally, the outcome of this paper should not be generalized beyond the used sample. The results of this paper require future research with a bigger sample size for that. For example, a sample size of about 56, just like the research done by Reymen et al. (2015). By using that same sample size, a comparison could

be made between the research, to test if the made suggestions for technology-based companies also apply to any other company.

7. CONCLUSION

This research examined the approaches to strategic decision-making during the different stages of business creation. When going back to the original research question:

- Which approach or combination of approaches should entrepreneurs use in different stages of the business creation process?

When looking at both the literature and the sample, it seems like in the start-up stages, especially before the startup and within the first two years, effectuation does seem to be the most effective decision-making approach. That is because, in the startup stages, most companies do face higher degrees of uncertainty. When facing that uncertainty, being flexible seems like the better approach. When looking at the causal approach, it seems like over time the use of it does increase as uncertainty reduces a bit. However, even though the effectual approach gets used more, in practice we see that entrepreneurs mainly use a combination of both approaches when it comes to decision-making. Therefore causation and effectuation should not be seen as separate approaches. They should be seen as approaches that can and should be combined. We also see that the degree of uncertainty is not the only factor when it comes to what decision-making approach to use. We see that the kind of company, and the market it operates in is also a factor. For example, a company only selling one product is way different than a technology-based company that often needs bigger investments to develop its technology. Also, the vision of the entrepreneur seems to make a big difference in the choice of which decision-making approaches to use. For example, on the one hand, some entrepreneurs might want to be more careful with investing their money, and on the other hand, some entrepreneurs believe in their product or service so much that they are willing to do whatever it takes to succeed.

8. ACKNOWLEDGEMENTS

I want to thank the entrepreneurs that participated in my research. I was amazed by the entrepreneurial passion and creativity these entrepreneurs had. That inspired me in a lot of ways. I also want to thank my supervisor Dr. Martin Stienstra for the guidance he gave me during this research, which helped me a lot.

9. REFERENCES

- Alvarez, S., & Barney, J. B. (2005). How Do Entrepreneurs Organize Firms Under Conditions of Uncertainty? *Journal of Management*, 31(5), 776–793. <https://doi.org/10.1177/0149206305279486>
- Alvarez, S., & Parker, S. C. (2009). Emerging Firms And The Allocation Of Control Rights: A Bayesian Approach. *Academy of Management Review*, 34(2), 209–227. <https://doi.org/10.5465/amr.2009.36982616>
- Ansoff, H. I. (1991). Critique of Henry Mintzberg's 'The design school: Reconsidering the basic premises of strategic management.' *Strategic Management Journal*, 12(6), 449–461. <https://doi.org/10.1002/smj.4250120605>
- Baker, T., & Nelson, R. E. (2005). Creating Something from Nothing: Resource Construction through Entrepreneurial Bricolage. *Administrative Science Quarterly*, 50(3), 329–366. <https://doi.org/10.2189/asqu.2005.50.3.329>
- Bhide, A. (2000). The Origin and Evolution of New Businesses.
- Brews, P. J., & Hunt, M. D. (1999). Learning to plan and planning to learn: resolving the planning school/learning school debate. *Strategic Management Journal*, 20(10), 889–913. [https://doi.org/10.1002/\(sici\)1097-0266\(199910\)20:10](https://doi.org/10.1002/(sici)1097-0266(199910)20:10)
- Brinckmann, J., Grichnik, D., & Kapsa, D. (2010). Should entrepreneurs plan or just storm the castle? A meta-analysis on contextual factors impacting the business planning–performance relationship in small firms. *Journal of Business Venturing*, 25(1), 24–40. <https://doi.org/10.1016/j.jbusvent.2008.10.007>
- Chandler, G. N., DeTienne, D. R., McKelvie, A., & Mumford, T. V. (2011). Causation and effectuation processes: A validation study. *Journal of Business Venturing*, 26(3), 375–390. <https://doi.org/10.1016/j.jbusvent.2009.10.006>
- Chesbrough, H. (2006). Open Business Models: How to Thrive in the New Innovation Landscape. <https://ci.nii.ac.jp/ncid/BB00956812>
- Choi, Y. D., Lévesque, M., & Shepherd, D. A. (2008). When should entrepreneurs expedite or delay opportunity exploitation? *Journal of Business Venturing*, 23(3), 333–355. <https://doi.org/10.1016/j.jbusvent.2006.11.001>
- Delmar, F., & Shane, S. (2003). Does business planning facilitate the development of new ventures? *Strategic Management Journal*, 24(12), 1165–1185. <https://doi.org/10.1002/smj.349>
- Dew, N., Read, S., Sarasvathy, S. D., & Wiltbank, R. (2009). Effectual versus predictive logics in entrepreneurial decision-making: Differences between experts and novices. *Journal of Business Venturing*, 24(4), 287–309. <https://doi.org/10.1016/j.jbusvent.2008.02.002>
- Fischer, E., & Reuber, A. R. (2011). Social interaction via new social media: (How) can interactions on Twitter affect effectual thinking and behavior? *Journal of Business Venturing*, 26(1), 1–18. <https://doi.org/10.1016/j.jbusvent.2010.09.002>
- Haveman, H. A. (1992). Between a Rock and a Hard Place: Organizational Change and Performance Under Conditions of Fundamental Environmental Transformation. *Administrative Science Quarterly*, 37(1), 48. <https://doi.org/10.2307/2393533>
- Hmieleski, K. M., & Corbett, A. C. (2008). The contrasting interaction effects of improvisational behavior with entrepreneurial self-efficacy on new venture performance and entrepreneur work satisfaction. *Journal of Business Venturing*, 23(4), 482–496. <https://doi.org/10.1016/j.jbusvent.2007.04.002>
- Hough, J., & White, M. A. (2003). Environmental dynamism and strategic decision-making rationality: an examination at the decision level. *Strategic Management Journal*, 24(5), 481–489. <https://doi.org/10.1002/smj.303>
- McGrath, C., Palmgren, P. J., & Liljedahl, M. (2019). Twelve tips for conducting qualitative research interviews. *Medical Teacher*, 41(9), 1002–1006. <https://doi.org/10.1080/0142159x.2018.1497149>
- McKelvie, A., Haynie, J. M., & Gustavsson, V. (2011). Unpacking the uncertainty construct: Implications for entrepreneurial action. *Journal of Business Venturing*, 26(3), 273–292. <https://doi.org/10.1016/j.jbusvent.2009.10.004>
- McMullen, J. S., & Shepherd, D. A. (2006). Entrepreneurial Action And The Role Of Uncertainty In The Theory Of The Entrepreneur. *Academy of Management Review*, 31(1), 132–152. <https://doi.org/10.5465/amr.2006.19379628>
- Mintzberg, H. (1995). The rise and fall of strategic planning. *Long Range Planning*, 28(1), 125. [https://doi.org/10.1016/0024-6301\(95\)92105-2](https://doi.org/10.1016/0024-6301(95)92105-2)
- Mosakowski, E. (1997). Strategy Making Under Causal Ambiguity: Conceptual Issues and Empirical Evidence. *Organization Science*, 8(4), 414–442. <https://doi.org/10.1287/orsc.8.4.414>
- Priem, R. L., Rasheed, A. A., & Kotulic, A. G. (1995). Rationality in Strategic Decision Processes, Environmental Dynamism and Firm Performance. *Journal of Management*, 21(5), 913–929. <https://doi.org/10.1177/014920639502100506>
- Read, S., & Sarasvathy, S. D. (2005). Knowing What to Do and Doing What You Know. *The Journal of Private Equity*, 9(1), 45–62. <https://doi.org/10.3905/jpe.2005.605370>
- Read, S., Dew, N., Sarasvathy, S. D., Song, M., & Wiltbank, R. (2009). Marketing Under Uncertainty: The Logic of an Effectual Approach. *Journal of Marketing*, 73(3), 1–18. <https://doi.org/10.1509/jmkg.73.3.1>
- Reymen, I., Andries, P., Berends, H., Mauer, R., Stephan, U., & Van Burg, E. (2015). Understanding Dynamics of Strategic Decision Making in Venture Creation: A Process Study of Effectuation and Causation. *Strategic Entrepreneurship Journal*, 9(4), 351–379. <https://doi.org/10.1002/sej.1201>
- Sarasvathy, S. D. (2001). Causation and Effectuation: Toward a Theoretical Shift from Economic Inevitability to Entrepreneurial Contingency. *Academy of Management Review*, 26(2), 243–263. <https://doi.org/10.5465/amr.2001.4378020>
- Sarasvathy, S. D., Kumar, K. S., York, J. G., & Bhagavatula, S. (2014). An Effectual Approach to International Entrepreneurship: Overlaps, Challenges, and Provocative Possibilities. *Entrepreneurship Theory and Practice*, 38(1), 71–93. <https://doi.org/10.1111/etap.12088>
- Shepherd, D. A., Zacharakis, A., & Baron, R. A. (2003). VCs' decision processes. *Journal of Business Venturing*, 18(3), 381–401. [https://doi.org/10.1016/s0883-9026\(02\)00099-x](https://doi.org/10.1016/s0883-9026(02)00099-x)
- Wiltbank, R., Dew, N., Read, S., & Sarasvathy, S. D. (2006). What to do next? The case for non-predictive strategy. *Strategic Management Journal*, 27(10), 981–998. <https://doi.org/10.1002/smj.555>
- Zahra, S.A. and Wright, M. (2016), Understanding the Social Role of Entrepreneurship. *Jour. of Manage. Stud.*, 53: 610-629. <https://doi.org/10.1111/joms.1214>

10. APPENDIX

Appendix A: interview questions

Appendix B: Interviewee data

10.1 Appendix A

Interview questions:

1. Can you give me an introduction of yourself and tell me how you started the company?
2. Was there a lot of uncertainty before starting the company? What about within two years after the start? And what about after two years?

Dimension 1: Basis for taking action

3. Before starting the company, did you use your own recourses (e.g. capital or knowledge) or did you use other recourses (Loan)? And did that change within 2 years after the company had officially started? And after two years of the company starting?
4. Before the company started did you set any goals or did you just step in it to see where it was going to go? Did that change within two years after the official start? And after two years of the company starting?

Dimension 2: Risks and recourses

5. Before starting your business did you do analysis on possible future returns or did you just focus on minimizing costs and risks? Did that change within two years of starting the business? And what about after two years
6. Before you started the company, did you focus on maximizing the return or did you focus on what you were able to lose? Did that change within two years of starting the company? And what about after two years?

Dimension 3: Attitude towards outsiders

7. Before starting the business did you do any market research or did you look for feedback from stakeholders? Did that change within two years of starting the company? And what about after two years?
8. Before starting up were you looking for collaborative relationships with suppliers and customers or did you try to keep your competitive advantage by not sharing information with anyone? Did that change within two years of starting the company? And what about after two years?

Dimension 4: Dealing with unexpected events

9. Before starting your business did you try to predict certain events to avoid or were you just focusing on managing the business in the moment? Did that change within two years of starting the company? And what about after two years?
10. When plans were made before the start of your business, did you always stick to the plan or did you change the plan to react to the situation? Did that change within two years of starting the company? And what about after two years?

10.2 Appendix B

Interviewee data

Table 1: The amount of uncertainty faced

	<i>Before official start</i>	<i>Within 2 years after start</i>	<i>From 2 years after start and onwards</i>
<i>E1</i>	A lot of uncertainty	Uncertainty	A bit of uncertainty
<i>E2</i>	A lot of uncertainty	Uncertainty	Uncertainty
<i>E3</i>	Uncertainty	A bit of uncertainty	A bit of uncertainty
<i>E4</i>	A lot of uncertainty	Uncertainty	Uncertainty
<i>E5</i>	No uncertainty	No uncertainty	No uncertainty

Table 2: Before the official start of the company

	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Total
<i>E1</i>	E	CE	N	C	C	E	E	E	C3E5
<i>E2</i>	E	E	N	C	CE	CE	E	E	C3E6
<i>E3</i>	E	E	CE	C	C	E	E	E	C3E6
<i>E4</i>	E	C	CE	N	CE	C	CE	E	C5E5
<i>E5</i>	E	E	N	N	C	E	E	E	C1E5

Table 3: Within 2 years after the official start of the company

	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Total
<i>E1</i>	E	CE	E	C	CE	E	E	E	C3E7
<i>E2</i>	CE	CE	N	C	CE	CE	E	E	C5E6
<i>E3</i>	E	E	CE	C	CE	E	E	E	C3E7
<i>E4</i>	C	C	CE	N	CE	C	CE	E	C6E4
<i>E5</i>	E	E	N	N	C	E	E	E	C1E5

Table 4: From 2 years and onwards after the official start of the company

	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Total
<i>E1</i>	E	CE	E	C	CE	E	E	E	C3E7
<i>E2</i>	C	CE	N	C	CE	CE	CE	E	C6E5
<i>E3</i>	E	CE	CE	C	CE	E	E	E	C4E7
<i>E4</i>	C	C	CE	N	CE	C	CE	E	C6E4
<i>E5</i>	E	E	N	N	C	E	E	E	C1E5

Table 5: differences over time

	Before official start	Within 2 years after start	From 2 years after start and onwards	Difference
Causation	C15	C18	C20	+6
Effectuation	E27	E29	E28	+1
Combination (CE)	CE7	CE11	CE12	+5
Causation - CE	C8	C7	C8	0
Effectuation - CE	E20	E18	E16	-4