

Differences and similarities in decision-making logics used by entrepreneurs, a case study analysis

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ABSTRACT,

In the entrepreneurship literature, the effectuation theory has been defined as a mode of action, often used by entrepreneurs. Also, it was found that not every entrepreneur acts, reasons and makes decisions in the same way. This study will investigate similarities and differences of expert entrepreneurs in a case company, who start a new venture and face exactly the same set of decisions while building. The gathered information, my means of semi-structured interview as a qualitative method of research, should give insights in on what base entrepreneurs take decisions, and what factors could have influence on this. It was found that demographical factors of the entrepreneurs have influence on the mode of action they favor. Also, this thesis emphasizes the synergy that can be created when effectuation and causation are not seen as two polar opposites, both are used as hybrid logics.

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1. INTRODUCTION

Starting a new venture is a process that includes many challenges and complex decision-making. Entrepreneurs have to determine the right approach to achieve their goals with the means they have at the start. New firms have to figure out what they want to be, what the market demands from them and how they can settle themselves in this market (Brinckmann et al., 2010; Reymen et al., 2015). This comes with lots of uncertainty, and information is often lacking while they can't base their decisions on past experience (Alvarez & Barney, 2005). Brinckmann et al. (2010) distinguish two ways to cope with new venture creation: planning and emergence. Entrepreneurs have to figure out which logic they can use to succeed in reaching their goal. Or maybe they don't have a goal, but just look at what they are, what they have and whom they know. These modes of action can be seen as most comprehensible to the phenomenon that has been defined by Sarasvathy (2001, p245), as following: '*Causation processes take a particular effect as given and focus on selecting between means to create that effect. Effectuation processes take a set of means as given and focus on selecting between possible effects that can be created with that set of means*'.

Now, for more than two decades, researchers have tried to understand what effectuation and causation means in practice, and how they relate, interact or contrast each other. Perry et al. (2012) and Gregoire and Cherchem (2017); Grégoire and Cherchem (2020) have given an overview of this literature, which will be discussed in more detail in the following chapter. A field of research that is not part of this overview, is firstly, the work of Reymen et al. (2015) and later the study of Smolka et al. (2018) that explores the synergistic effects of effectuation and causation. They see the two approaches as a balance that both have good principles to help a business succeed to start and develop in their stages. As said, venture creation comes with high level of uncertainty (Alvarez & Barney, 2005). However, the combined use of effectuation and causation could help the new venture to profit and improve firms' performance, when the entrepreneur is able to select the decision-making logic that applies best under that specific circumstance (Smolka et al., 2018). In this, causation is a method whereby decisions involving predictable outcomes can better be taken. A scenario can be drawn with a desired finish point. The causal approach gives guidance in setting out action plans to receive these goals. Effectuation is more dedicated to exploring the options that are given and searching for what the entrepreneur can do with it. What effects can be achieved with these means, and which losses are affordable in this process (Sarasvathy, 2001).

Reymen et al. (2015) and Smolka et al. (2018) already have sketched out some thoughts on this balance between effectuation and causation. In some circumstances, one method has greater benefits over the other. It is thus important to try to understand when which method is used. What is still unknown, is how this synergy can most positively influence new venture creation and its development in specific situations. Which circumstances indicate that a certain method will result in greater advantage and when can they be used in conjunction? According to Saras Sarasvathy (2001), the expertise of the entrepreneur strongly determines whether they will lean towards causation, which means that the entrepreneur will use a planned approach while building a new venture, or that the entrepreneur will rely on effectuation and thus leaves the process open to the various

different unforeseen circumstances. As can be seen, a lot of space for discussion. Entrepreneurs could thus ask themselves the same question as Brinckmann et al. (2010) did: 'Should entrepreneurs plan or just storm the castle?'

This research will look at entrepreneurs/actors in the context of SMEs in the start-up phase. It analyzes the characteristics of the effectuation theory and investigates both modes of action used by the actors within those companies, and how the use of these differ and correspond among these entrepreneurs. To get a practical understanding of how these findings can be applied in the real business world, a representative case company will be used as a case study to mirror both approaches. To get a better view on what differences, but also commonalities exist in the decision-making logics used by the actors in the case company, these actors are investigated. What are the characteristics of the entrepreneur (e.g., background and experience)? What methods of action does this entrepreneur use in certain decision-making cases? This research aims to explain how these actors use both decision-making logics in certain scenarios in the context of new venture creation. It is assumed that one way, causation strives to ensure that the firm stays focused and predicts what is predictable. The effectual method allows flexibility to the ever-changing business environment in the starting phase and ensures that control remains in uncertain situations (Reymen et al., 2015).

To study this phenomenon, the question of this research will be formulated as following:

Which similarities and differences exist in the decision-making logics between actors in an SME who start with the same idea for a new venture and face the same set of decisions in building it?

To understand how the mutual use of the two approaches are situated, first, the elements of the effectuation theory need to be investigated, they need to be conceptualized. Then these elements need to be set in context and it needs to be clear how the operationalization of these concept would be shaped. Hereby, the entrepreneurs of the case company can be studied. At the end, a better insight at what both methods mean for the case company is derived and can be worked from.

This research will conduct a literature analysis, whereafter a qualitative study by means of semi-structured interviews will investigate how the elements of the effectuation theory are situated in the business environment of the case company.

This thesis tries to close the gap of understanding what the influence of the circumstances and situational aspects are on the use of effectuation and causation, which Reymen et al. (2015) sees as underdeveloped. It also studies the recommendations of Smolka et al. (2018) to further investigate the framework developed by Chandler et al. (2011) with the effectuation measures. Thereafter, it tries to investigate what characteristics of an entrepreneur might signal that he/she leans more towards effectuation, towards causation or a mix of both.

2. THEORETICAL FRAMEWORK

2.1 Effectuation, as a mode of human action

The effectuation theory was introduced by Saras Sarasvathy in 2001 and is further developed and investigated by her and her co-researchers. Also, several critical researchers, such as Chandler et al. (2011) and Gregoire and Cherchem (2017) have investigated the theory. As said in the previous chapter, the elements of this theory can be conceptualized. Sarasvathy (2001) distinguishes four principles, which differ in terms of the mode of action that the entrepreneurs use. She also distinguishes control and prediction as two decision logics, which are regarded the overarching principle, the one that rules them all. Thereafter, Sarasvathy (2009) has further elaborated on these principles, which resulted in five dimensions that summarize the overall logic of effectuation.

These principles are given in table 1:

Table 1

The Five Dimensions of Effectuation and Causation

Dimension	Effectuation	Causation
Bird-in-hand	Means at hand as given	Specific goals as given
Lemonade	Exploitation of contingencies	Use of pre-existing knowledge
Crazy quilt	Alliances/pre-commitment of stakeholders	Competitive analysis
Affordable loss	Affordable loss	Expected returns
Pilot-in-the-plane	Control	Prediction

As can be seen in table 1, here the mode of actions are categorized as stand-alone themes in the effectuation theory. Below is a more in-depth look at what these entail and how they stand in context.

2.1.1 Means vs. Goals

The first principle, also known as the Bird-in-hand, refers to the mode of action in venture creation where the entrepreneur acts on the basis of the set of means that it has at hand. These means can be identified by the questions: *'who am I, what do I know and whom do I know'* (Sarasvathy, 2001, p. 250). These are the three categories of means, which are in practice their identity, competencies and experiences (who am I), knowledge base (what do I know) and social networks (whom do I know) of the entrepreneur (Sarasvathy, 2009). Hereof, opportunities and possibilities can arise, which is the starting point to work from for this entrepreneur.

However, from the point of view of causation, an entrepreneur first defines goals, which is the finish line, and then works its way towards it. With the first mode of action, the entrepreneur creates something new with the means that are available at that moment, where using the second mode of action, the entrepreneur bases decisions on desired effects and he/she assembles the resources after the goal is set (Sarasvathy, 2009).

2.1.2. Contingencies vs. Pre-existing knowledge

The Lemonade principle, as this principle is also called, is about how entrepreneurs of new created ventures cope with unexpected changes (Sarasvathy, 2001). Effectuators see these as challenges, or better said opportunities, which could work in their advantage, rather than negatively affect them. They embrace this surprise factor. These opportunities should be leveraged where possible (Dew et al., 2018). These entrepreneurs are open minded towards a change of plans when new data or unexpected events suggest to do so. They do this, while this might lead to success or a novel way forward, using both the positive but also the negative contingencies (Dew et al., 2009). This also indicates that this part of the effectuation theory can be viewed as a more flexible approach, the entrepreneur adapts easily to the contingencies that arise (Chandler et al., 2011).

Nevertheless, causal entrepreneurs that prefer using pre-existing knowledge to write business plans that sketch out the resources to be acquired, could also want to avoid contingencies to happen. This could harm their predetermined plan, which forms the base of their competitive advantage. They thus want to minimize the probability of unexpected outcomes, by for example making 'what-if' scenarios to deal with worst-case scenarios (Chandler et al., 2011). Thereby these surprise could be avoided or quickly overcome to reach the given project targets set in the business plan (Brettel et al., 2012).

2.1.3. Partnerships vs. Competitors

This dimension, which is named the crazy quilt principle, is, together with the bird-in-hand principle, crucial for those from the effectual frame. It emphasizes the input from self-selected stakeholders who believe in the new created venture and product/service. They make commitments in the early stages, which could reduce uncertainty and create barriers to entry. These entrepreneurs using the effectual logic, allow pre-committed stakeholders that show real interest in joining the venture to actively help shaping the new business (Sarasvathy, 2009). Also building partnerships/strategic alliances, with e.g. suppliers, customers or investors to shape the trajectory of the new firm are part of this principle (Dew et al., 2018). All these aspects help to reduce uncertainty, spread costs and risks over the partners and cocreate the new market with the interested participants (Grégoire & Cherchem, 2020). These alliances are also an important source to extend the resources they have their disposal, financial as well as with regard to expertise and knowledge.

On the other hand, entrepreneurs following the causational approach use competitive analysis, and market research to reduce uncertainty by identifying strengths and weaknesses of actors that could affect the business (Brettel et al., 2012; Sarasvathy, 2009). Arend et al. (2015) see this aspect of the effectuation theory as underspecified, while e.g., contextual competition and other sector related forces are missing (for example substitutes). They argue that a firm's success depends on the strength of these competitive forces.

2.1.4. Affordable loss vs. expected returns

Affordable loss, as defined by Sarasvathy (2001), defines how the entrepreneur limits risk by understanding what he/she is willing to lose in the start-up phase of the venture. This affordable loss can be in monetary terms, but also time, effort and emotional restrictions. When an entrepreneur has sleepless night

due to a certain decision, the affordable loss is high. To have the lowest affordable loss, the entrepreneur experiments with different strategies, using the means at hand (as in the bird-in-hand principle), which can create new means and opportunities, while the focus is on reducing the effects when the downside ends up happening (Dew et al., 2018).

Relating to the goals set in the first principle, the causal approach of this principle first sets targets for potential returns, which should be maximized, by selecting the optimal way-to-go. Here, the projects with the highest expected returns are adopted, while using predictive models and making assumptions to cope with the uncertainty that comes with these decisions (Sarasvathy, 2009). The focus is thus on the upside potential.

2.1.5. Control vs. Prediction

The last principle of effectuation as a mode of action of entrepreneurs starting a new venture is the pilot-in-the-plane principle. It could be seen as an overarching guiding notion (Grégoire & Cherchem, 2020), the one principle to rule them all. This could be best described, for the effectual frame, by the premise of Sarasvathy (2009, p17): *'to the extent we can control the future, we do not need to predict it'*. Hereby, she means that an entrepreneur using the effectual logic, has a certain view towards the world and its inhabitants. They see the world as still in-the-making, and human action as the dominant factor of shaping the future (Sarasvathy, 2009), and thus also shaping the new venture. The belief is that the future is neither found nor predicted, but rather made. As Sarasvathy (2009) argues, the entrepreneur is the determining factor in scenarios where decisions are taken under extremely uncertain conditions. It is the value that the entrepreneur provides, that goes beyond knowledge and available resources, which makes the venture a success in these times, where nobody could have thought about what the future will look like. Elements of the effectual logic that entrepreneurs use, are for example recognizing and discovering opportunities, as well as not seeking to avoid failure, but seeking to make success happen. They survive failures by keeping them small and kill them young, and cumulating successes through constant leverage (Sarasvathy, 2009).

The causal approach is determined by Sarasvathy (2009, p17): by the statement: *'to the extent we can predict the future, we can control it'*. This process thus focusses on the predictable aspects of an uncertain future. The entrepreneur chooses between alternative means or creates new means, by making calculations based on predictions of pre-selected favorable ends, to predict the future (Dew et al., 2009; Sarasvathy, 2009). Using this decision making logic, control flows from the ability to predict (Dew et al., 2018).

2.1.6 Simultaneous use of the both decision-making logics

Some researchers conceptualize the above logics as mutually exclusive (Brettel et al., 2012), while other researchers found evidence that entrepreneurs combine both logics in their way of working (Dew et al., 2009; Fisher, 2012; Reymen et al., 2015; Sarasvathy, 2009; Smolka et al., 2018). The field of study is thus divided. Entrepreneurs are likely to shift from one decision making logic to the other, or combine them (Read & Sarasvathy, 2005). This hybrid approach, as Reymen et al. (2015) call it, demonstrates how the two logics are used intertwiningly in the decision-making process during the start-up phase. They see that this phenomenon is happening, rather than using one logic

exclusively at the time. When you assess the sentiment of what is said above, it can be said that optimal decisions result from a combination of both logics (Reymen et al., 2015). Hereby, causation ensures that the firm stays focused on the long-term goals and is best used in decisions involving predictable outcomes, while effectuation allows flexibility to the unstable environment of the start-up firm and maintaining control over unpredictable aspects of the business. Neither causation nor effectuation is defined as the superior approach, but synergistic effects can be reached by the simultaneous use. They are complementary logics, states Smolka et al. (2018) and they also argue that if the entrepreneur is able to always select the best suitable decision-making logic at that certain condition, the new firm is likely to profit from this.

Smolka et al. (2018) suggest that the synergistic effects that can emerge from using both the causal and effectual mode of action have effects on how the venture performs. Stakeholders that can create value for the new venture are key actors in the starting phase. New ventures can experience a head start, when self-selected stakeholders actively promote the firm, give advice and bring in their means, they argue. Regarding the principle of affordable loss, they conclude that firms and their entrepreneurs, who behave in a less loss-averse way of working perform better (Smolka, 2018). But this also can have a downside, which they recommend to further investigate. These businesses can fail cheaply and restart quickly, which can reinforce learning as an entrepreneur, but this does not mean that the business will perform better as a result. Looking at the causal mode of action, firms can be better off when actually making profit forecasts and sales planning. Hereby, it signals to investors that they are willing to grow with the firm and they give insights in the ability they have for this. Planning is thus also a beneficial aspect that needs to be considered in the balance that will be made up (Brinckmann et al., 2010). These plans can serve as a roadmap that can be deviated from, while still remaining flexible when new information comes to light and unexpected events occur, which can lead to opportunities (Smolka et al., 2018).

2.2 Propositions

Looking at the literature given above, the following propositions are stated per dimension:

Table 2

Propositions to the Five Dimensions of Effectuation and Causation

Dimension	Proposition
Means vs. Goals	Entrepreneurs in the start-up phase tend to prefer to work with the means at hand rather than defining goals
Contingencies vs. Pre-existing knowledge	Entrepreneurs will always be open to leverage contingencies into opportunities, but will also use business plans in the start-up phase
Partnerships vs. Competitors	Entrepreneurs favor establishing partnerships over analyzing their competitors during new venture creation
Affordable loss vs. expected returns	Entrepreneurs in the starting phase focus more on what they can lose, rather than what they can gain
Control vs. Prediction	Entrepreneurs in the start-up stage favor control over prediction

3. METHODOLOGY

3.1 Case study

In this research, the focus is on a new created SME, which is an exclusive wholesale firm in the sustainability market. This company is relevant as a case because it contains several aspects attributed to effectuation theory in the literature. There is the unique supplier with a product that includes intellectual property rights, that in coherence with the case company invests in co-creation of the product. Also, the firm relies on stakeholder precommitments at an early stage, which helps shape the potential future. The results gathered from these actors will contribute to the value of the conclusion that can be drawn. Looking at the literature given in the previous section and the insights of these researchers, it is expected that the actors within the environment of this SME will differ in both using the causal and the effectual mode of action in the start-up phase, but that they use these logics also simultaneously.

3.2 Sample

The sample consisted of six participants, which are all active within the firms' environment. All six have a considerable influence in the firms' operations and decision-making processes. In Appendix 2, an overview of the sample characteristics can be seen, which are received by asking questions to collect this demographical information. Within this research, the focus lies on Dutch entrepreneurs. The sample can be said to be representative for other starting SMEs, as these interviewees are people that operate or have operated in general sectors, such as the financial sector, construction industry, hospitality industry, educational sector or as entrepreneurs in other sectors. The interviews took place between 08-06-2022 and 15-06-2022.

3.3 Methods

This study is qualitative research, by use of semi-structured interviews. This type of research was chosen, to gain a rich amount of feedback, and to collect answers to questions that could have been overseen when conducting surveys. These interviews were held with the actors of the case company, as sketched out in the sample in chapter 3.2. The questions of these interviews were set out by means of a dichotomy. So, either way it leans towards the effectuation approach, or a more causal logic, or a mix of both. The elements of the literature, especially from Sarasvathy (2001, 2009) sketched out in the previous chapter are at the base of these questions, and the measures defined by Chandler et al. (2011). Also, the last two questions included gut feeling and expertise as measures of effectuation. This study uses a quantitative scale, but for this research, the measures were studied qualitative. Thereafter, there was discussion with an expert in effectuation theory about the dataset, which this expert found to be representative. The interview questions explore each of the concepts of effectuation and causation and will give insights about how the interviewee acts on the balance between the two logics. The interview protocol with the questions can be found in Appendix 1. As can be seen in the protocol, the interviewees were given a certain amount of context to the questions, to better understand the theory and aspects of the theory, that could be unknown for them. All interviews were held in person and are recorded, after consent was asked. The recordings of these interviews are available via the author of this thesis. The interviews were conducted in Dutch, as the interviewees native language is Dutch. This way, a higher

quality conversation could be reached, while the language barrier is tried to be minimized. For the sake of transparency and understanding of readers of this article, the introduction and closing part were translated to English.

3.4 Analysis

Given the short time frame that is available to conduct this research, it was not reachable to do a thorough analysis through coding techniques. As said in chapter 3.2, the interviews will be analyzed in a way that the essence of the answers that were given by the interviewees will form the base to be assigned to the concept of effectuation or causation, or the mix of both. A given logic is assigned only if components of their answers recur in concepts known in the literature. From this, the patterns and modes of actions of the actors are analyzed. This can thus be seen as a content analysis. By categorizing the answers of the actors, conclusions can be drawn about how this actor influences the firm in terms of the effectuation theory.

The first interview was defined as a pilot interview, to test and assess whether interviewees understand the questions and whether the answers given are in line with the concept of effectuation. No questions were adjusted, the interview protocol was retained as initially designed. However, question 9 is not included in the results. During the pilot interview and also other interviews, it appeared that the question was not understood. The data resulting from this will therefore be less reliable, and for this reason it was decided not to add it.

As can be seen in Appendix 3, this table represents the results of the interviews. The 'X' indicates that no decision-making logic was applicable to the answer of the interviewee. This means, that the answer gave no actionable insight to the question that was asked. To prevent bias, only answers that are explicitly given are included, and answers marked as 'X' are not included. When from an answer explicitly could be derived that the entrepreneur leans towards a mix of the two logics, this is listed as a 'B'. This is assigned when it can be emphatically derived from the essence of his story that he uses components of both logics. An example is when he indicates that he is looking at what he expects to be gained, but also is considering the risks and what he has to lose. Sometimes questions were interpreted differently, so that the answer that was given would better fit to another principle, than the principle that was represented by a certain question. This result is then placed in the right dimension, as a representation of the data collected from it. As an example, the answer '*making turnover and profit, to fulfill the financial obligations (salary, monthly expenses) as the sole purpose of a starting company*' of an entrepreneur, represents the dimension of affordable loss vs. expected returns. Nevertheless, this answer was given to question 2 that represented the means vs. goals dimension.

4. RESULTS

This chapter discusses the main findings of this research. These are discussed along the five principles of effectuation and causation. The table with the categorization of the answers given by the entrepreneurs can be found in Appendix 3.

At the start of the interview, a little context was provided on effectuation theory. After this, the question was asked which logic the entrepreneur identifies himself with, or why a mix of both. 5 out of 6 respondents answered that they apply both logics in their daily operations and decision-making. The only

entrepreneur that indicated that he used the emergent approach, he said: *'I leave the creation of vision to others, I am inventive to start something with my own means or to join something, and to jump into the deep end by thinking in terms of solutions.'*

After that, questions were asked to get an in depth understanding of the various principles. Starting with the principle of **Means at hand vs. Goals as given**, the answers given at questions 2 varied a lot. Three entrepreneurs argued that the means at hand were the starting point of the new venture, being monetary means, but also unique knowledge in a particular field. One sold his shares in a company he participated in, which gave him the financial assets to start a new venture himself. Another had gained such work experience in the technical working field, that he thought he had sufficient means (knowledge) to start for himself. Two other entrepreneurs used both a goal, as the means at hand to start the new venture. Entrepreneur 6 leans towards the causal logic. Also, 5 out of 6 entrepreneurs had used opportunity recognition as a method to start their venture or analyzed a gap in the market (as obtained from question 3). Entrepreneur 4 started with his venture due to the means he acquired by selling his stake (effectual method of action), but he mentioned that later on, when his company had started, a demand in the market arose.

Next, looking at the principles of **Contingencies vs. Pre-existing knowledge**, from the table in Appendix 3 can be observed that a preference for the use of the effectual approach is there, but also using both logics simultaneously is happening. 3 of the respondents indicate that they are flexible in the starting phase and develop the firm as opportunities arise (looking at interview question 4). Entrepreneur 4, that signals a more causal approach, sees opportunities as an exception and works strategically and as planned. The other two entrepreneurs use a mix of both aspects. Question 5 was answered by all entrepreneurs by the tendency to always seize opportunities. Two entrepreneurs complemented this by saying that you should already think about this (for example, through a SWOT analysis), and incorporate it into your plans. One of them is actively searching for opportunities by being active in association and business life, to follow trends and developments. Answers to question 6 indicated that 5 out of 6 entrepreneurs leverages contingencies, by evaluating and adapting.

Regarding the principle of **Partnerships vs. Competitors**, all the entrepreneur showed that they consider networks and partnerships as very important (as derived from question 7). They indicated that they collaborate with self-selected partners, to share risks and bring more resources together, and also because you have limited knowledge as an individual. Entrepreneur 4 says about it: *'a partnership can work both ways, the collaboration can lead to an acceleration of reaching the goal'*. When the question was asked if they lean more towards predicting models to analyze competition, or towards partnerships in their decision-making (question 8), 3 out of 6 entrepreneurs favor partnerships over competitive analysis. Two entrepreneurs tend to work with both, as they revealed. Entrepreneur 4 said: *'One can lead to another. They are extensions of each other. They are complementary and not opposite.'* Entrepreneur 2 knows its competitors, but tries to outsmart them through patents, by making it known to technical research bodies and by seeking strategic partners, thus creating a dominant position in the market (as an answer to question 10). This indicates that he is applying both logics. 3 out of 6

respondents tend to apply the effectual logic, by for example trying to collaborate with competitors. Entrepreneur 4, that uses a mix of both, told in the interview: *'Competition is influential, you watch it, you crib and sometimes you steal something from them, but you keep your feet on the ground. Every company has its own culture, its own people, which is leading'*.

The principle of **Affordable loss vs. Expected returns** had two questions. Question 11, that asked how the entrepreneurs look at the trade-off between risk and return, was answered very united, doing business means risk, they all stated. They all lean towards the effectual logic. All entrepreneurs only talked about how they weigh the risks and what they think about them. However, no one spoke explicitly about the expected outcome they thought they would achieve by taking this risk. Entrepreneur 4 quoted, in line with the affordable loss principle: *'I taught myself something. You make the trade-off, what can I afford to lose? If the answer is almost zero, then you don't know what you can gain yet, but you have to do it'*. Then the question was asked, how they try to minimize risk (question 12). The answers that the entrepreneurs gave were very dispersed. Three entrepreneurs said they try to decrease risk, by the contracts they enter into with suppliers/manufacturers, as well as sole rights to sales and patents. Entrepreneur 5 also believes that to hedge risk, it is important to not only invest financially, but in particular to invest in people with vision and knowledge. Respondent 4 indicates that risk analysis is part of reducing risk, which is subject of a business plan, as is the SWOT analysis. Overall, the answers refer to the planning approach.

Lastly, the overarching principle **Control vs. Prediction** is represented by three questions, which are asked in a dichotomous way. Looking at the answers given at question 13, 3 out of 6 respondents see their market as not predictable, whereas 2 see them as predictable. They argue this, since the government has announced general objectives about sustainability to be achieved by society and companies, which affect business operations. However, entrepreneur 2 says about this: *'while sustainability is a hot topic, the market remains unpredictable, since a lot changes due to external factors'*. The two other entrepreneurs think that they can control the market, while the demand is there. As can be seen in the table in Appendix 3, in question 14 and 15 a preference for using the effectual approach or a mix of both is observable. The entrepreneurs were asked how one way, they try to avoid failure, on the other hand make it a success. Entrepreneur 3 said: *'At the start of the company you try to avoid failure by bringing in the right people who can strengthen you. If the combo is right, you will automatically create a success'*. Entrepreneur 6 says that you should not grieve over failures but learn from them and move on. 3 out of 6 entrepreneurs answered to question 16 that they try to control the future by means of own actions, which indicates an effectual approach. Two respondents used both logics, as entrepreneur 2 said: *'we predict the future based on what our strategic partners are saying, experiencing and how they are positioned in the market. From this we act'*.

Also, there are three questions included in the list of interview questions, which do not correspond literally to the concepts defined in the principles by Sarasvathy (2009). These are experimentation (question 16), gut feeling (question 17) and entrepreneurial expertise (question 18). Experimentation is a construct investigated by Chandler et al. (2011) and included as a measure of an effectuator. 5 out of 6 entrepreneurs indicated

that they have used experimentation in the starting phase, for various purposes. Entrepreneur 2 said: *‘through the initial investment the freedom was given to test, trial and error but above all to develop’*. As explained in section 3.3, gut feeling was also integrated in an interview question, to measure the mode of action of effectuation. Entrepreneur 1 said that he totally dislikes using gut feeling for decision-making, because he prefers acting rationally. However, all other entrepreneurs state that gut feeling is influential, because sometimes you need to learn it the hard way, learning by doing. This ties in well with the last question (18), which is about expertise. Experience is found to be crucial in decision making. Entrepreneur 4 additionally indicates: *‘all knowledge is limited, but the more you know, the greater your span of control. There is always someone who knows more than you, but it can be leading, when you are an expert in the field of that knowledge’*.

4.1 Propositions and results

Looking at the results given above, the answers of the entrepreneurs indicate if they agree (represented by a ‘A’) or reject (represented by a ‘R’) with the propositions that were sketched out in chapter 2. A breakdown of these results can be seen in this table:

Table 4

Agreement or Rejection of the Propositions

Dimension	E1	E2	E3	E4	E5	E6
Means vs. Goals	A	R	A	A	R	R
Contingencies vs. Pre-existing knowledge	A	R	R	R	A	R
Partnerships vs. Competitors	A	A	A	R	A	A
Affordable loss vs. expected returns	A	A	A	A	A	A
Control vs. Prediction	A	R	A	A	R	A

5. DISCUSSION

5.1 Key findings

As can be seen from the results set out in the previous chapter, commonalities can be seen related to the literature, but also deviating results occur. Looking for example at the principle of affordable loss vs. expected returns, all entrepreneurs were like-minded. Every entrepreneur looked at what he could afford to lose and weighs it against the risks. However, it is remarkable that the expected return was not considered at all. This could be explained by the finding of Dew et al. (2009), that expert entrepreneurs (more than 15 years of experience) are more concerned with project affordability. Also, elements of the crazy quilt principle can be affected by the fact that this research investigates a group of expert entrepreneurs. It is said that expert entrepreneurs, compared with novices, prefer to build new ventures with partners (Dew et al., 2009). Looking at the results, all entrepreneurs had a similar reasoning, namely that partnerships and self-selected stakeholders are important. This supports the findings of Smolka et al. (2018), that obtaining

commitments from self-selected stakeholders is vital for the new created venture.

This thesis also adds insight to the suggestions of Brinckmann et al. (2010); Reymen et al. (2015); Smolka et al. (2018) that effectuation and causation should not be seen as a dichotomy, but as a hybrid strategy that could create a synergy when the entrepreneur is able to choose the right logic for that specific situation. The interviews were structured and conducted in a dichotomous way, but the results indicate, as well as the entrepreneurs, that the two modes of action should not be seen as mutually exclusive, polar opposites. The entrepreneurs were found to use both sides of the dichotomy for different principles of effectuation. This is simply reflected in how often ‘B’ was assigned in the results table. Also, there seems to be a correlation between the educational background of the entrepreneur and the hybrid use of both logics. Entrepreneurs that studied in the field of business administration have more ‘B’s’ than entrepreneurs with no business-related educational background. Also, it can be seen that entrepreneurs that did not have a business-related study tend to use the effectual decision-making logic more often. Thereby, this study adds insight to the educational background of an entrepreneur as an independent variable that has influence on the mode of actions that the entrepreneur is expected to use.

Furthermore, when the demographics of the respondents are compared, and these are plotted against the answers they give, a few things stand out. Firstly, a contrast appeared between the entrepreneurs with an educational background in business administration and/or at a university, compared to the entrepreneurs that have a technical/practical educational background. The first group of the sample seem to answer thoroughly, more detailed and theory was incorporated into their reasoning, whereas the practitioners gave short and superficial answers. They also answered relatively more questions that ultimately could not be attributed to a logic.

5.2 Academic implications

Several implications on theory and literature of academic entrepreneurship can be drawn. This study shows that this way of qualitative research does not correspond one to one with how it is set out by quantitative research, which also may depend on the sample. Nevertheless, by using a qualitative method using semi-structured interviews, reasonings of entrepreneurs were exposed, that uncover aspects that had not been discovered by quantitative measures/surveys. For example, entrepreneur 1 immediately answered that he is a rational man, who uses the causal logic in his work. However, when he elaborated on this, several aspects were exposed that indicates that he also uses the effectual logic. From the results can be seen that he even is regarded effectual more times than causal. This finding emphasizes the use of both qualitative as quantitative measures and methods when studying the effects from effectuation on entrepreneurship.

Another important finding was, resulting from this sample, that constructs of the principles of effectuation, set out as a dichotomy, were not perceived as a dichotomy by the respondents, which the answers and results represents. This is supported by the work of Reymen et al. (2015) and Smolka et al. (2018). For example, the principle of partnerships vs. competitors was a dimension that the respondents found not to be polar opposites, but complementary constructs. Also,

planning, as well as using the flexible approach towards new venture creation were regarded as modes of action often used by the entrepreneurs. Smolka et al. (2018) called this entrepreneur that works using both logics intertwiningly, which can result in a synergy '*the practical effectuator*' (Smolka et al., 2018, p21). This research highlights the previously discovered findings, used by entrepreneurs working together in the case company.

5.3 Practical implications

This thesis demonstrates the usefulness of using causal and effectual logics interchangeably when building a new venture. The findings strongly suggest the importance of using the '*hybrid logic*' (Reymen et al., 2010, p374) during an entrepreneurial process. Hereby, the entrepreneur can use one way the causal approach, which gives guidance in setting out action plans to receive goals. The other way, he/she could use effectuation as more dedicated to exploring the means and options that are given and searching for what he/she can do with it. Also, this research shed a light on the characteristics of the used sample (male, +50 years and +15 years of experience as an entrepreneur). This gives insights for other entrepreneurs, for example a novice entrepreneur, in how the entrepreneurs from the sample of this study reason, act and manage their firm. Hereby, it could enable both parties to understand each other better, and recognize that they both have good reasons to make decisions the way they do.

5.4 Limitations and suggestions for future research

Firstly, the researcher of this study personally knew all the respondents. This can be seen as convenience sampling. One way, this smoothens the flow of the interviews, but on the other hand, this can result in biased results. Entrepreneurs could answer in a certain direction, while he expects others in their business environment to react similarly. Hereby, under- or overrepresentation of the population could emerge, which makes this sample difficult to generalize for the population. Using a known sample as a researcher, also makes the study more difficult to replicate.

Future research could benefit from studying a sample of entrepreneurs that was chosen, by sampling respondents who have no link to the author. Also, taking more than one company as a case company could help minimizing the presented bias.

Secondly, due to the time frame that was available to write this thesis, the sample was limited to six interviews. As a result, exploratory research has been used in the short term, but in the long term, other partners that may be of significance should be involved. Because of this, the sample may for now be difficult to generalize for the population, partly also, because this sample consisted only of men, aged +50 years who have been entrepreneurs for years (all +15 years of experience as an entrepreneur).

Future research could examine a sample where demographics differ, based on gender (research women), age (study a younger sample) and the number of years as an entrepreneur (investigate novice entrepreneurs). All these sample characteristics could then be compared back to the demographics given above of this study. Comparing novice entrepreneurs with the expert entrepreneurs in this sample could be particularly interesting, since Dew et al. (2009) expect several differences to emerge.

Lastly, results could contain bias, while a qualitative research was done. As said in the methodology, the interviewees were given a certain context before answering the questions. This context could be binding in the way they set up their answers. As said in the implications, this bias can also emerge to the quantitative measures, originally sketched out in English, that were transformed and translated into Dutch qualitative measures, by means of the interview questions. Hereby, a language bias could arise, as well as aspects that are interpreted or answered differently when examined qualitatively.

Future research could use both quantitative analyses as qualitative measures, by means of starting with a survey, and deepen the insights by means of interviews. Also, investigating a case company where an interview in English will not result in a language barrier, can prevent for language bias.

Another field that remains to be investigated, also suggested by Smolka et al. (2018), are the measures of Chandler et al. (2011). As discussed above, this research signals that the construct '*experimentation*' seems an unstable construct as a measure of effectuation. Looking at the answer given at the question that represented this construct, the answers remained vague and did hardly correspond to the aspects belonging to the construct, sketched out by Chandler et al. (2011). Therefore, more research is needed to investigate and refine this construct, as well as the two constructs that were included in this research: '*gut feeling*' and '*expertise*'. Lastly, this study investigates the modes of action the entrepreneurs use while building new SMEs. Future research could further investigate what would change when the new firm develops to the other stages of the business life cycle.

6. CONCLUSION

The purpose of this research was to examine the following research questions:

Which similarities and differences exist in the decision-making logics between actors in an SME who start with the same idea for a new venture and face the same set of decisions in building it?

The overall pattern that can be viewed from this study, supports the expectations stated in the propositions that flexible decision-making (effectual approach) by entrepreneurs is more prominent in the start-up phase of SMEs than the causal mode of action. Looking at the five principles, we can conclude the following:

Similarities are found for the crazy quilt principle, as all entrepreneurs tend to reason the same, where they only weigh what they have to lose. Also, all entrepreneurs see partnerships as dominant for venture creation and starting a new business as particularly risky.

Differences can be found in other principles. The entrepreneurs each deal differently with the means at hand, and some entrepreneurs set goals, whereas others do not. Also, the entrepreneurs each have their own view on how they cope with contingencies and risk. Furthermore, not all entrepreneurs have the same opinion about rather controlling or predicting the future.

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APPENDIX 1

Interview protocol

Part 1: Introduction

O I am Jelle Golbach, an International Business Administration student at the University of Twente. For my Bachelor graduation, I am doing a thesis research on effectuation within SME companies.

O The research focuses on the individual method shareholders (founder/entrepreneur, investor, business consultant etc.) of SMEs use in their business operations and decision-making, and the influence this has on their cooperation. Through semi-structured interviews, I try to find out what practices are used by the interviewee. The results are intended to help these partners to improve their cooperation.

O This interview will be recorded. Please ask the interview participant for their agreement to participate in this research and inform them that they can withdraw from the research at any time without explanation/justification. The recording is accessible only for myself, and will not be shared without written permission from the interviewee.

O All information obtained through this research will be treated as confidential. The elaboration of the interview will only be viewed by me and my supervisors. Further, the interview is completely anonymized

O When the research is completed, I will share the results with you, if desired.

O The interview will last about half an hour, it might take a little longer or shorter. We will now start the interview.

Part 2: Interview questions

Control questions/variables: can you introduce yourself and include the following aspects:

- How old are you?
- What education have you completed?
- Current occupation?
- How long have you been an entrepreneur?
- What sector do you operate in, or have you operated in?
- Have you also been an employee in these sectors?
- How did you start your first business?
- Have you undertaken any further notable business-related activities?

Effectuation or causation

- 1) In de ondernemerschapstheorie worden twee methodes van acties en besluiten nemen genoemd. Dit zijn effectuation en causation. Effectuation houdt kort gezegd in dat de ondernemer gebruik maakt van de beschikbare middelen en informatie, wanneer nieuwe informatie beschikbaar komt experimenteert of zich aanpast, en vertrouwt op controle in plaats van voorspellen. De controle ligt dus bij wat de ondernemer zelf kan doen en de waarde die hij biedt, maar ook de mensen die ze kennen, die iets voor hem/haar kunnen doen. Causation heeft te maken met causaal/rationeel redeneren, handelen naar business plans en planning, en de visie op gestelde doelen in de toekomst. Hierin speelt ook de verwachte opbrengsten/rendementen van deze doelen een belangrijke rol.

Welke methode vind je het meest van toepassing op jouw handelen en waarom, of waarom een combinatie van beide?

Means vs. Goals

- 2) In welke mate had je een doel voor ogen bij het opstarten van je bedrijf, of was het startpunt de middelen (zijnde wie je bent, wat je weet en wie je kent) die je op dat moment voorhanden had?
- 3) In welke mate vind je dat bent ingesprongen in een gat of vraag in de markt, met het nieuwe bedrijf of ontstond het bedrijf afgezien daarvan?

Contingencies vs. Pre-existing knowledge

- 4) In welke mate en met welke functie gebruik je een business plan (strategie) en korte en lange termijn planning in je bedrijfsvoering, of ben je flexibel hierin en ontwikkel je het bedrijf naarmate de kansen zich voordoen?
- 5) Hoe ga je om met kansen die zich voordoen of middelen die ter beschikking komen tijdens het proces van bedrijfsvoering in de startfase?
- 6) Hoe ga je om met onvoorziene omstandigheden?

Partnerships vs. Competitors

- 7) Wat is de invloed van partnerschappen, zogenoemde strategic alliances, voor de bedrijfsvoering of besluitvorming? Voor welke doeleinden zet je deze in?
- 8) In welke mate vertrouw je op voorspellende modellen (zoals marktanalyse, concurrentieanalyse en klantanalyse) of de hiervoor genoemde partnerschappen bij het maken van beslissingen?
- 9) Hoe zie je de invloed van stakeholders, dus personen of bedrijven in de directe sfeer/sector/markt van het bedrijf, op de bedrijfsvoering en besluitvorming?

10) Hoe zie je invloed van concurrenten op je bedrijfsvoering of besluitvoering?

Affordable loss vs. Expected returns

11) Hoe sta je enerzijds tegenover het nemen van risico in bedrijfsvoering en besluitvorming, en anderzijds tegenover hetgeen dit je zal opbrengen, de resultaten hiervan dus?

12) In welke mate en op welke manier probeer je risico in de bedrijfsvoering te verminderen?

Control vs. Prediction

13) In welke mate denk je dat de markt waarin je opereert voorspelbaar is, en welke aspecten daarvan liggen binnen je bereik om te beheersen?

14) In welke mate probeer je bij het opstarten van een business een mislukking te voorkomen, of van de andere kant ervoor te zorgen dat de onderneming een succes wordt?

15) In welke mate probeer je ofwel de toekomst te voorspellen en naar deze voorspelling te handelen, ofwel de toekomst te maken en proberen te beïnvloeden en controleren door eigen handelen?

Experimentation

16) In welke mate is experimenteren met de beschikbare middelen een onderdeel geweest van de startfase?

Gut feeling

17) Hoe beïnvloed je onderbuikgevoel en je instinct je in je bedrijfsvoering en besluitvorming?

Expertise

18) Welke rol speelt je expertise in je bedrijfsvoering en besluitvorming?

Part 3: Closing

O Thank the participant for their time and cooperation with this study.

APPENDIX 2 – INTERVIEW CONTROL VARIABLES

Respondent	Gender	Age	Completed education	Current occupation	Industries operated in	Years of experience as entrepreneur
1	M	74	Business Administration (University)	CEO	Sustainability, retail, banking, industrial	27
2	M	60	Pre-vocational secondary education	CTO	Sustainability, construction	40
3	M	52	Secondary vocational education	Owner + founder + director-major stakeholder	Construction, sustainability	18
4	M	67	Civil Engineering (college) + Law (university) + mediation (courses)	CEO / director-major stakeholder	Consultancy, real estate, investments, politics, construction	37
5	M	50	Business Administration (college) + courses in sales, strategy and management	CEO / director-major stakeholder	Construction, industrial, sustainability	16
6	M	53	Elementary school	CEO / director-major stakeholder	Construction, real estate, hospitality, sustainability	27

APPENDIX 3 – INTERVIEW ANSWERS FROM THE ENTREPRENEURS

<i>Entrepreneur</i>	<i>Questions</i>									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	B	E	C	B	E	X	E	E	X	E
2	B	B	C	E	E	E	E	E	E	B
3	B	E	C	E	E	E	E	E	B	X
4	B	E	E	C	B	E	B	B	X	B
5	B	B	C	B	B	E	E	B	B	E
6	E	X	C	E	E	E	E	X	X	E

<i>Entrepreneur</i>	<i>Questions</i>								<i>Total</i>
	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	
1	E	C	X	E	E	E	C	B	$9E+4C+2B+2X$
2	E	B	B	E	B	E	E	E	$10E+1C+6B+0X$
3	E	C	C	B	E	X	E	E	$10E+3C+2B+2X$
4	E	C	E	B	X	E	B	E	$7E+2C+7B+1X$
5	E	C	C	B	B	E	E	B	$6E+3C+8B+0X$
6	E	X	E	E	E	E	E	X	$12E+1C+4X$

E = Effectuation

C = Causation

B = Both effectuation and causation

X = No logic applicable

Q9 = excluded from dataset