MASTER THESIS

The simultaneous application of effectual and causal modes of action in my own company: an insider action research.

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PREFACE & ACKNOWLEDGEMENTS

"*The only constant in life is change*"

Heraclitus of Ephesus (535 BC – 475 BC)

Coming from a household where individual entrepreneurship is strongly present, I have grown up with the belief that one should never accept a status quo as given. Disturbances can come about rapidly even when the daily flow of things seems hard to disrupt. Such was the case when I started my master's Business Administration at University of Twente. The small company that I run alongside my study experienced a shake-up from the environment, and is still being affected by it as I write this. The precedent for writing this thesis was set. In the end, writing this thesis has made me an entrepreneur who is better able to grasp two contrasting approaches to entrepreneurship. In turn, I feel my efficacy to deal with disruption has improved. I hope whoever reads this thesis can take away similar learnings for the future.

I would like to thank Martin Stienstra for his insights and extensive knowledge on constructs like entrepreneurship and effectuation. His suggestions when it comes to literature, argumentation and structure were invaluable. I would also like to thank Kjartan Sigurdsson for his detailed comments which helped me put the finishing touch on this thesis. Lastly, I would like to thank everyone involved in my company, including my father. Without them, the entrepreneurial project undertaken in the context of this thesis would not have come far.

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ABSTRACT

Taking a process-based perspective of entrepreneurship, causation and effectuation are two well-known approaches in entrepreneurship literature. Whereas causation emphasizes business planning, goal orientation, and expected returns, effectuation is characterised by 'opportunity exploitation on the go'. Effectuation provides that the entrepreneur makes use of the available means, experiments as new information becomes available, and relies on control instead of prediction. Through a novel research method called insider action research and data collection through a research diary, this thesis aims to explore how both approaches can be used together in a small, international venture. Insider action research is a cyclical research method involving continuous reflection, cooperation, and research design. The qualitative findings indicate that causation and effectuation are indeed used together during the entrepreneurial process. The combined use is especially prevalent through causal market research and planning activities which support the effectual mode of action. Further research is needed to arrive at a generalised entrepreneurship process model which effectively combines causation and effectuation, in turn allowing for its adoption by practitioners and scholars alike.

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1. INTRODUCTION

Entrepreneurship keeps us busy at every level of society and in the world of research. As of January 2021, entering the search term 'entrepreneurship' in Google Scholar results in 2.15 million results, with new results being added daily. Research in the field of entrepreneurship is extensive, with attention having shifted towards the 'how' of entrepreneurship over the past few decades. However, scholars agree that more research is needed to study the underlying process and its principles (Moroz & Hindle, 2011, Kuckertz & Prochotta, 2018). This thesis answers that call by researching the constructs of causation and effectuation as brought forward by Sarasvathy (2001, 2008) and treating those constructs as entrepreneurial modes of action following Grégoire and Cherchem (2019).

Assuming a process-based view of entrepreneurship, one particular entrepreneurship research stream focusses on whether entrepreneurs (should) plan their activities, and to what extent (Brinckmann et al., 2010, Smolka et al., 2018). This 'planned vs. emergent' entrepreneurship discourse deals with the question of whether the entrepreneur should carefully plan and execute actions with a goal-oriented focus, or whether the entrepreneur should simply start 'ad hoc' and deal with contingencies as they arise.

Sarasvathy (2001) advanced this subject by introducing two theoretically distinct constructs named *causation* and *effectuation*. On one hand, causation is primarily associated with business planning, forecasting and risk-avoidance, and on the other hand, effectuation is characterised by creating and making use of directly available resources, flexibility and experimentation. Since Sarasvathy's (2001) seminal work on the two constructs, much academic literature has been devoted to exploring their theoretical underpinnings (Arend et al., 2015, Grégoire & Cherchem, 2019). However, few qualitative studies have been undertaken to understand how causation and

effectuation relate in practice, and whether they are and should be used together or kept separate (Grégoire & Cherchem, 2019, Dias et al., 2019).

Although existing literature provides evidence that causation and effectuation can and perhaps *should* be used conjointly, research on *how* the two approaches should be used together is scarce. This question, raised earlier by Harms and Schiele (2012), Reymen et al., (2015) and Smolka et al. (2018), remains largely unanswered (Grégoire & Cherchem, 2019, Dias et al., 2019). Extant research suggests both approaches are used naturally in a sequential manner based on firm development stage (e.g Harting, 2004; Harmeling et al., 2004; Sarasvathy, 2008; Laaksonen et al., 2010). Even so, Dias et al. (2019) call upon researchers to further investigate the simultaneous application of causation and effectuation, to find how and under which circumstances one approach is better over the other and to better comprehend the coexistence between the approaches.

In this thesis, I assume the role of student entrepreneur and researcher to look into the process of entrepreneurship. I investigate how I simultaneously apply two entrepreneurial modes of action, causation and effectuation, in my own entrepreneurial project. I do so by using a novel research method called insider action research, a qualitative approach that relies on close collaboration with all stakeholders involved (Coghlan, 2019; Futonge Nzembayie & Buckley, 2020).

1.1 RESEARCH AIM AND QUESTION

The primary aim of this thesis is to provide practical recommendations for the simultaneous application of causation and effectuation in entrepreneurship. In doing so, I answer the call of Arend et al. (2015) and Dias et al. (2019) to create an improved understanding of functional and practical implications of the effectuation principles.

Discussion exists concerning the theoretical foundations and generalizability of effectuation (Chandler et al., 2011, Arend et al., 2015, Grégoire & Cherchem, 2019, Dias et al., 2019). For example, Arend et al. (2015) question whether effectuation can be regarded as a theory. By applying effectuation in a real start-up, the secondary aim of this thesis is to illustrate effectuation as a mode of action following the arguments of Grégoire and Cherchem (2019). The research question that will be addressed is:

How can effectual and causal entrepreneurial modes of action be used simultaneously in a small enterprise to strive for optimal effectiveness?

Although the term 'optimal effectiveness' can be defined in many ways, in the context of this action research it is defined by my start-up being guaranteed of continuity for the year 2021 and the years that follow. Continuity is here defined as maintaining a steady flow of activities that may produce new business opportunities for the future.

By answering this research question, this paper helps in bridging the gap between current knowledge of (effectual) entrepreneurship and practical considerations associated with applying effectuation and causation in a real-life business.

To answer the research question, this thesis is structured as follows; in Chapter 2 the theoretical framework is brought forward. Given that this thesis aims to demonstrate the effectual and causal entrepreneurship approaches in practice, it is important to operationalize these principles. For this purpose, measurements of both constructs by Fisher (2012) and Reymen et al. (2015) are used. In the methodology section, Chapter 3, the research method and data gathering strategy is discussed, including the novel method of insider action research. Using insider action research, I take the role of researcher and entrepreneur within my own entrepreneurial project (Coghlan,

2019; Futonge Nzembayie & Buckley, 2020). Lastly, the findings, discussion and conclusion are discussed in Chapters 4, 5 and 6.

2. THEORETICAL FRAMEWORK

Contributing to process-focused entrepreneurship research, this thesis aims to establish how start-up entrepreneurs can use the heuristics of effectual and causal entrepreneurship practices in a conjoint fashion. For that purpose, the (process of) entrepreneurship, effectuation, causation and their practical operationalization are described in this section. Furthermore, the combined use of both concepts is further elaborated on through the use of existing literature.

2.1 ENTREPRENEURSHIP

In the first half of the 20th century, Schumpeter (1934) was early to recognize that a capitalist society includes the continuous creation and downfall of companies, a process driven by innovations. This process, which he calls 'Creative Destruction', forms a basis for entrepreneurial opportunity. It is up to the entrepreneur to recognize and create new opportunities and subsequently form business models. Kirzner (1974, 1979) explained the entrepreneur as someone who recognizes and acts upon those profit opportunities, something made possible by asymmetric possession of information; as one entrepreneur possesses more valuable information than the other, he is able to take the opportunity before anyone else.

Early entrepreneurship studies generally focused on the entrepreneurs' psychological traits and what the effect of entrepreneurship is on the macro-economic environment (Sørensen et al., 2007). In later decades calls were made to define new research objectives (e.g Bruyat & Julien, 2001), resulting in a research field today that is extensive and has fluid boundaries. This is

illustrated by the diversity of research topics that dominate newly published articles, focusing on what Chandra (2018) names "The Pentagon of Entrepreneurship". This metaphor refers to five persistent topics in entrepreneurship research: institutions; innovation and technology, policy and development, entrepreneurial process and opportunity; and new ventures (Chandra, 2018), with the latter two topics being the focus of this research.

From different definitions drawn up over the past decades, we can discern some of the core activities that encompass entrepreneurship. For example, well-known entrepreneurship definitions include activities such as identifying and acting upon profit opportunities (Kirzner, 1973), the act of innovation (Drucker, 1985) or the act of new entry (Lumpkin & Dess, 1996). Bruyat and Julien (2001) bring forward a concise definition that combines the individual, entrepreneurship as process and value creation, stating that *"the entrepreneur is the individual responsible for the process of creating new value"* (Bruyat & Julien, 2001, p. 169).

By using such definitions that try to capture the different activities of entrepreneurship, this paper uses a bottom-up approach. Importantly, by using a bottom-up approach it becomes clear that entrepreneurship is not a phenomenon with one single activity, dimension, or indicator. Rather, it entails multiple activities that, combined, add up to compose entrepreneurship. Shane and Venkataraman (2000) bring forward a definition of entrepreneurship that encompasses these activities, defining it as *"(...) the process of discovery, evaluation, and exploitation upon opportunities to create future goods and services*." (p. 172).

Sarasvathy (2003) challenges the rational and straightforward interpretation of entrepreneurship like the one provided by Shane and Venkataraman (2000). Stating that besides the "*small, comfortable clearing in the woods*" characterised by well-defined goals, easy predictions, and a stable environment (Sarasvathy, 2003, p. 206), entrepreneurship also entails "(…) *the vast,*

relatively unexplored jungle where goal ambiguity, Knightian uncertainty, and endogenous markets dominate the landscape" (p. 206). In further sections, this thesis will address both interpretations of entrepreneurship and their practical implications.

2.2 THE PROCESS-BASED VIEW OF ENTREPRENEURSHIP

Gartner (1985) argues that each key area of entrepreneurship such as those indicated by Chandra (2018) needs to be researched with equal rigour to understand how the aspects interact. In a survey conducted amongst 225 expert entrepreneurship researchers, one 'hot' research topic was selected as most 'urgent' of them all; the process behind entrepreneurship (Kuckertz & Prochotta, 2018). This focus on the 'how' of entrepreneurship is what intrigues researchers, students, and entrepreneurs themselves alike. Currently, it remains a topic of interest and requires further development (Steyaert, 1997; Sørensen et al., 2007; Kuckertz & Prochotta, 2018) as scholarly work on entrepreneurial process models is disparate (Moroz & Hindle, 2011).

According to Sarasvathy and Read (2005), the entrepreneurial process can be defined as *"*(…) *a collection of decision tasks such as selecting an idea or opportunity to begin with, creating a legal entity garnering resources, bringing stakeholders on board, managing growth and exit strategies, and so on."* (p. 10). From this definition, one can conclude that employing a process-based view of entrepreneurship allows one to distinguish between core entrepreneurial activities that make up the whole entrepreneurship process (Moroz & Hindle, 2011). Although this focus on the process stepped in around the 1990s, the article by Shane and Venkataraman (2000) on the research field of entrepreneurship is considered a starting point in the procedural discussion of entrepreneurship (Discua Cruz et al, 2012).

In their efforts to find a generalizable process model that addresses six key features, Moroz and Hindle (2011) examined 32 process-based entrepreneurship models. Out of those 32, they found four models that address critical features of entrepreneurship, such as the relationship between opportunities and the individual, the value of knowledge, and context. Among those four models that Moroz and Hindle (2011) found is that of Sarasvathy (2001), which addresses the contextual role of uncertainty in determining whether an emergent or planning process is used in entrepreneurship.

2.3 PLANNED VERSUS EMERGENT APPROACHES IN ENTREPRENEURSHIP

Entrepreneurship studies from the past two decades have increasingly focused on the decision-making process in entrepreneurship (e.g Sarasvathy, 2001; Alvarez & Barney, 2007; Shah & Tripsas, 2007 and Fisher, 2012). Entrepreneurs need to make decisions under a certain level of 'duress', such as time pressure, uncertainty, ambiguity and emotional intensity (Baron, 2008; Shepherd et al., 2015). These decisions can be related to whether or not to exploit an opportunity, relationships, and even whether to continue or exit a business (Shepherd & Patzelt, 2017).

Uncertainty can be defined as "(…) *the difference between the information possessed and the information required to perform particular tasks*" (Brettel et al., 2012, p. 170). The way an entrepreneur acts towards uncertainty is a determining factor for the success or failure of a firm (McKelvie et al., 2011). Knight (1964) stressed early on the impact that uncertainty has on the way an entrepreneur makes decisions. His 1921 work *Risk, Uncertainty, and Profit* resulted in the coinage of 'Knightian uncertainty'. Here he differentiates uncertainty, which is not quantifiable in any way, from quantifiable risk. Essentially, Knight (1964) argues that entrepreneurs determine the entrepreneurial process not by chance; rather, they base their decision-making processes on estimates of uncertainty. As such, the entrepreneurial process is

determined by the level of uncertainty perceived by the entrepreneur. For example, in coping with uncertainty an entrepreneur may decide to pursue planning or action approaches (Smolka et al., 2018). Following the definitions of Mintzberg and Westley (2001) these approaches can also be characterised as rational ('think first') and an action-oriented ('act first').

Where high levels of uncertainty are present, entrepreneurs may follow a more emergent entrepreneurial process (Smolka et al., 2018). The emergent school emphasizes the importance of learning, flexibility and resource control to achieve superior firm performance. In contrast, the planning school advocates the use of systematic and prediction-oriented approaches (Brinckmann et al., 2010). Brinckmann et al. (2010) analysed the planning-performance relationship in small firms and suggested that business planning approaches such as market and competitor analysis positively affect the performance of small businesses. However, they also found that the positive relationship between firm planning and success becomes significantly weaker as firms in the research sample become younger. This is a result of information asymmetry (uncertainty) present during the early growth phases of a firm. To deal with this information asymmetry, Sarasvathy (2001) suggests that expert entrepreneurs engage in an effectual (emergent) rather than causal (planned) entrepreneurial process.

2.4 CAUSATION AND EFFECTUATION

From the 'planned versus emergent' discourse on entrepreneurial decision-making, Sarasvathy (2001), in her seminal paper, identified two opposing constructs which she coined causation and effectuation. Causal decision-making in entrepreneurship is characterised by (business) planning, choosing opportunities based on profitability and risk-avoidance. Resources are assumed to be necessary prior to venture start-up and thorough market analysis is necessary to avoid or challenge competitors. Examples of causal decision-making approaches are discovery (Alvarez

& Barney, 2007), the classic approach (Shah & Tripsas, 2007), and rule-based reasoning (Williams & Wood, 2015).

Effectual decision-making contrasts causal approaches. First and foremost, effectuation differs from causation by using emergent strategies towards opportunity development. According to Grégoire and Cherchem (2019), the effectual approach is a way to circumvent uncertainty related to entrepreneurship by shaping the future, mainly through co-creative commitments from one's network. To illustrate the difference between causation and effectuation, Reymen et al. (2015) bring forward that the use of effectuation is the result of a wide venture scope (focus) preceded by increased uncertainty and decreased resources. In contrast, the use of causation is the result of a narrow focus caused by low uncertainty and increased stakeholder pressure (**Figure 1**).

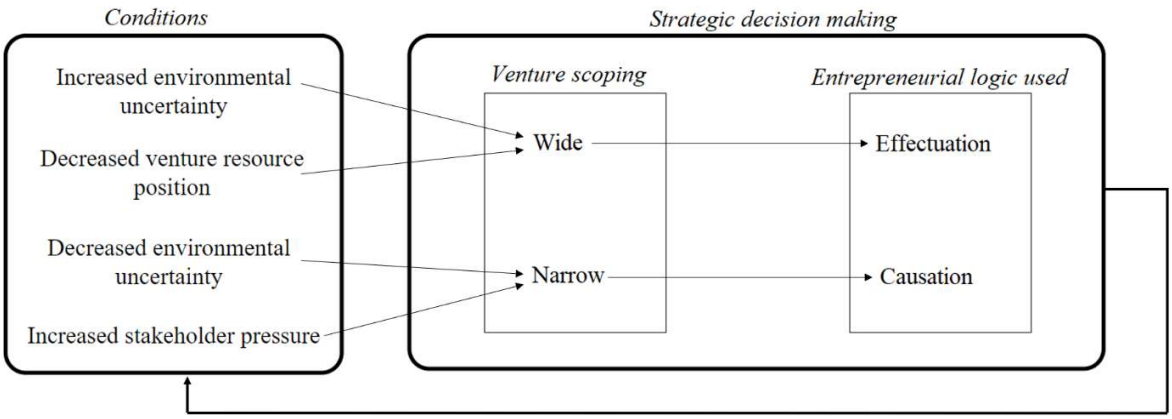

Figure 1. Precedents of causal and effectual decision-making (adopted from Reymen et al., 2015)

At its core, the effectual entrepreneurship approach consists of five principles referred to as *bird-in-hand*, *pilot-in-the-plane*, *affordable loss*, *crazy quilt* and *lemonade* (Sarasvathy, 2008). The first principle relates to using available resources; whereas 'causal' entrepreneurs focus on goal-setting, effectual entrepreneurs start with available means. The pilot-in-the-plane principle of

effectuation states that effectual entrepreneurs should try to control the future rather than predict it. Affordable loss means that effectual entrepreneurs base their decisions on what they can afford to lose, instead of calculating future returns. The fourth principle, crazy quilt, relates to partnerships; effectual entrepreneurship advocates creating partnerships over conducting competitor analysis. Lastly, the lemonade principle relates to the saying "when life gives you lemons, make lemonade"; it means leveraging contingencies and overcoming setbacks. These principles are explained in greater detail in section 2.1.1.

2.4.1 EFFECTUATION

In her seminal work on effectuation in entrepreneurship, Sarasvathy (2001) starts with the notion that entrepreneurs could simply apply existing theories and principles if they knew exactly what type of firm to create. However, in a nascent or non-existent market, well-known valuation and marketing techniques are barely useful.

It must be understood how to make decisions in the absence of goals and under circumstances of uncertainty as defined by Brettel et al. (2012) and Knight (1964). The work of Sarasvathy (2001) is closely linked to decision-making theory through the creation of a decision-making model that addresses the creation of firms under these uncertain conditions. The term 'effectuate' is a verb defined as 'to make something happen' (Oxford Learners Dictionaries, n.d).

According to Sarasvathy (2001, 2008), effectuation in entrepreneurship entails taking an available set of means to *create* a desired effect in the face of uncertainty. The process of effectuation can also be explained with a patchwork quilt metaphor (Sarasvathy, 2008), where it is up to the entrepreneur to create opportunities by means of experimentation and changing

direction when the situation changes. The patchwork quilt approach sees the world as 'in the making' where human action is important (Sarasvathy, 2008).

Uncertain conditions make it impossible to make accurate (statistical) predictions and inferences or calculate expected returns (Chandler et al., 2011). To deal with these limitations, the entrepreneur can choose a more effectual approach. This approach, or 'mode of action' as Grégoire and Cherchem (2019) call it, involves maintaining flexibility, experimenting, and controlling the future by getting pre-commitments from the network (Chandler et al., 2011).

2.4.2 THE EFFECTUAL HEURISTICS

Drawing from a dynamic model of effectual logic (Sarasvathy & Dew, 2005; Dew et al., 2009), effectuation consists of five elements; *non-predictive control*, *means-driven action*, *affordable loss*, *partnerships*, and *leveraging contingencies*.

Non-predictive control (as opposed to predictive)

Following the definition of Wiltbank et al. (2006), non-predictive control is defined by Dew et al. (2009) as "(…) eschewing predictive information in favour of what the decision-maker and her stakeholders can actually control at any given point in time." (p. 293). Also known as the 'pilot-in-the-plane' principle, it means entrepreneurs should focus on what can be controlled now as opposed to using predictive methods to forecast what might happen in the future. The underlying 'effectual' logic of this principle is illustrated by Sarasvathy (2001) in saying "*To the extent we can control the future, we do not need to predict it*" (p. 252).

Means-driven action (as opposed to goal-driven)

An important feature of effectuation is the utilization of available means. Drawing from the resource-based view of a firm (Barney, 1991), Sarasvathy (2001) states that the entrepreneurial

process starts with three types of means: the entrepreneurs' knowledge of who he or she is, what he or she knows, and knowledge of the surrounding network. Subsequently, according to Sarasvathy (2001), the entrepreneur should *"(...) take a set of means as given and focus on selecting between possible effects that can be created with that set of means.*" (p. 245). This principle is also referred to by Sarasvathy (2008) as 'bird-in-hand'. Therefore, this principle is contrary to causation, where the entrepreneur bases decisions on desired effects. Instead, the effectual entrepreneur first determines the means available and then decides on the effect, such as a new venture (Sarasvathy, 2001).

Affordable loss (as opposed to expected return)

Following the affordable loss principle, effectual entrepreneurship involves predetermining how much loss is affordable and *"(...) experimenting with as many strategies as possible with the given limited means*." (Sarasvathy, 2001, p. 252). This means the entrepreneur does not select projects based on expected return; instead, projects are selected based on what the entrepreneur is willing to lose (Dew et al., 2009). In practice, this involves the entrepreneur determining what can be lost without risking losing the whole business (Sarasvathy, 2008). By doing so, uncertainty is mitigated by controlling for what can be lost and gaining entry to new markets with a minimal expenditure of resources (Sarasvathy, 2001).

Partnerships (as opposed to competitive analysis)

The means available to an entrepreneur can be increased by involving more network partners in the process (Mäkimurto-Koivumaa & Puhakka, 2013). Also referred to as the 'crazy quilt' principle (Sarasvathy, 2008), the effectual logic emphasizes the importance of the entrepreneurs' network even before he or she commences the entrepreneurial process (Dew et al., 2009). In

other words, this involves not limiting oneself to a specific set of (potential) partners and creating new partnerships results in an increased pool of opportunities to build upon.

Leveraging contingencies (as opposed to avoiding them)

Referred to as the 'lemonade' principle by Sarasvathy (2008), the effectual approach suggests to make the most out of unexpected challenges that arise over time (Sarasvathy, 2001). When an entrepreneur allows available means, affordable loss and network partners to decide on the path the lies ahead, unexpected challenges will inevitably come about (Dew et al., 2009). Likewise, conditions of uncertainty may also dictate new opportunities to pop up during the entrepreneurial process. Whereas causal strategies are focused on avoiding unexpected events, the effectual entrepreneur should leverage positive and negative events to transform them into opportunities.

2.4.3 EFFECTUAL ENTREPRENEURSHIP IN PRACTICE

In order to fully understand how effectuation works, the principles need to be translated into actionable heuristics and behaviors. As Sarasvathy (2001, 2008) laid the theoretical groundwork of effectuation, other authors have since then made efforts to explore the practical implications of effectual entrepreneurship.

Several authors have introduced questionnaires with items that intend to reflect what both constructs mean in practice (Chandler & Detienne, 2007, Chandler et al., 2011, Brettel et al., 2011, Alsos, 2014, Werhahn et al., 2015). A distinction can be made between studies that measure the constructs on the individual (behavioural) level (e.g Chandler et al., 2011; Fisher, 2012, Alsos, 2014) and the corporate level (Brettel et al., 2012; Werhahn et al., 2015). Chandler and Detienne (2007) were early to develop measures for both causation and effectuation.

Although their findings were inconclusive as to whether their pre-defined set of 'effectuation practices' actually measured the construct well, this work paved the way for further research.

In a following study, Chandler et al. (2011) developed an effectuation questionnaire focusing on Likert-type measures of experimentation, affordable loss, flexibility and pre-commitments. The measurement scales of effectuation and causation by Chandler et al. (2011) are often adopted by scholars in attempting to discover relationships between effectuation and a variety of constructs (Alsos, 2014). However, in spite of its popularity, the scale by Chandler et al. (2011) is met with criticism by Alsos (2014) and Grégoire and Cherchem (2019) for its lack of methodological clarity.

Going from the individual level to the firm level, Brettel et al. (2012) and Werhahn et al. (2015) developed survey instruments which measure causation and effectuation in the corporate (R&D) context. To enhance comprehensibility of both causation and effectuation items, Brettel et al. (2012) developed a scale which contrasted each effectuation item with a causation item. As such, the two approaches are dealt with as opposites and mutually exclusive. This type of scale set-up and the corporate measurement level make it difficult to operationalize causation and effectuation for this particular study, hence they are not chosen for operationalization purposes.

The works by Fisher (2012) and Reymen et al (2015) including their accompanying measurements of causation and effectuation are applauded by Grégoire and Cherchem (2019) for their methodological clarity and focus on longitudinal decision-making events. These measurements establish what causation and effectuation mean in concrete, actionable terms (Grégoire and Cherchem, 2019). For this reason, I have selected the scales by Fisher (2012) and Reymen et al. (2015) to accurately operationalize effectuation. An overview of the effectual practices based on the aforementioned works can be found in **Appendix A**.

2.4.4 CAUSATION

The process of causation contrasts that of effectuation (Chandler et al., 2011; Brettel et al., 2011). The causal approach to entrepreneurship involves eliminating uncertainty through rational reasoning such as seen in designed strategy models discussed by Mintzberg (1978). Sarasvathy (2001) explains that in the causal model, the entrepreneur selects a certain set of means to achieve a set goal. After having set a goal, the entrepreneur engages in an intentional, linear process involving activities like opportunity identification and evaluation, planning, acquisition of resources, and exploitation of opportunities (Fisher, 2012). As such, the causal approach to entrepreneurship sees it as a linear phenomenon that can be described through causal relationships.

Compared to effectuation, where the means are given but the intended effects are largely unknown, causation processes "*take a particular effect as given and focus on selecting between means to create that effect*." (Sarasvathy, 2001, p. 251). Much of entrepreneurship literature takes causation as its theoretical foundation (Chandler et al., 2011). For example, according to Fiet (2002) the detection of an entrepreneurial opportunity takes place when someone undertakes a rational search process followed by the identification of an alternative with the highest expected return. Thus, the causal approach is characterised by a rational thought-process using all possible information available. By doing so, unwanted surprises resulting from uncertainty are prevented as much as possible.

From a causal perspective, markets are assumed to pre-exist and information related to those markets is freely available; it is up to the entrepreneur to find access to these markets and information (Sarasvathy, 2001; Fisher, 2012).

Like systematic opportunity search, business planning plays an important role in causation. As much entrepreneurship literature finds its theoretical foundation in causation, it comes as no surprise that entrepreneurship education strongly emphasizes business planning techniques such as market research, competitive analysis and financial forecasting (Dew et al., 2009; Chandler et al., 2011; Sardeshmukh & Smith-Nelson, 2011). The business plan is the culmination of the aforementioned activities, a result of a step-by-step rational process. The aim of a business plan is to increase profits through efficiency and increased sales (Honig & Karlsson, 2004).

As a result, the business plan is a primary subject in business school education. When several business opportunities are available, the causal approach dictates that the option with the highest expected return should be selected.

2.4.5 CAUSAL ENTREPRENEURSHIP IN PRACTICE

The aim of this thesis is to better understand how causal and effectual entrepreneurship processes are applied conjointly in my company. To that end, it is necessary to understand how the causal entrepreneurship approach works in practice. Main drivers of causation are prediction and the identification of pre-existing market opportunities (Fisher, 2012). These drivers are reflected in the process model of causation developed by Shah and Tripsas (2007) and presented by Fisher (2012) in **Figure 2**.

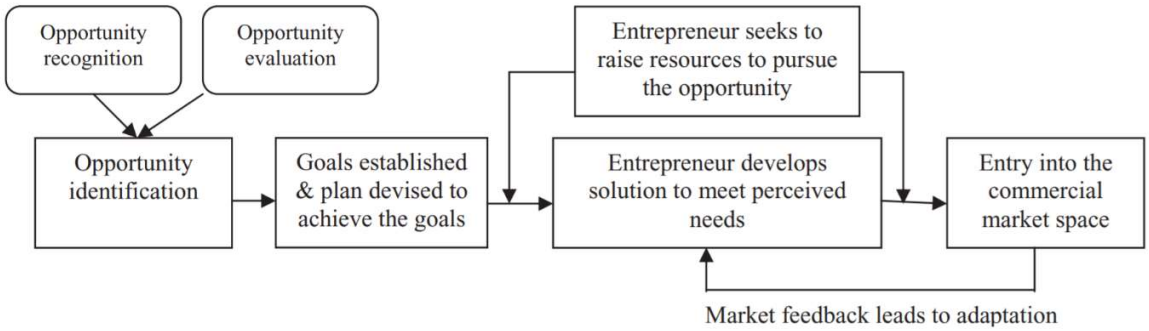

Figure 2. Causation process model adapted from Shah and Tripsas (2007) presented by Fisher (2012).

In their causation and effectuation scale development study, Chandler and Detienne (2007) presented a short four-item scale to measure causation. The scale is based on Sarasvathy's (2001) description of causal entrepreneurship activities, which she presents as "*(…) competitive, analysis, designing and planning business strategies, and organizing and implementing control processes*." (Chandler et al., 2007, p. 8).

Although the activities provided in **Figure 2** are relatively broad, the resource-gathering activity presented is not clearly stated in the brief survey of Chandler and Detienne (2007). In a further study by Chandler et al. (2011), the scale does include an item focused on resources and capabilities.

So far, the operationalization of effectuation and causation by Chandler et al. (2011) remains the most widely used in studies that aim to provide a better understanding of the two concepts (Alsos et al., 2014). However, Fisher (2012) and Reymen et al. (2015) also provide concrete and actionable descriptions of causal entrepreneurship activities (Grégoire and Cherchem, 2019).

Like Chandler et al. (2011), they create a separate measurement for causation along with an effectuation scale. This allows for measuring and treating the two concepts as distinct from each other (Alsos, 2014). To operationalize causation alongside effectuation, I have selected the measurements of causation by Fisher (2012) and Reymen et al. (2015) as their measurements provide concrete, yet hardly overlapping action descriptions which are methodologically sound. An overview of the causal entrepreneurial actions can be found in **Appendix B**.

2.6 INTERSECTION OF CAUSATION AND EFFECTUATION

Even though causation and effectuation are theoretically distinct, this does not mean that research should treat the processes as "all-or-nothing" (Read et al., 2016). The dichotomous portrayal of both processes has led research to treat them mutually exclusive, which leads to researchers not developing theory that treats both as related (Brettel et al., 2012).

Although treated dichotomously, Sarasvathy (2001) found that expert entrepreneurs use a mix of effectuation and causation. Subsequently, Sarasvathy (2008) found a co-occurrence between causal and effectual thinking based on the circumstances that entrepreneurs find themselves in. Like her findings, other research on the firm and corporate level also found that entrepreneurs start with using effectuation and develop to more causal approaches as the firm matures (Harting, 2004; Harmeling et al., 2004).

The business planning-performance debate falls in line with the question whether start-up entrepreneurs (should) use causal or effectual approaches, or both. Brinckmann et al. (2010) suggest that 'planning and learning school' activities, i.e. causal and effectual approaches, are used conjointly dependent on allotment of managerial attention. Given that a new firm experiences uncertainty and dynamism in its early stages, Brinckmann et al. (2010) suggest it

will miss structure and information to effectively perform causation approaches, and will turn to more effectual approaches first and more causal approaches later on.

Studying the creation of international new ventures, Harms and Schiele (2012) found that the concepts of causation and effectuation are not diametrically opposed and that both are used by entrepreneurs entering international markets. An important contribution in this discussion is made by Smolka et al. (2018) who studied 1,453 entrepreneurs in 25 countries and came to the notion that it is most beneficial to firm performance when causation and effectuation are used in tandem. According to them, "*this relationship is driven by experimentation, that is, the ability of an entrepreneur to create opportunities and shape an unpredictable future using the means at hand, while applying the logic of causation and employing traditional business planning activities concurrently*" (Smolka et al., 2018, p. 593).

Similar findings were recently reported by Alzamora-Ruiz et al. (2021) in study of technology-based SMEs. They found that both causation and effectuation can be used to achieve positive innovation results. These findings are in line with literature on ambidexterity, which proposes the necessity of combining planned and adaptive approaches (Brettel et al., 2012). Lastly, in their effort to operationalize causation and effectuation, Alsos et al. (2014) follow the arguments of Kraaijenbrink et al. (2012) that the two approaches can be combined in practice.

2.6.1 COMBINED USE OF CAUSATION AND EFFECTUATION

From a theoretical standpoint, authors in effectuation literature treat causation and effectuation approaches as opposites (Sarasvathy, 2001; Chandler et al., 2007, Dew et al., 2009; Brettel et al., 2012). This makes sense when one wants to clarify the difference between the two concepts, for example in an educational setting. However, the idea of causation-OR-effectuation in practice

has no merit as different authors found that effectual and causal decision-making are used simultaneously (e.g Brinckmann et al., 2010; Dew et al., 2009; Reymen et al., 2015; Smolka et al., 2018).

The question rightfully asked by Grégoire & Cherchem (2019) is *how* both constructs are used in tandem during the entrepreneurial process. To better grasp this in-depth question, Grégoire & Cherchem (2019) argue to step away from viewing effectuation and causation as dichotomous and to view both constructs as a mode of action. By treating the constructs as a mode of action, they fit better in broader research scopes and human action-focused studies (Grégoire & Cherchem, 2019). Subsequently, it becomes possible to treat effectuation and causation as mobilised alongside or even integrated with one other in the entrepreneurial process.

Few authors have yet attempted to answer how causal and effectual modes of action can be employed simultaneously (Grégoire & Cherchem, 2019, Dias et al., 2019). However, Brinckmann et al. (2010) suggest that the entrepreneur should adopt a dynamic approach of 'planning, learning and doing'. Basic planning actions (i.e. causation) can be undertaken at the start of a venture all while entrepreneurial activities are carried out, increasing experience and learning necessary to plan further (Brinckmann et al., 2010). This approach of simultaneous planning, doing and learning contrasts the step-by-step rational process of planning followed by execution described as causation in section 2.2.

Furthermore, Reymen et al. (2015) contribute to the question by finding that entrepreneurs follow a 'hybrid' decision-making logic which combines both modes of action. One of the modes of action can be used more than the other during venture creation, but this predominance may shift between the two modes over time. Whereas flexibility associated with effectuation is

more common in earlier stages of the venture, a more planning-based mode of action (causation) becomes dominant in later stages (Sarasvathy, 2008; Reymen et al., 2015). Still, effectuation can also be found in more mature stages of a firm, indicating a co-occurrence and re-occurrence of both modes of action (Reymen et al., 2015). According to Reymen et al. (2015), the underlying reason for an entrepreneur to choose either mode of action lies in the entrepreneurs' perception of scoping, which according to the authors is related to "(…) *the concept of 'search breadth' as a way to discover or create new opportunities*" (p. 365). Where a broad decision-making scope will lead to an increased use of effectuation, a narrow scope will lead to a more causal mode of action (see also **Figure 1**).

Lastly, Smolka et al. (2018), having shown that causation and effectuation are not independent from each other, investigated the synergistic effects of causation and effectuation on venture performance. They found that only the effectual principle of experimentation strengthens the relationship between causation and performance. They subsequently suggest that an entrepreneur could approach start-up development as a 'planning effectuator'. Although this is a 'contradictio in terminis', it can be argued that an entrepreneur using causal methods in combination with experimentation and using available means (effectuation) may benefit from such an approach.

3. METHODOLOGY

The aim of this study is to find how causation and effectuation practices can be used together in my own company. The context is such that I already have experience with my current venture, but the Covid-19 pandemic has caused me to receive 'slack' resources, mainly in the form of time. Having established in practical terms what it means to put the causal and effectual approaches in effect, I have started a new project in March 2021. Having started a process of

opportunity search in January 2021, I put both causal and effectual activities in practice until August 2021.

Being entrepreneur and researcher in one, I stand in a unique position to perform qualitative entrepreneurship research. The importance of qualitative entrepreneurship research is stressed by Short et al. (2011), stating the increased potential to find insights into the entrepreneurial process. Despite this advantage, few entrepreneurship studies employ mixed or qualitative research methods (Molina-Azorín et al., 2012; Schulz et al., 2016)

Another advantage of being entrepreneur and researcher simultaneously deals with the problem of subjective observations in extant effectuation research, covering a concern brought forward by Grégoire and Cherchem (2019). Perceptions of entrepreneurial opportunity and context can differ radically between entrepreneurs, even though they may find themselves in similar conditions (Parida et al., 2016). According to Fisher (2012) *"*(…) *effectuation assumes that entrepreneurial opportunities are subjective, socially constructed, and created by an entrepreneur*" (p. 1026). By gathering data on my own entrepreneurial actions in real-time using a diary, coding the actions based on validated scales, and reflecting on the diary with an expert in effectuation, I am able to mitigate this problem of subjectivity.

The aforementioned activities are characteristic of an action research approach (Coghlan, 2019; Futonge Nzembayie & Buckley, 2020), the chosen research method for this thesis. To account for confirmation bias, the effectuation and causation codebooks were developed only during the final stages of data collection, and no further attention was given to them until the coding process was started. Furthermore, the diary entries were written in a matter-of-fact manner without prior consideration of causal and effectual modes of action.

3.1 ACTION RESEARCH

This study has a longitudinal design as data is gathered on the individual level over a period of eight months. To collect data, this study design requires either retrospective recall (e.g through self-report instrument like a survey) or real-time data gathering (Perry et al., 2012). However, an issue with retrospective recall is the risk of recall error, which is failure to correctly recall the event, experience or behaviour in question (Eisenhower et al., 2004). This can make it difficult for a researcher to capture findings related to the specific aim of this thesis, especially if multiple entrepreneurs with different subjective perspectives are surveyed to reflect on how they used causation and effectuation simultaneously.

Therefore, Perry et al. (2012) suggest that "*When examining the degree to which entrepreneurs use effectual versus causal logics* (…) *researchers could use longitudinal research designs that include frequent data collections to capture subjects' logics and behaviors*." (p. 20). Given the scope of this study, I am unable to find multiple entrepreneurs to do long-term, real-time data gathering with. However, my unique position as entrepreneur and researcher in one allows me to follow Perry et al.'s (2012) suggestion to perform real-time data gathering on my own entrepreneurial activities. For this reason, I have deliberately chosen to perform action research, a form of real-time data gathering, as opposed to performing survey-based research.

Although there is a diverse range of definitions and labels for action research which are loosely used (Meyer, 2000; Schultz et al., 2016), Meyer (2000) defines it as "(…) *a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of those practices, and the situations in which the practices are carried out.*" (p. 8). Like Sarasvathy's (2001) theory of effectuation, action research finds it epistemological roots in pragmatism (Futonge Nzembayie &

Buckley, 2020). In pragmatism, the researcher and the research subject are linked interactively, resulting in findings that are created as the study is carried out (Heikkilä & Kuivaniemi, 2012). This is underlined by Schultz et al. (2016), who state action research includes a process which no longer involves the mere observation of certain phenomena "(…) *but rather an active intervention in social practice*" (p. 270). Therefore, action research is characterised by the role of the researcher as an active participant instead of an observer.

This action research involves a cyclical, iterative research process, with five stages seen both in the whole duration of this study and between the subsequent entrepreneurial actions. These stages, based on Coughlan and Coghlan (2002) and Riel (2010), are defined as follows:

1. *Diagnosing*. In this step, a 'diagnosis' is made of the current situation. This is done by identifying the research problem at hand and determining the research direction. Additionally, this step is repeated several times after key moments in the seven-month entrepreneurial process. As is characteristic for action research, the researched subject (in my case; causal and effectual entrepreneurship) is continuously acted upon in the present and must lead to new (entrepreneurial) actions in the future (Schultz et al., 2016). Therefore, renewed evaluation and identification of the research direction and future courses of action are necessary.
2. *Action planning*. In the action planning stages, I devised concrete plans of action that follow up on the diagnosing stage. This step is often done sub-consciously on 'auto-pilot', as each preceding entrepreneurial action triggers me to start thinking about a follow-up action. In some cases, I also discuss my following actions with my colleague or supervisor. Also included in this step is determining a strategy to collect data on my

individual experiences, behaviors and insights. In all cases, data collection was done by means of a research diary (see step 4 and Section 3.2).

3. *Executing research design (intervention)*. In this step, the entrepreneurial actions are carried out. The goal of these actions is to collect qualitative data which indicates to which extent and how causal and effectual entrepreneurship is exercised simultaneously. Although effectual and causal activities were identified prior and during this study by means of a literature review, I deliberately chose not to let them guide my actions as an entrepreneur to prevent confirmation bias. Instead, I decided to keep detailed memos of my actions and experiences (step 4) in order to code them later on.
4. *Data collection and evaluation*. After each entrepreneurial action, I kept track of my experiences and actions in a log. At a later stage, the log entries were evaluated and coded using the operationalization of effectuation and causation found in section 2.1.2 and 2.2.1.
5. *Reflection*. Taking the overall research process, this stage involves reflecting on the coded entrepreneurship logbook and deriving insights from relevant data to draw conclusions. In turn, these conclusions help in answering the research question. Reflections are also carried out between the different entrepreneurial actions taken to determine whether the course of action needs to be changed. These post-action reflections included the consideration whether further entrepreneurial actions were needed to collect more data.

Throughout each step I work together closely with different stakeholders, for example my supervisor and my partner in the new entrepreneurship project. This collaboration is an important element in action research as it commonly identified as a collaboration between researchers and

stakeholders related to the subject investigated (Schultz et al., 2016). The approach stipulates collaboration in the diagnosing, implementing measures (intervention), evaluation and reflection phases (Schultz et al., 2016).

The importance of collaboration in entrepreneurship action research is further emphasised by Futonge Nzembayie & Buckley (2020), as "*entrepreneurship researchers and students see collaborators in new venture creation as democratic partners in the co-generation of knowledge and learning*" (p. 806-807). This collaborative approach is in line with Sarasvathy's (2001) effectual 'partnerships' principle as she explains entrepreneurship as venture *co-creation* where collaborators enter the process to provide new means or, in the context of action research, new insights.

3.1.2 INSIDER ACTION RESEARCH

Action research, with its above-mentioned cyclical process, is an overarching term for several types of action research. Being part of the '*family of action research practices*', insider action research was originally conceived as a research strategy to conduct research in your own organization with the aim of implementing positive change (Coghlan, 2007). With the aim of better understanding simultaneous causal and effectual practices, insider action research is a fitting method as it calls for merging researcher and entrepreneur, allowing for an improved understanding of what drives the entrepreneurial process (Coghlan, 2019; Futonge Nzembayie & Buckley, 2020).

The method is comprised of three modalities brought forward by Futonge Nzembayie and Buckley (2020); *reflective practice*, *cooperative inquiry*, and *design science*. As reflective practice and cooperative inquiry are already elaborated on in the former sub-section, they will

not be discussed here.

Rather than just moving through the entrepreneurial process, *design science* entails both reflection and collaboration on the level of the construct being researched. The intended outcome is to improve existing or create new design constructs, models and frameworks (Coghlan, 2019). In performing insider action research in my own entrepreneurial project, I generate value for the project or company and strive to attain answers to the research questions in section 1.1. According to Futonge Nzembayie and Buckley (2020) this should be done by purposefully aligning the entrepreneurial process and research aims. In doing so, it is possible to examine whether existing theories are incomplete, to evaluate them, or as Futonge Nzembayie and Buckley (2020) put it "(…) *to reconstruct the social mechanisms and theories of action assumed in non-causal entrepreneurship theories such as effectuation*" (p. 807).

To determine follow-up plans after key moments, *reflective practice* is carried out with key stakeholders on the research side (my supervisor) and the entrepreneurial 'action' side. *Cooperative inquiry* is carried out by informing key stakeholders of the research aims that went alongside the entrepreneurial process. In essence, the findings of the design science component of this insider action research will appear in the discussion and conclusion section of this paper, where deductions will be made based on the results of my entrepreneurial activities.

3.2 DATA COLLECTION AND CODING

Over a period of seven months data is collected by means of a research diary. A research diary is a suitable data collection method for action research as it helps in capturing data during an ongoing process (Coughlan & Coghlan, 2002). In this digital diary I write down my entrepreneurial actions, my rationale behind the actions, and my experiences and feelings. This is

done shortly after each (entrepreneurial) action I take during a the eight-month process of opportunity search, selection and development.

As a result, the diary includes both my own empirical observation and my personal interpretation of events. By keeping the time between an action and recording it in the diary as short as possible, I decrease the chance of memory bias. Bolger et al. (2003) advise to follow an event-based format for a research diary, which implies that each event is followed by a new diary entry.

The research diary is written through my personal lens and includes a series of continuous experiences and interactions with my environment. As such, this action research finds methodological likeness to narrative research. Also known as narrative inquiry, it is defined as the collection of narratives and written stories based on what humans experience in the world (Moen, 2006). Although not employed as the defined method for this thesis, it does explain the frame of reference for this study.

In order to make inferences and draw conclusions from the research diary, the data is coded using effectuation and causation codebooks (**Appendix A** and **B**) following the principles of thematic analysis. This method is defined by Braun and Clarke (2006) as the identification, analysis, and reporting of patterns (themes) within a qualitative dataset. Thematic analysis requires the researcher to identify a theme or related set of patterns. Following Braun and Clarke (2006), thematic analysis consists of six phases commenced by looking out for and identifying patterns in the data, which may be done already during data collection. Subsequently, six steps are executed (adopted from Braun Clarke, 2006): 1. Data familiarization 2. Generate initial codes (broadly) 3. Once all data is coded: search for patterns 4. Reviewing patterns 5. Defining and naming patterns 6. Report write-up (discussion and conclusion).

The effectuation and causation codebooks are adopted from scientific, peer-reviewed papers and the principles of action research and thematic analysis are valid research methods. In addition, they have been thoroughly discussed with my supervisor prior to coding. However, the research diary is subjectively coded based on the judgement of the researcher. Qualitative research brings with it an inherent risk of research bias (Galdas, 2017).

For reliability purposes, the data is coded independently by my supervisor and compared to my own coded research diary. Subsequently, the coded research diaries are discussed and agreed upon to arrive at one, final version which is used for the findings. This way a high level of inter-rater reliability (IRR) is achieved. IRR is defined by Jackson (2012) as a consistency measure which assesses the agreement between two raters, and becomes relevant when there is a bias risk present in subjectively scoring a measure.

4. FINDINGS

I started off in January with three rough ideas as to what I would work on. The first option was working with a local competitor of mine to distribute a new tool that fits on the machine I already sell. This action itself already involved an element of effectuation (partnerships as opposed to competitive analysis, see 2.1.1) and resulted in successfully offering the product to customers in the United States. Even though the findings were successful and profitable, I realised the experiences would not suffice to draw conclusions from. I had only taken a few actions, relatively speaking, to come to this achievement.

A second opportunity arose as I noticed a Dutch made machine being posted on social media by potential customers working in my American niche market. After some market research (a causal activity) I found that there is no established distributor yet, and that the machine is manufactured

very close to where I live. Using my network in the Netherlands I gained the personal contact information of the owner of the machine brand involved, an effectual activity. This gave me another opportunity to pursue. However, I also realised the initial investment in this project would be too high for me. Going by Sarasvathy's (2001) affordable loss principle, I set this opportunity aside for now.

The third opportunity entailed working with an older friend of mine to develop a completely new machine. Years earlier I had already discussed this idea with him, which was the development of an electrically powered loader. I got the idea directly from my previous industry experience and the idea was to develop, build and distribute a machine in the same market I already operate in. My friend is an experienced metal machining operator with his own workshop and was equally enthusiastic when I proposed the idea. As time progressed during the first quarter of 2021, I decided that this project would be the main focus.

Although the previously mentioned ideas are discussed in the research diary, this 'electric loader' project will be the main focus for the findings and conclusion for two reasons.
First, the entrepreneurial project could be started from its beginning, allowing me move through as many cycles as possible within the seven-month timeframe. Second, the project was completely new to me and forced me to engage in effectual and causal activities like market research, making use of new and existing resources, and planning activities. This was a deliberate decision based on the *design science* principle described by Futonge Nzembayie and Buckley (2020), which entails purposefully aligning the entrepreneurial process with the research aims of this insider action research.

As a result, the following months saw me moving through an entrepreneurial process that included a diverse range of activities. Some notable activities include the rental of a competitive

machine to investigate the feasibility of building one ourselves, getting in touch with multiple network contacts, conducting market research, and doing several key meetings.

4.1 CODING PROCESS AND STATISTICS

Each activity related to the entrepreneurial process described in Section 4.1 was logged in a personal research diary. Every thought, experience, plan and activity was described in detail over the course of seven months, resulting in 26 diary entries of varying length and an average of four diary entries per month. Finally, the diary was analysed and coded using the causation and effectuation codebooks (**Appendix A** and **B**).

Prior to coding, the codebooks were discussed with and agreed upon by an expert in effectuation and causation theory. Coding was done twice, once by my supervisor and once by myself. Subsequently, the coded research diaries were compared and discussed to ensure reliable measurement of causation and effectuation. An overview of the codes applied per mode of action and codebook can be seen in **Table 1**. In total, 130 codes were registered. Of those, 54 were coded as causal activity and 76 as effectual activity.

Causation			Effectuation	
Reymen et al. (2015)	Fisher (2012)		Reymen et al. (2015)	Fisher (2012)
ReyCauGO1 – 6	FisCau1 – 2		ReyEffMO1 – 11	FisEffExp1 – 2
ReyCauGO2 – 3	FisCau2 – 2		ReyEffMO2 – 3	FisEffExp2
ReyCauGO3 – 1	FisCau3 – 3		ReyEffMO3 – 9	FisEffExp3 – 1
ReyCauGO4	FisCau4 – 1		ReyEffMO4 – 2	FisEffExp4
ReyCauGO5	FisCau5		ReyEffMO5 – 7	FisEffExp5
ReyCauUE1 – 2	FisCau6		ReyEffAL1 – 1	FisEffAL1
ReyCauUE2 – 1	FisCau7		ReyEffAL2 – 2	FisEffAL2
ReyCauUE3 – 2	FisCau8		ReyEffAL3 – 4	FisEffPreCom1 – 3
ReyCauUE4	FisCau9 – 3		ReyEffAL4 – 1	FisEffFlex1
ReyCauCA1	FisCau10		ReyEffP1 – 4	FisEffFlex2 – 4
ReyCauCA2	FisCau11 – 2		ReyEffP2 – 3	FisEffFlex3 – 1
ReyCauCA3 – 3	FisCau12 – 1		ReyEffP3 – 2	
ReyCauCA4 – 6	FisCau13 – 3		ReyEffP4 – 4	
ReyCauER1 – 1	FisCau14 – 3		ReyEffUE1 – 5	
ReyCauER2 – 3	FisCau15 – 7		ReyEffUE2 – 1	
ReyCauER3	FisCau16		ReyEffUE3 – 3	
ReyCauER4	FisCau17		ReyEffUE4 – 3	
ReyCauER5	FisCau18			
	FisCau19			
28	26	(Totals)	65	11

Table 1. Descriptive statistics per codebook (number of times each code is applied).

The coded research diary indicates that causal and effectual modes of action are used alternately throughout the seven months I kept track of my entrepreneurial process. This is illustrated by the varying presence of both causal and effectual activities both within and between entries. The statistics of **Table 1** imply that a more effectual rather than causal mode of action was followed during the seven-month entrepreneurial process. Effectual and causal actions were taken alternately throughout the data collection period; no pattern can be discerned that shows one mode of action being applied more than the other, for example at the start or end of the entrepreneurial process.

4.2 INSTANCES OF SIMULTANEOUS CAUSAL AND EFFECTUAL MODES OF ACTION

What follows is an overview of 14 instances where both causal and effectual modes of action were employed side-by-side or in an interlinked manner. A summary of the causal and effectual

modes of action employed can be found in **Table 2**. Although a mix of causal and effectual actions were seen throughout my entrepreneurial process, I took a mostly effectual course of action. My entrepreneurial process was in a nascent stage throughout the seven-month data collection period. As my activities centered around opportunity search and early opportunity development, I was continuously operating in the early stages of the venture creation process.

Two causal activities are seen to be predominant in working in tandem with an effectual mode of action. First, in case (2), (4), (7) and (9) *market research activities* (causal) are carried out to support activities which are effectual in nature. I conduct market research activities to assess (experimental) opportunities, strengthen my knowledge base (= available means), to determine what I can afford to lose, and lastly, to change a development path. Second, in case (1), (5), (12) and (14) *making long-term projections* as to what the future holds (a causal activity) is seen to work in tandem with an effectual activity.

1. January 2021 saw me making projections as to what the future would hold while at the same time assessing my means and resources. I was looking into my own network to see what opportunities I could work on; "*I expect to sell the current inventory before may (ReyCauER2). In this period, I am especially thinking about whom I currently knew that could provide me entry to new ideas or products (ReyEffMO1)*." (January 2021).
2. While outlining the entrepreneurial opportunities I had (effectual - FisEffExp1), I conduct market research activities to assess the viability of a potential opportunity. The opportunity involved the distribution of a new European-made machine in the United States, and I perform market research (causal - ReyCauCA4/FisCau11) to discover whether there is already an established distributor of the product. I perform similar market research activities to assess the opportunity that I finally chose, as I attempt to

find out how established the electric loader concept is within the United States. I do this to strengthen the knowledge I already carry from past experiences (effectual - ReyEffMO1).

3. In February I hold a discussion session with my father (business partner) to determine strategic direction (causal – FisCau15). In discussing the different options I have, I make use of my existing network to identify opportunities (effectual – ReyEffMO5).
4. In seeking new opportunities during the early phases of the entrepreneurial process, I partner up with a US-based competitor and list one of their tools on my website to see I can sell it. This action being effectual in itself (partnerships and experimentation), I also conduct thorough market research activities (causal – ReyCauCA4). I check how the tool has been received so far by new customers and whether other distributors already sell it.
5. In April I visit my supplier to get a better understanding of how many machines I can receive to sell in the United States (my regular business). This action is causal, as I aim to get a better projection and base my further actions upon those expectations. However, it is also related to the effectual principle of affordable loss (managing growth expectations and ambitions – ReyEffAL3). The affordable loss principle comes into play as I attempt to understand how much time and resources I can afford to lose (effectual) based on the forecasted expectations (causal).
6. As I had the idea to start the distribution of new product line in the United States to complement the machines I already sell, I discussed that idea with my father (causal – FisCau15). Coincidentally, he has the relevant contact information from the person I need to get in touch with to propose this idea. This is an example of a causal activity leading to a network expansion on which I can build (effectual – ReyEffMO5).

7. In doing market research for the project I selected (introducing an electrically powered loader), I get a better understanding of how fast such a product can be designed and introduced in my target market. I base this information off online competitor research (a causal activity) and as a result, I have better idea of growth expectations and ambitions related to what I can afford to lose (effectual).
8. In order to gain better understanding of the feasibility of building an electric loader, my partner and I rent one from a local equipment dealership so we can inspect it. This is an effectual activity as it entails making use of local infrastructure and technological know-how (ReyEffMO3). Even so, I need to plan and time the rental date with my partner, a causal activity (ReyCauGO2).
9. As I systematically monitor social media to gather more information from my customer base (a causal activity), I learn more about the potential of building and distributing an electrically powered loader. For example, I learn that other industries will have a demand for a product like this as well ("*First I thought it was especially indoor demolition companies that require such a machine due to emission regulations. Now I have learned that also green industry customers might be interested in such a machine"* – May 2021). However, this will have implications for the technical specifications of the product. As a result, I adjust my ideas to this feedback. This is another example of how a causal activity leads to a changed perspective or action on the effectual side. After all, I have leveraged an unexpected event and changed development paths based on unexpected feedback (ReyEffUE1).
10. At the end of May I pick up the rented electric loader. An example of using my existing network comes into play as I borrow the trailer from a friend of mine (effectual –

ReyEffMO3). As I pick up the rental machine from the dealership, I must hold back on giving away my intentions with the machine, even though I would like to discuss it with the business owner. This is an example of a causal activity as I exercise ReyCauUE1 (carefully interacting with environment to avoid unexpected events). On the other hand, I discuss with him the woes of being a reseller of equipment, something we can both relate to. It makes me realize I would be better off building machinery myself. This is an example of opportunity identification based on an existing network of contacts (ReyEffMO5). The events of that day show how causal and effectual activities intertwine, even on a daily basis.

11. My partner and I decide to pursue the electric loader option in effectual manner (based on our resource and knowledge base). However, we rent an electric loader to examine it and analyze the technical side of building one (causal – FisCau2).
12. I articulate my own vision that electric loaders will have gained much more traction in the market within 10 years (causal – FisCau14) while engaging with customers to get their take on electric powered machinery (effectual – ReyEffP4).
13. Where the month of June was characterised by several means-based actions (effectual), at one point I do get in touch with my partner to discuss further, short-term actions and planning. This is an example of defining project goals (causal – ReyCauGO2 & FisCau15) and was done multiple times throughout the entrepreneurial process. Similarly, longer-term expectation management was done throughout the entrepreneurial process. For example, multiple times I contact the manufacturer of the machines I already sell to discuss projections (causal - ReyCauGO1 and FisCau3).

14. Managing long-term expectations was done in July when I met with my partner to discuss how long we both thought the project should take before we had a tangible product (causal – ReyCauGO2). However, at the same time the goal of the discussion was to determine how much each of us was willing to spend in both financial and non-financial resources (effectual – ReyEffAL3).

Though **Table 1** indicates a more effectual mode of action was employed, causal actions were undertaken alongside effectual ones throughout the entrepreneurial process. The simultaneous and interlinked cases are summarised in **Table 2**.

	Causation	*Effectuation*
1	Making projections for the future while...	assessing my (network) means
2	Doing market research activities while…	outlining entrepreneurial opportunities (experimentation)
3	Determining strategic direction while…	assessing my network to identify opportunities
4	Doing market research activities to…	assess market potential after partnering with a competitor
5	Trying to get a better projection of future sales output to…	determine what I can afford to lose (in terms of time and financial resources)
6	Holding a strategic session…	resulting in an expansion of my network (available means).
7	Doing market research to determine feasibility of introducing an electric loader to…	better determine what I can afford to lose when it comes to time and other resources
8	Carefully planning the rental of an electric loader to...	rent and inspect it, making use of existing technological know-how.
9	Systematically monitoring social media which leads to…	changing paths of development in our electric loader project.
10	Exercising secrecy while...	gathering information from network partners to better assess an opportunity.
11	Renting an electric loader to inspect the technical side of it while…	pursuing the electric loader opportunity by making use of existing resources.
12	Articulating my vision on electric loaders while…	talking to my customer base to get their take on them.
13	Doing short-term project planning and long-term expectations management while…	pursuing the electric loader project in a mostly effectual manner.
14	Determining long-term expectations with my partner to…	determine how much both of us are willing to spend when it comes to time and resources (affordable loss).

Table 2. Summary of simultaneous causal-effectual modes of action employed during January-July 2021.

5. DISCUSSION

Through the application of action-research methodology, data collection by means of a research diary and applying causation-effectuation codebooks in a real-life entrepreneurial project, this thesis finds academic and practical implications related to the research question.

5.1 ACADEMIC IMPLICATIONS

My entrepreneurial process followed the pattern described by Sarasvathy (2008) and Reymen et al. (2015) that early on in the venture creation process, more effectual as opposed to causal modes of action are used. My actions also follow Reymen et al's (2015) venture scoping model (**Figure 1,** Chapter 1.4), as increased uncertainty and a decreased resource position led me to having wider venture scope. As a result, I followed a more effectual mode of action throughout the data collection period.

Another explanation is brought forward by Dew et al. (2009) in differentiating between expert and novice entrepreneurs, their study indicating that 'expert' entrepreneurs with more than 15 years of experience in multiple ventures act in a more effectual way, whereas 'novice' entrepreneurs (MBA students) follow a more causal path. However, even though I consider myself an 'expert' in the market I operate in, I have eight instead of 15 years of experience and in one venture only. This brings forward the question how to separate and define expert and novice entrepreneurs. It would seem that 'expert' level entrepreneurship is not just reached by years of experience or number of companies established, but also through an accumulation of non-physical resources such as knowledge, (past) experience(s) and network.

Thus, this thesis confirms the concerns of Arend et al. (2015) to better define the boundaries of what expert and novice entrepreneurs are, in turn enabling a better understanding of when someone tends to follow a more causal or effectual mode of action.

As for the simultaneous use of causal and effectual modes of action, the findings illustrate how the causal actions of market research and long-term planning and perspective making go alongside effectual actions.

To illustrate, the findings indicate how causal market research activities are shown to be intrinsically linked to executing effectual actions. It is understandable an entrepreneur will commit to performing at least some market research activities regardless of following a more causal or effectual mode of action. Marketing research leads to an increase in (prior) knowledge which the entrepreneur can use (Witell et al., 2011), and might even be necessary to come to a defined market opportunity (Siegel & Renko, 2012).

This is further illustrated by de Cock et al. (2020) in researching the lean start-up method which, similar to effectuation, makes much use of experimentation as described by Chandler et al. (2011) and is thus often mentioned along with effectuation in entrepreneurship literature. De Cock et al. (2020) show that prior market knowledge is an important boundary condition for the successful use of experimentation by entrepreneurs, with experimentation also being an important heuristic of effectuation according to Fisher (2012). As (prior) market knowledge is fed by market research activities (Witell et al., 2011), these efforts fuel the entrepreneur's knowledge base and subsequently influence the effectual means-oriented basis for taking action.

Furthermore, Harms & Schiele (2012) show that when confronted with unknown markets, international entrepreneurs remove psychic distance and close knowledge gaps by engaging in

information search through causal market research activities. This could explain my own course of action as I attempt to gain a better understanding of the implications of launching an electrified loader in a foreign market by carrying out market research activities.

Whereas effectuation theory posits that entrepreneurs work with the means at hand (Sarasvathy, 2001), the causal mode of action is goal-oriented (Sarasvathy, 2008; Fisher, 2012; Reymen et al., 2015). The causal mode of action places an emphasis on expectation-based action, goals and (scenario) planning. When it comes to the basis for taking action, the findings illustrate it is impossible to act fully means-oriented when following the effectual mode of action.

For example, I based much of my actions on my own knowledge and other existing resources (*ReyEffMO1* was coded 11 times). However, I also took several actions based purely on expectations. For example, I decided to pursue a new entrepreneurial project based on the projection that my existing supplier would be unable to deliver this year. As such, the effectual process that followed was in part triggered by what Reymen et al. (2015) label a causal activity.

Taking a more short-term perspective, causal 'planning' actions were carried out throughout the entrepreneurial process. Short-term planning and goal setting was seen in several instances and was necessary to coordinate actions between my partner and I. More importantly, these actions were used to determine the effectual principle of affordable loss multiple times. Although Fisher (2012) and Reymen et al. (2015) assign planning and goalsetting actions to causation, these actions are shown to be a necessary precedent towards an effectual mode of action.

These findings which suggest market research and goalsetting activities as inseparable from an effectual course of action support seem to counter Sarasvathy (2008) in presenting those activities as strictly causal and theoretically distinct from effectuation. Sarasvathy (2001, 2008)

posits that an effectual entrepreneur should focus on partnerships as opposed to competition and means based action, thereby avoiding competitive analysis, market research and goal-setting.

Arend et al. (2015) questions the theoretical underpinnings of these statements by claiming a fully means-oriented approach could be highly restrictive as it restricts the entrepreneur from using means other than those that are directly available. As a result, the entirely effectual mode of action can limit the entrepreneur from being able to carry out predictions on which to base further actions and market research to supplement available means.

Furthermore, as Arend et al. (2015) state "*it is improbable that pure means-driven decisions exist; there is no proof* (...) *that entrepreneurs are not actually influenced, subconsciously or otherwise, by goals*." (p. 16), countering the notion that an effectual mode of action should be used when no product or market has been established yet (Perry et al., 2012). Rather, entrepreneurs naturally will, and should, follow a combined effectual-causal mode of action.

As research on how causal and effectual modes of action should be used together is scarce (Grégoire & Cherchem, 2019, Dias et al., 2019), this thesis displays adds substance to the suggestion by Brinckmann et al. (2010) that the entrepreneur should adopt a dynamic approach of 'planning, learning and doing'.

Additionally, the finding that causal long-term planning activities are linked with effectual actions adds substance to the suggestion by Smolka et al. (2018) that entrepreneurs could adopt a role of 'planning effectuator'. However, the 'hybrid effectuation-causation' construct as suggested by Reymen et al. (2015) remains ill-defined. This thesis adds insight to this construct by not only confirming the important role of planning actions in tandem with effectuation, but also by introducing the importance of market research activities to support the effectual

principles of experimentation through opportunity assessment, means-based action and affordable loss.

Furthermore, by treating causation and effectuation as modes of action as suggested by Grégoire and Cherchem (2019), this thesis helps in answering the call of Arend et al. (2015) for further theory development of both concepts. Further research into how the two modes of actions interrelate could provide a better understanding of their theoretical boundaries.

5.2 PRACTICAL RECOMMENDATIONS

The action research of this thesis demonstrates the usefulness of combining causal and effectual modes of action in entrepreneurship. Both modes of action can precede and support follow-up actions. The findings strongly suggest the importance of using a combined, hybrid form of causal and effectual modes of action during an entrepreneurial process.

For example, (prior) market research precedes and works in tandem with *ReyEffMO1* ('Building on own knowledge base') and *ReyEffMO4* ('Following personal preferences'). Indeed, I decided to invest time and resources into the electric loader project in part because of my prior knowledge supplemented by further market research. From this it becomes apparent that it is difficult to separate market research activities from the effectual mode of action even though they are theoretically linked to causation by Fisher (2012) and Reymen et al. (2015). As an implication for entrepreneurship practice, these cases demonstrate the importance of market research activities to further explore technological trends and customer preferences. In turn, the knowledge gained leads to a more calculated and better substantiated effectual course of action.

Similarly, making long-term projections as to what the future holds (a causal activity) triggered

me to assess new opportunities and made me better understand what I could afford to lose. This experience is in line with the suggestion by Smolka et al. (2018) to act as a 'planning effectuator'. Smolka et al. (2018) suggest the entrepreneur to put an effectual, experimental focus on the product of the firm while maintaining a causal mode of action when it comes to planning and general direction. This thesis adds to this recommendation by advising the entrepreneur to maintain a long-term focus, which is put in practice by making long-term predictions and projections of expected return. As a result, the long-term perspective gained can help the entrepreneur in following a better calculated, deliberate effectual course of action.

Business students, individual entrepreneurs and firms alike are advised to introduce themselves to the hybrid effectual-causal mode of action and its practical implications. Consultancies and educational institutions have the opportunity to function as mechanisms in advocating this novel entrepreneurship approach.

5.3 LIMITATIONS AND FUTURE RESEARCH RECOMMENDATIONS

As with all empirical studies, there are limitations that need to be addressed. These limitations also provide avenues for future research.

The first limitation is related to the generalizability of this thesis. Although my situation provided for a unique opportunity to act as entrepreneur and researcher in one, my action research was carried out in a highly specific entrepreneurial context. Per situation and development stage, entrepreneurship can take different forms and is exercised in differing environmental conditions. As a result, the findings of this thesis may not apply to each and every situation other entrepreneurs may find themselves in. To mitigate the issue of this contextual embeddedness, similar action research studies should be done by and with multiple entrepreneurs to create consistent, scientifically valid findings across the sample.

A second limitation can be found in the subjectivity of data collected. Data was collected through a research diary and is therefore subject to my personal thoughts and interpretations. In multiple occasions my feelings and rationale influenced my further decision-making, in turn making the data subjective in nature. To mitigate the issue of subjectivity, the research diary was coded twice, once by myself and once by my supervisor. Furthermore, to reduce the risk of confirmation bias, the research diary was only coded after data collection was finalised. Although action research is not fully objective in nature (Coughlan & Coghlan, 2002), future studies could reduce subjectivity of data by having data collected in tandem by both the entrepreneur and the researcher.

To further answer the call of Harms and Schiele (2012) and Dias et al. (2019), future studies should focus on the development of an entrepreneurship process model which takes in account the interplay between causation-effectuation. Specifically, the model should take in account long and short-term goal setting and the role of market research activities. As fruitful efforts by Fisher (2012) and Reymen et al. (2015) have resulted in the operationalization of both modes of action in concrete, actionable terms, research avenues to develop all-encompassing process model(s) which take in account both modes of action have opened.

6. CONCLUSION

Inspired by previous action research studies by University of Twente alumni Klein Ikink (2013) and Lamers (2013), the aim of this thesis was to answer the research question '*How can effectual and causal entrepreneurial modes of action be used simultaneously in a small enterprise to strive for optimal effectiveness?*'. Through insider action research, this thesis has found how causal and effectual modes of action are used in a simultaneous manner in a real-life entrepreneurship

scenario. In doing so, this thesis answers calls from entrepreneurship and effectuation literature for more qualitative, practice-based research in the field (Short et al., 2011; Arend et al., 2015; Schulz et al., 2016; Grégoire & Cherchem, 2019). To prevent bias, the real-life use of both modes of action was not deliberate and studied only after completed data collection by means of a research diary.

The entrepreneurial process undertaken in the context of this action research has resulted in a new opportunity, allowing for continuity of my start-up. With that I consider my goal of reaching optimal effectiveness as described in Chapter 1.6 as achieved.

This thesis finds that in practice, the effectual mode of action as introduced by Sarasvathy (2001) cannot be seen as a stand-alone approach to entrepreneurship. Instead, the entrepreneurial process is characterised by a mix of effectual and causal actions, with causation being prevalent alongside effectuation mainly through market research and planning activities. Although the combined use of causal and effectual modes of action is not an unknown topic in entrepreneurship literature (see Brinckmann et al., 2010; Reymen et al., 2015; Smolka et al., 2018), few studies have yet explored how both constructs relate in practice.

This thesis shows promising research avenues exist to explore how causal and effectual actions are used in an interlinked manner and why, and under which conditions. As such, entrepreneurship practitioners and researchers alike need to join forces to shape future research on causation and effectuation. As a result, beneficial insights into entrepreneurial practice can be gained for business and education.

APPENDICES

Appendix A – effectuation codebook

Operationalization by Reymen et al. (2015) based on Read et al. (2009), Dew et al. (2009) and Sarasvathy (2008)	Operationalization by Fisher (2012) based on Chandler et al. (2011)
Basis for taking action: means orientation - Building on own knowledge base and other available existing own resources (including employees and material resources). *(ReyEffMO1)* - Defining only rough visions while leaving the details open. *(ReyEffMO2)* - Using infrastructure of local environment and technological know-how available in environment. *(ReyEffMO3)* - Following personal preferences. *(ReyEffMO4)* - Building on existing network of contacts to identify/create opportunities (includes attracting employees). *(ReyEffMO5)*	Experimentation • Develops multiple variations of a product or service to arrive at a commercial offering: - Creation of multiple different product prototypes *(FisEffExp1)* - Delivering different services in the process of finding an offering *(FisEffExp2)* • Experiments with different ways to sell and/or deliver a product or service: - Use of different distribution channels *(FisEffExp3)* - Use of different revenue models *(FisEffExp4)* • Changes the product or service substantially as the venture develops *(FisEffExp5)*
View of risk and resources: affordable loss - Be willing to make affordable personal sacrifices (including nonmonetary) for the best of the venture. *(ReyEffAL1)* - Finding unused resources in local environment (including subsidies). Investing limited, small amounts of personal/company money, time and effort. *(ReyEffAL2)* - Managing growth expectations and ambitions. *(ReyEffAL3)* - Limiting stakeholders' commitments to levels that are uncritical to them. *(ReyEffAL4)*	Affordable loss • Commits only limited amounts of resources to the venture at a time: - Seeks out ways of doing things in inexpensive ways *(FisEffAL1)* • Limits the resources committed to the venture in to what could be lost: - Develops product or service using only personal resources *(FisEffAL2)*
Attitude towards outsiders: partnerships - Reaching trust-based flexible stakeholder agreements and commitments. *(ReyEffP1)* - Co-create business with stakeholders. *(ReyEffP2)* - Engaging in stakeholder collaborations to pursue opportunities (while commitment extends beyond what they have agreed on earlier). *(ReyEffP3)* - Exposing (draft) products to potential clients early on. *(ReyEffP4)*	Precommitments • Enters into agreements with customers, suppliers, and other organizations: - Negotiates with other parties prior to having a fully developed product or service *(FisEffPreCom1)*
Attitude towards unexpected events: leverage - Accepting, gathering and incorporating unexpected feedback, leading to changing paths of development. *(ReyEffUE1)* - Changing and adapting any potential plans made to accommodate unforeseen events. *(ReyEffUE2)* - Actively exposing to outside influences, while being open minded. *(ReyEffUE3)* - Positively reacting to and incorporating unforeseen developments. *(ReyEffUE4)*	Flexibility • Responds to unplanned opportunities as they arise - Rapidly changes the offering or revenue model of the venture as new opportunities arise *(FisEffFlex1)* • Adapts what they are doing to the resources on hand: - Focuses on what is readily available when deciding on a course of action *(FisEffFlex2)* • Avoids courses of action that restrict flexibility and adaptability: - Consciously rejects courses of action that will lock them in (relationships or investments *(FisEffFlex3)*

Appendix B – causation codebook

Operationalization by Reymen et al. (2015) based on Read et al. (2009), Dew et al. (2009) and Sarasvathy (2008)	Operationalization by Fisher (2012) based on Chandler et al. (2011) and Sarasvathy (2001)
Basis for taking action: goal orientation • Base actions upon expectations (market, technology, policy trends) and predictions (of founders, board members, investors). *(ReyCauGO1)* • Defining and pursuing project goals, product, customer needs or market goals (more specific than 'profit', 'a better planet'). *(ReyCauGO2)* • Defining and satisfying organizational needs (personnel, organization structure, infrastructure, technology, etc.) and selecting between options based on specific goals. *(ReyCauGO3)* • Evaluating planned progress and adapting means based upon feedback. *(ReyCauGO4)* • Searching and selecting contacts, clients and partners based upon predefined plans. *(ReyCauGO5)*	• Identifies an opportunity before developing anything: - Gathers information about customer needs to identify a gap *(FisCau1)* - Analyzes technological trends *(FisCau2)* • Identifies and assesses long-run opportunities in developing the firm: - Maps out (writes up and discusses) scenarios for the firm's future *(FisCau3)* - Creates and compares financial projections for firm growth *(FisCau4)* • Calculates the returns of various opportunities: - Conducts net present value analysis or probability analysis to choose between various alternatives *(FisCau5)* • Develops a business plan: - Produces a written business plan document *(FisCau6)* - Presents a business plan to external audience *(FisCau7)* • Organizes and implements control processes: - Establishes an internal reporting structure (management accounts and monthly reporting) *(FisCau8)* • Designs Gathers and reviews information about market size and growth: - Gathers data about the market *(FisCau9)* - Interviews potential customers *(FisCau10)* • Gathers information about competitors and analyzes their offerings: - Gathers data about competitors *(FisCau11)* - Analyzes data about competitors *(FisCau12)* - Uses data about competitors as an input into key decisions *(FisCau13)* • Expresses a vision and/or goals for the venture: - Articulates a vision or goal *(FisCau14)* - Holds strategic sessions in which goals are discussed *(FisCau15)* • Develops a project plan to develop the product and/or services: - Produces a project plan *(FisCau16)* - Monitors product and market development in relation to a project plan *(FisCau17)* • Writes up a marketing plan for taking the products/services to market: - Produces a marketing plan *(FisCau18)* - Implements and monitors marketing activities in accordance with a marketing plan and implements a clear organizational structure *(FisCau19)*
Attitude towards unexpected events: avoid • Carefully interacting with environment for secrecy reasons (feel threatened by unexpected events, therefore work in isolation as much as possible). *(ReyCauUE1)* • Carrying out plans as defined in cases of unforeseen developments. *(ReyCauUE2)* • In cases of unforeseen developments, focusing on activities within the firm rather than engaging in interactions with the environment. *(ReyCauUE3)* • Drawing back from project or quickly resolving in cases of unforeseen developments. *(ReyCauUE4)*	
Attitude towards outsiders: competitive analysis • Acquiring resources through market transactions or contract-based agreements with stakeholders. *(ReyCauCA1)* • Creating and carrying out patent strategy. *(ReyCauCA2)* • Carrying out competitor analysis and competitive positioning. *(ReyCauCA3)* • Carrying out systematic market research activities. *(ReyCauCA4)*	
View of risk and resources: expected returns • Maximizing personal profit. *(ReyCauER1)* • Calculating and evaluating expected outcomes/returns. *(ReyCauER2)* • Planning development in big steps and with large sums (including large recruitments) (large: relative for company). *(ReyCauER3)* • Postponing stakeholder (including clients) contact at the expense of own funds (focus on internal development). *(ReyCauER4)* • Search for stakeholders that commit the amounts necessary for the execution of the plan. *(ReyCauER5)*	

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