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Faculty of Business Economics

Master of Management

Masterthesis

Understanding the Link between the Use of Effectual Logic and Entrepreneurial Expertise and Performance

Paul Oluwasegun Ojuri

Thesis presented in fulfillment of the requirements for the degree of Master of Management, specialization Business Process Management

SUPERVISOR :

Prof. dr. Wim VANHAVERBEKE



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Master's Thesis

To obtain the Master of Science degree at the University of Hasselt, Belgium.

By,

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ABSTRACT

Globalisation and technological advancements are reducing the metaphoric size of the world today by creating platforms for connecting people globally. This process is responsible for the technological revolution of the 20th and 21st centuries. Like the industrial revolution that welcomed manufacturing processes between 1760 and 1820, this new wave of technological innovations has led to the natural birth of industries previously unknown to the world market. These industries in the beginning were expected to lead the world to the next level of human advancement and for this reason attracted many parties and redefined entrepreneurship. This process caused a chain reaction that even trickled down to the scholastic world. Scholars and researchers began building interests in entrepreneurship—and the entrepreneurial field of study naturally started to expand. Researchers have since been interested in what makes an entrepreneur, how entrepreneurs think, and why the number is suddenly on an exponential rise. One sub-field, however, that is rapidly gaining interest in recent times is the study of how these entrepreneurs actually make decisions—an area in which Sarasvathy (2001a) has redirected the prevailing knowledge in the field. She digressed from the traditional theory of causation and introduced the theory of effectuation. She effectively distinguished between both theories by defining the causal decision process as one that takes a certain goal as given and focuses on choosing between the available set of means geared towards enabling the goal, and effectual decision processes focuses on the selecting between all possible goals that can be achieved given the available set of means.

The theory of effectuation has since sparked a great deal of interest among researchers. They have been trying to understand the “what’s”, “how’s”, and “why’s” of the theory of effectuation, as well as why it is so common among successful entrepreneurs with a lot of experience in their respective fields. One of the major areas of interest in the theory of effectuation is how it relates to the level of experience of the entrepreneur and if it actually yields results which may be measured through performance.

The purpose of this thesis is to measure the relationship between effectuation, expertise, and performance. This will be done by reviewing relevant literature as well as by conducting a qualitative research.

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List of Abbreviations

CAU	Causation
DV	Dependent variable
EFF	Effectuation
IV	Independent variable
MBA	Master of Business Administration
CO	Control
PRE	Prediction
ME	Means
GO	Goal
AL	Affordable Loss
ER	Expected Return
PA	Partnerships
COM	Competition
RES	Respondent

1. Introduction

1.1 The Entrepreneurial Boom

The rise of entrepreneurial skills and thinking in recent years is enough to prove that entrepreneurship right now is booming. According to the Kauffman Index Report 2015, the growth of entrepreneurship is and has been directly related to the health of business economies. According to the annual index, the economic crisis in 2008 resulted in a huge decline in start-ups, in Europe and North America especially. The rebound of the world economy in the coming years, however, gave room for a great deal of economic expansion, which in turn opened up a new wave of opportunities. According to the index, new businesses started by Americans every month per 100,000 of the adult population grew from 0.28 in 2014 to 0.31 in 2015. Other factors that pose as barriers to entrepreneurship—like geography, communication and immigration—especially are reduced every day (HBR 2017).

According to the Kauffman Index report in May 2015, reports showed that immigrants in America are twice more likely to be entrepreneurs than native-born Americans. As a matter of fact, 28.5% of new entrepreneurs in America are immigrants according to the 2015 index. Also, a large percentage of people now have unrestricted access to the wealth of information which the internet holds. Computing has also taken a whole different shape since the early 2000's. Small business owners can connect with a global market with their smart phones; this, together with other business technologies, has dropped access costs significantly for small business entrepreneurs.

Venture capitalism has also been a major factor. According to the MoneyTree Report by PwC and the National Venture Capital Association, the 2013 fiscal year in the United States recorded 29.4 billion dollars in 3,995 deals, marking a 7% increase in dollars and 4% increase in venture capitalist deals from a year earlier (MoneyTree Report 2013).

According to the Harvard Business Review 2017, entrepreneurs in the US have had more impact on the economy than ever before. This is due to the fact that new markets are emerging. Technology and innovation are not just making lives easier, they are also creating new business opportunities, markets, and possible demands.

Moreover, support for female entrepreneurs is now more popular than ever, with varying programs in and from a wide range of countries supporting this bid.

In summary, all of the above reports and evidences point out that entrepreneurship was growing rapidly in the last decade.

1.1.1 The Culture of Entrepreneurial Behaviour

The growth of Individualism—the habit of being independent and self-reliant (Merriam Webster Dictionary 2011 edition)—and entrepreneurship, fuelled by some of the factors previously outlined, has also created a new wave of academic research and scientific inquiries into this new trend of increased entrepreneurship. Social scientists (Dew et al. 2009) have begun creating an entire field of study around the topic, as well as researching social factors that are responsible for the making of ‘an entrepreneur’ (Kotha and Sarasvathy 2001c). This train of questioning has given birth to the sub field of **Entrepreneurial Behaviour**.

Empirical proof has shown that entrepreneurs that have a history of successes in value creation possess similar traits at varying degrees. A lot of research has gone into identifying some of these traits. Dyer, Gregersen, and Christensen (2009), for instance, listed some of these traits as the following: Associating, Questioning, Embracing, Experimenting, and Networking. Some social scientists posit that an analysis of the traits reveals specific behavioural patterns in entrepreneurs. This process of association has resulted in many theories and classifications of entrepreneurs based on their observed behaviours, many of which we will examine in the coming pages.

1.1.2 Entrepreneurial approach

The definition of entrepreneurship has over time been created with cultural undertones, and as cultures evolve in light of advancements made by the human race, so too do these definitions. The fundamental processes that define these approaches include phases such as identifying and evaluating an opportunity (Wigren-Kristoferson, 2016). Wigren-Kristoferson goes on to say that processes such as planning, interacting with potential stakeholders, acquiring and hiring the needed resources for making the venture come true and taking it to the market, and finally managing the venture are usually the first seed of any new venture,

The above fundamentally defines the several definitions and conceptual frameworks of entrepreneurial processes (Aldrich 1999; Brockner, Higgins, and Low 2004). Apart from the

point made by Wigren-Kristoferson, Read and Sarasvathy (2005, p.10) point out that “the entrepreneurial process is conceived 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.”

Other researchers (Bygrave and Hofer 1991, p.14) have a different point of view that stems from the concept of opportunity. They conceive entrepreneurial process as “all the functions, activities, and actions associated with the perceiving of opportunities and the creation of organisations to pursue them.”

1.1.3 Perception of Opportunity

The boom in the scholastic research of entrepreneurship has also spawned scholastic interests in the perception of opportunity from many different scholars (Shane and Venkataraman 2000), not only in the recognition of opportunity (Fletcher 2006; Baron and Ensley 2006; Grégoire, Barr, and Shepherd, 2010; George, Hayton, and Zahra 2002; Hofstede et al. 2004), but also in the development of opportunities (Davidsson 1995; Kirkman, Lowe, and Gibson 2006; Miller, 2007) as well as in entrepreneurs further developing and creating their own opportunities (Alvarez and Barney 2007; Bosma et al. 2009; Davidson 2003; Mitchell, Mitchell, and Smith 2008).

Sarasvathy showed the importance of understanding how opportunities are perceived by explaining how an opportunity doesn't mean anything until such opportunity is perceived by an actor as an actual opportunity and then acted upon. What Sarasvathy et al. (2010) tried to imply here is that whether something can be referred to as an opportunity is largely dependent on the ability of the actors to actually identify them. Also, the availability of uncertainties encourages the rise of opportunities (Sarasvathy et al. 2010). The actor's ability to identify the opportunities that emanate from the uncertainties may depend on the skills and expertise that this actor has developed over time in the area from which the opportunity emanates. This means that experienced actors may identify opportunity with relative ease because they have picked up skills that aided them in opportunity identification in the past.

1.1.4 Understanding Expertise

Interest in research about expertise goes as far back as 1973, with Chase and Simon looking to understand the nature of chess masters (Chase and Simon 1973). Their argument was that

the mastery of the game of chess is dependent on certain factors such as the ability to store information, perceive problems, and create solutions to these problems. (Dew et al. 2009; Boujelbene and Ghorbel 2013).

The results from Chase and Simon have since been translated to, and interpreted in, many fields—including taxi driving, medicine, consumer decision making, and even firefighting (Dew et al. 2009). In these fields, experts have been identified with exceptionally high task performance as a result of the ease and speed they use while solving complex problems (Read & Sarasvathy 2005).

This nature of high performance has been trickled down in the field of entrepreneurship (Mitchell 1994). Experienced entrepreneurs acquire certain skills and cognitive frameworks that help them become experts in entrepreneurship over time (De Jong 2014; Dew et al. 2009). To achieve a more cross cutting definition, an expert can thus be defined as “someone who has attained a high level of performance in the domain as a result of years of experience” (Foley and Hart 1992, p.233-269) as well as consistent practice (De Jong 2014; Ericsson, Krampe, and Tesch-Romer 1993).

1.2 Effectuation: An Introduction

The above, together with other obvious factors compelled cognitive scientist Sara Sarasvathy of the University of Virginia to try to understand what entrepreneurs have in common. More precisely, how they (entrepreneurs) discover and seize major opportunities. She asked a selected number of entrepreneurs who founded high grade ventures to find out what they have in common. The result? Effectuation.

The concept of Effectuation is a 20th century concept that researchers have considered to be under researched in the past two decades. The idea explores how successful entrepreneurs make real-world decisions. It has proven to be remarkably accurate, and has become the basis for most advanced entrepreneurship programs at the world's leading business schools. Sarasvathy's doctoral dissertation (1998) defines effectuation as the ‘processes [that] takes a set of means as given and focuses on selecting between possible effects that can be created within that set of means’ (p.245).

Sarasvathy (1998) laid the empirical backstory in an experiment where she took 27 expert entrepreneurs who have founded companies between \$200 million and \$6.5 billion in size, asking them to identify the market for a new product. After explaining the theoretical framework, Sarasvathy (2001a&b) concluded as follows: “the evidence gathered here has clearly established that expert entrepreneurs have a preference for using effectual reasoning in creating markets for new products. In fact, over 63% of the subjects used effectuation more than 75% of the time”.

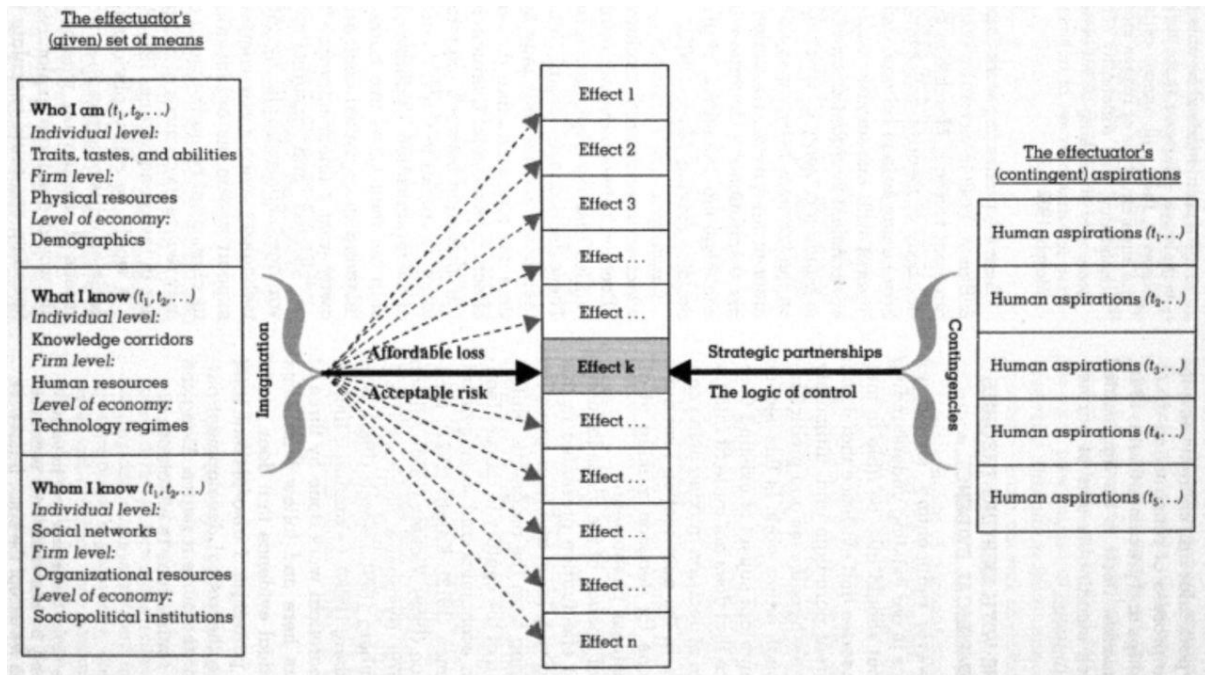


Figure 1: The theory of effectuation (Sarasvathy, 2001a, p.253)

Sarasvathy in 2001 points out that the theory of effectuation has over the years been built up by a number of notable scholars such as Weick, Knight, Wiltbank, March, Buchanan, Vanberg and Mintzberg. **Figure 1** illustrates the theoretical framework of the theory according to Sarasvathy. The *effectuator* channels the available means (Who I am, what I know, and whom I know) vis-à-vis what they are willing to give up or risk (affordable loss/risk). This results in a range of opportunities that the entrepreneur can choose from. In summary, it tries to translate the available resources into aspirations by emphasizing risks, partnerships and control.

“Effectuation inverts the fundamental principles, solution process and logic of predictive rationality” (Dew et al. 2009, p.14). This comes with empirical proof that successful entrepreneurs use effectuation processes (Dew et al. 2009). Although not many start-ups use

the effectuation process in its entirety, they unconsciously follow steps that resemble the effectuation process.

The very foundation of effectuation as a concept has been laid with large and high-grade entrepreneurs. According to David S. Rose on Quora.com,

“The original work (on effectuation) was done 10-15 years ago and has propagated since then in the academic world. But despite being an active (hyperactive?) entrepreneur, mentor, investor, advisor and entrepreneurship lecturer for that entire period, I have not heard one peep or whisper about the subject from any practitioner, anywhere, at any time in the past decade. Truly amazing.”

(<https://www.quora.com/On-what-interesting-topics-I-can-develop-my-masters-thesis-in-innovation>)

However, there haven't been a lot of reports on the results of effectuation in practice, especially relating to performance. A few papers have tried to measure the performance of effectual logic using varying benchmarks. This makes it difficult to draw a common conclusion across all boards.

This paper analyses relevant studies and literatures in an attempt to pragmatically draw a conclusion on the relationship between effectual logic and performance.

1.3 Research question

The main topic I want to examine in this thesis is this: “Is there a link between the use of effectual logic, entrepreneurial expertise and entrepreneurial performance?”

In order to answer the main question above, the following sub-questions would be put into consideration:

1. What is currently known, in terms of literature, about effectuation as well as its relationship with venture performance?
2. How does effectuation differ from the traditional causal logic?
3. Is there a relationship between entrepreneurial experience and the use of effectual logic?

1.4 Definitions

The following definitions are used in the previous section as well as throughout this thesis.

1. Effectuation: “Effectuation is a way of thinking that serves entrepreneurs in the process of opportunity identification and new venture creation by including a set of decision-making principles expert entrepreneurs are observed to employ in situations of uncertainty” (Wikipedia).
2. Performance: Performance here is defined “as the accomplishment of a given task measured against pre-set known standards of accuracy, completeness, cost and speed” (Business dictionary).
3. Entrepreneur: A person who sets up a business or businesses, taking financial risks with the hope of making profit.

1.5 Research method

In order to understand what the effects of effectual logic is on entrepreneurial performance, it is important to take into consideration the relevant literature. All related literature will be considered and structured to fit a theoretical framework that will act as a backbone for the rest of the thesis.

The methodology used is mainly qualitative interviews (think aloud method) with entrepreneurs. The choice for this methodology allows for an in-depth examination of effectuation in practice. These meetings were also followed by surveys to ensure a consistency between the results from interviews with entrepreneurs and the decision making process of the respondents.

In order to come up with relevant conclusions, a diverse number of entrepreneurs from varying industries and experience levels were surveyed. Due to the variations in industries, getting a common measure of performance (profit, return on assets, sales etc.) would not only have been cumbersome but would also have led to inaccurate results. To mitigate this dilemma, I asked respondents to reveal how satisfied they are with their business performance based on a scale of 1-5 (1 being completely unsatisfied and 5 being completely satisfied). Also, the respondents were asked to give their opinions on certain statements which were designed to test how entrepreneurs approach issues like resource management, competition, partnerships, market analysis, and more.

2. Literature Review

This chapter shows a review of relevant literature and their additions to research on effectuation. Section 2.1 examines how firms and ventures come to be. This section gives an outlook on the firm creation of a firm as well as the decisions that drive this process. Section 2.2 addresses the theory of effectuation. It looks at how the theory is, as well as the prevailing theory prior to the birth of effectuation. Section 2.3 presents some of the empirical finding on the theory of effectuation, entrepreneurial expertise and performance. Section 2.4 concludes the chapter by summarising what is already known about effectuation.

2.1 The Entrepreneurial Process – *The Metamorphosis of a firm*

The entrepreneurial process simply translates an idea into a literal firm (Sarasvathy 1997). Essentially, the entrepreneurial process is a vital element of the pre-firm process. In her paper titled “How firms come to be” (1997), Sarasvathy attempted to present the entrepreneurial process as a key element in migrating from the idea stage to the firm stage.

2.1.1 *The Idea Stage vs. The firm Stage*

The basic foundation of any firm or venture is to translate an idea into a firm. The firm serves as a physical representation of an idea (Sarasvathy 1997). She goes on to give examples of various forms ideas could take.

Concept	Example
Product	Plastic Containers
Service	Packaging Design
Technology	Blow Moulding
Innovation	Stretch Blow Moulding
Market-need	Packaging of liquids

Table 1: Understanding Ideas (Sarasvathy 1997)

Ideas are naturally abstract in the beginning. To translate them, there is a need to first conceptualise them. **Table 1** shows the different ways such ideas can be conceptualised. The success or failure of a new firm largely depends on the end product of the entrepreneurial process. If a viable solution is reached, a firm is born. On the other hand if a solution cannot be reached, the process is aborted (Sarasvathy 1997). Sarsavathy also made a point of consciously separating the success and failure of an entrepreneurial process from that of the

firm. This means that it is possible for a successful entrepreneurial process to create a firm but that the firm may fail sometime in the future. In essence, the entrepreneurial process only creates and makes available the opening conditions for the firm's future development but does not in fact ensure the success of the firm.

This separation between the entrepreneurial process and the creation of the actual firm clearly reveals a gap where the entrepreneurial process ends and the firm begins. Sarasvathy points out the importance of developing a certain criterion for defining the end of the process and the beginning of the firm. Essentially, these criteria are developed as constraints to the initial problem the firm attempts to solve (Sarasvathy 1997). Three definitions of the firm have been used to develop the criteria for the model for the cut-off point at which the firm comes into being:

1. Production Function: The firm as a production function that translates inputs into outputs through a technology.
2. Nexus of Contracts: The firm is a nexus of contracts between individual agents
3. Core Competency: The firm is a set of core capabilities that enable it deal with the change in its environment (Sarasvathy 1997).

These definitions marks where the entrepreneur process ends and the firm begins. They have in turn brewed more theories of the firm (Sarsavathy 1997). Listed below are examples of theories brewed from the original three.

- i. Theories that involve resources
Economic theories over the years, starting with Alfred Marshall (Marshall 1948) and continuing till the modern micro-economic theories in our present day all present the firm as a unit of production in the economic process (Sarasvathy 2008).
- ii. Theories that deal with stakeholders
Commencing with Cyert and Marech in 1963, behavioural theories of the firm view the firm as a nexus of groups and managers who *satisfice* rather than maximize (Simon 1959). Groups with competing interests come together to

achieve a mutual conciliation by accepting a accepting a certain rule set, conditions and solutions (Sarasvathy 2008).

iii. Theories that deal with the environment

Strategic theories of the firm (Andrews 1980) look at the coalition between the organisational strengths and weaknesses of a firm and the environmental opportunities and threats (Sarasvathy 2008). This line of thought splits into two here based on Edith Penrose's theory of the growth of the firm as antecedent (Penrose 1959).

One line of thought emphasizes the development of knowledge-based means within the firm. These knowledge-related resources are developed through a firm's experience with the interplay within the ecosystems it exists in (Sarasvathy 1997). This line of thought points out the various manners in which a firm can develop and store its knowledge and they include:

- a. Routines – This is explained by Sarasvathy as “*path-dependent knowledge bases that help explain evolutionary change in an industry population through selection n arguments such as those found in the theories of biological evolution*” (Nelson and Winter 1982, p.70).
- b. Absorptive capacity – This concept employs evolutionary ideas from cognitive sciences and allows a firm the flexibility of implementing new technologies in its strategy (Cohen & Levinthal, 1990).

The second line of thought takes it from an industry-level and employs concepts such as market power based on Bain's entry-barrier model (Bain 1956) and imported into the field of strategy by Porter (Porter 1980). This idea examines how markets are designed and how a firm can make the most out of that industry design.

2.1.2 The Entrepreneur Process – Making Decisions

The entrepreneurial process involves selecting and/or creating a mix of resources, stakeholders and an environment that turns the idea into a firm (Sarasvathy 1997).

This selection process often involves a number of related entrepreneurial decisions. Sarasvathy points out that entrepreneurial decisions differ from ‘*mundane*’ decisions in the sense that entrepreneurial decisions are borne out of four major areas:

1. Resources

Resources, according to Sarasvathy, refer to those non-human components that are used in translating an idea to a firm (Sarasvathy 1997). There is often the need to decide on which resources are to be selected and which way they are to be combined. This typically inevitably leads to the creation of some sort of production function with essential inputs and constraints (Sarasvathy 1997).

2. Stakeholders

This involves every stakeholder internal to the firm apart from the entrepreneur. Decisions arising from this area typically involve those surrounding the issue of contracts, corporate culture and social responsibility (Sarasvathy 1997).

3. Environment

This area looks at the interplay between a firm and its external environment which includes but isn’t limited to the competitive and macro environment. Decisions that come out of this area are often those that surround issues of collaborations, core competencies, market identification, strategy development etc. (Sarasvathy 2008).

4. Entrepreneur

This includes issues surrounding leadership, vision and the subjective theories of the entrepreneur who makes the selection and creation decision in the three other areas.

2.2 *The Birth of Effectuation*

Effectuation is a relatively new-theory that was borne out of the decision making area of the entrepreneurial process. Sarasvathy’s (1998) doctoral dissertation was the first point of empirical evidence for the theory of effectuation—“a logic of entrepreneurial expertise, an entrepreneurial process that is an inverse of the classical causal process” (Nienhuis 2010). Effectuation is in effect one of the modern theories of entrepreneurial decision making

and thinking. Following her paper titled ‘How firms come to be’ in 1997, where she identified the factors that surround and govern entrepreneurial decision making, Sarasvathy looked to take it a step further by answering even more simpler questions such as how do they (expert entrepreneurs) do that? Or are there any universal methods or principles they (expert entrepreneurs) use?

To answer these questions, Dr. Sara Sarasvathy, using her background as a cognitive scientist, conducted a study of expert entrepreneurs. The result of this experiment led to the birth of effectuation.

2.2.1 Effectuation: An overview

The theory of effectuation was introduced by Sarasvathy (2001) and has been a growing subfield in the entrepreneurship research. Sarasvathy (2001a&b) introduced a new entrepreneurship thinking process different from the traditional causation theory. Sarasvathy laid an empirical foundation for her effectuation theory in her work (Sarasvathy 1998). This foundation created a theoretical skeleton for the paper that started it all—“Causation and Effectuation: Toward a Theoretical Shift from Economic Inevitability to Entrepreneurial Contingency” (2001).

Effectuation logic challenges the very root of mainstream business management logic taught in business schools across the world. Causal logic is based on existing means and starts out with an already determined goal or object. (Lutsch and Mortsensen 2013). It assumes that people charged with decision making have adequate knowledge on markets, customers, industry and economy (Lutsch and Mortsensen 2013). They use this information to identify the fastest, cheapest, and most efficient alternative to achieve the goal (Sarasvathy 2008). Causation, on the other hand, takes a particular effect as given and focus on means to create that effect (Sarasvathy 2001).

For young start-ups, however, not many of the pre-existing variables like market dynamics and consumer expectation are often known. This drives entrepreneurs to come up with products or services under conditions of extreme uncertainty (Ries 2001). These uncertainties provide the theory of effectuation a solid foothold. This is because effectuation in its primal form simply takes a set of means as given and focus on selecting between possible effects

that can be created with that set of means (Sarasvathy 2001). This singular logic forms the very essence of Sarasvathy's work.

Sarasvathy goes on to note that the intellectual lineage of the ideas influencing the theory of effectuation presented in her work includes a very large and impressive list of thinkers, ranging from the pragmatic philosophers at the turn of the century to current leaders of thought in economics and management: Pierce (1878), James (1912), Knight (1921), Lindblom (1959), Simon (1951), Vickers (1965), Allison (1969), Weick (1979), Nystrom and Starbuck (1981), Buchanan & Vanberg (1991), March (1982), Burt (1992), and Mintzberg (1994) (Sarasvathy 2001).

This claim goes on to show that effectuation has been hinted at over the last century but the lack of empirical evidence has retarded its growth until Sarasvathy. She points out that of these influencers, Knight, March, Weick, and Mintzberg had the most effect on her work on effectuation.

In an attempt to connect the dots and also fill in gaps between these works, Sarasvathy came up with a model of effectual reasoning that explicitly addresses the following;

- (1) A logic of control (rather than prediction)
- (2) Endogenous goal creation, and
- (3) A (partially) constructed environment.

Additionally, building upon the preceding theories' sub concepts which basically pose a disconnect of intention, action, and meaning. Here, I show how effectuation inverts causal reasoning to indicate a new connection among means, imagination, and action that helps generate intentions and meaning in an endogenous fashion" (Sarasvathy 2001, p.256)

Sarasvathy (1998, 2001) sought out empirical evidence of effectuation that some of the previous literature were lacking. Using a think aloud method of cognitive science, she sampled a total of 27 expert entrepreneurs who had founded business that valued between \$200M - \$6.5B, asking them to identify a market for a new product. She instructed them to "shape and create the potential market rather than divide it through analytical or estimation techniques" (Sarasvathy 2001, p.29) and the hypothesis drawn from the result can be seen in the resulting figure.

Type of Reasoning Approach With Respect to Experience and Firm Lifecycle

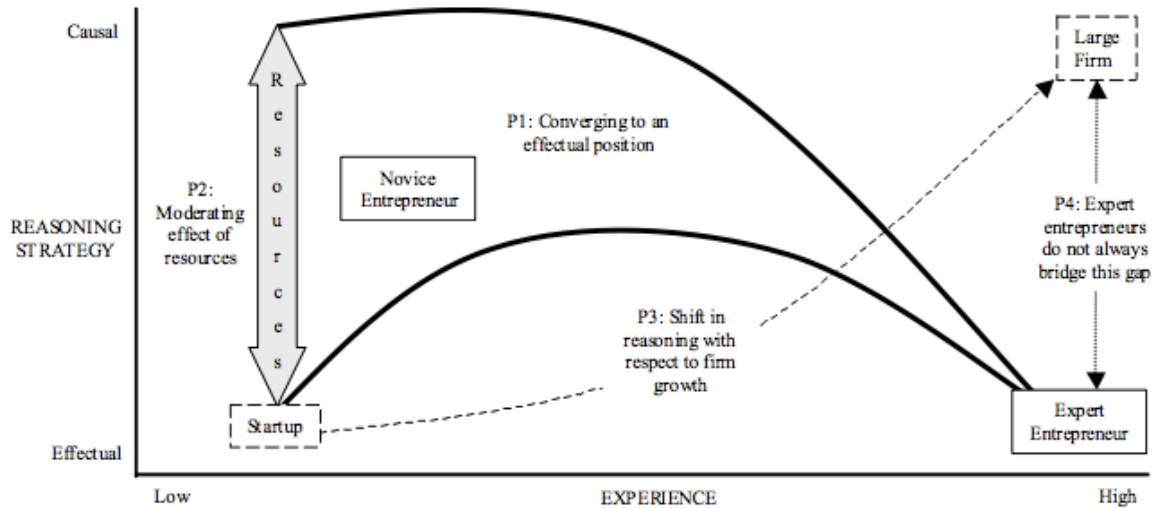


Figure 2. Types of reasoning approach with respect to experience and firm lifecycle. (Read and Sarasvathy 2005, p.37).

Figure 2 above summarised the conclusions of the experiment conducted by Sarasvathy. Although novice entrepreneurs may differ on their use of causal or effectual logics, they tend to prefer effectuation in the early stage of new ventures more as they become experts. Also, novice entrepreneurs who are either greatly causal or greatly effectual often show an ability to balance causal and effectual approaches in the early stages of new ventures before developing a higher preference for effectual logic as they become experts.

Another conclusion was that the amount of resources available to novice entrepreneurs is directly proportion with their preference for causal logic. This means that the more resources available to a novice entrepreneur, the more causal their decisions are likely to be. This is not the same case with expert entrepreneurs, as the number of resources available to them do not necessarily influence their effectual actions.

Thirdly, firms that end up successful are often more likely to have begun with an effectual bias and grown causally as they grow and survive over time. Lastly, only a small percentage of expert entrepreneurs will be successful enough to make the switch from just an entrepreneurial firm to a large corporation (Read and Sarasvathy 2005, p.37).

With the help of the data obtained from the experiment, she then developed the effectuation process, which was a direct opposite of the causal model taught in MBA classes—a process that is not driven by ends but by means.

Another result from the experiment was that “none of the subjects in this study, including the 4 who suggested using traditional market research techniques, actually used this top-down causal model for creating the market for venturing” (Sarasvathy 2001b, p.6). What Sarasvathy realized is that in reaching the final consumer, the traditional models take a very distinct path from what the result the experiment showed. Some of the distinctions are shown in **Figure 3 below**:

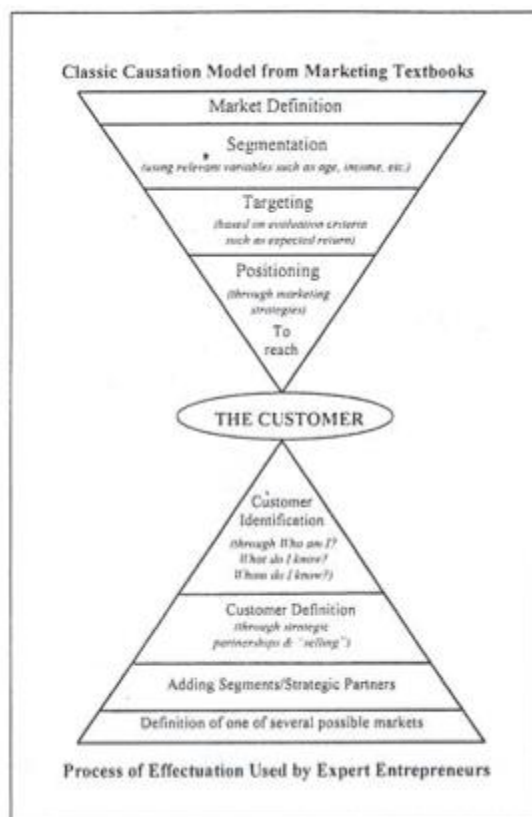


Figure 3 Causation vs. Effectuation (Read & Sarasvathy, 2005)

Noteworthy is how the traditional causation theory takes a very direct approach from defining markets to targeting customers with a very conscious intent. The process of effectuation is quite the opposite. The entrepreneur tries to first look inward, understand their capabilities,

what kinds of friends (partners) they have, risks they can afford to undertake, and only then identify what possible market segments are available to them.

Another important point of note from the earlier works of Sarasvathy (1998, 2001) is that effectuation is not always prioritized over the traditional causal model. She goes on to explain that some situations specifically demand the effectuation process. Since effectuation is majorly characterised by no clearly defined goal, an unpredictable future, and a “means” enabling environment, it is limited to circumstances that present these factors. For instance, this may mean a ready-made market where human involvement is not necessary in determining the future. This kind of scenario happens when a firm grows quite significantly. This relates to the life cycle of a firm as shown in figure 2 (Read and Sarasvathy 2005).

Although the effectual logic was positively related to entrepreneurial expertise (Lutsch and Mortsensen 2013), the causal logic was not negatively related. According to Sarasvathy,

“Both causation and effectuation are integral parts of human reasoning that can occur simultaneously, overlapping and intertwining over different contexts of decisions and actions. Yet in this article, I purposely juxtapose them as a dichotomy to enable clearer theoretical exposition” (2001, p. 245).

Dew et al. (2006) add more support to the argument that for effectuation to be appropriate, a number of conditions must be met by weighing effectuation in a theoretical balance characterised by prediction and control.

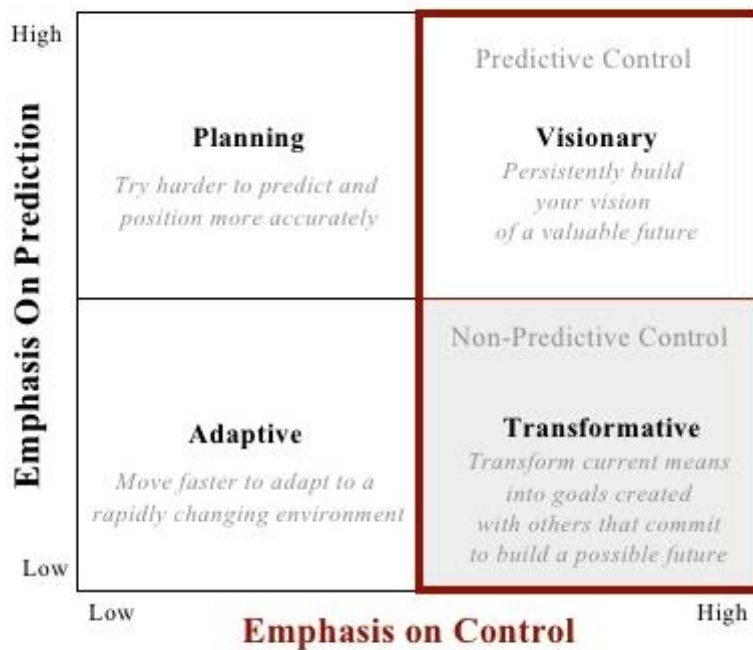


Figure 4: Theoretical Convergence areas in entrepreneurship research (Read, Song, and Smit 2009, p.986)

The result was a two-by-two table (as shown in **Figure 4**) broken down into four areas which was defined (Lutsch and Mortensen 2013) as follows: 1) a low emphasis on control and a high emphasis on prediction is termed planning; 2) a low emphasis on both control and prediction termed adaptive; 3) a high emphasis on both control and prediction is termed visionary; and lastly, 4) a high emphasis on control but a low emphasis on prediction is termed a transformative approach. (Lutsch and Mortensen 2013)

2.2.2 The Causation Theory – An Inverse of the Effectuation Model

The causation principle is based on the assumption that entrepreneurs have adequate knowledge and hence can predict outcomes (Dew et al. 2009). This means that entrepreneurs have relatively adequate control over their working environment and can use some of the inputs to comprehensively determine possible outputs (Sarasvathy 2008). Using the example of a restaurant, assuming that the location would be successful is largely determined by a deep research on the market to ensure the restaurant is strategically placed. An entrepreneur following the causation logic would have used means such as market research as well as resources to try to estimate the opportunity of a restaurant. Some of this may include interviewing possible customers in a bid to understand expectations and predict profitability.

Entrepreneurs here seem to follow through with opportunities on grounds of possible return juxtaposed with the accompanying risks (Shane and Venkataraman 2000; Sarasvathy 2008).

On the other hand, an entrepreneur following the effectuation approach would seek how to share their love for culinary and food with the immediate world (Sarasvathy 2001). A starting point would be with their immediate resources of family, friends, and know how (in this case, experience, education, and more) (Corner and Ho 2010; Sarasvathy 2001, 2008). Her means here could be her culinary school education, work experience, and her immediate social networks. The effectual approach would see her outcome shaped by the interactions of her means as well as commitments made to her by possible stakeholders. In summary, we see the entrepreneur employing the resources in their immediate environment in a bid to bridle probabilities in the future and achieve a result—a new venture (Sarasvathy 2001, 2008). This is an inverse of the causation logic where the entrepreneur aims at a goal—the aforementioned new venture—hoping that it will work out in an unpredictable future as shown in figure 5 (Chanler et al. 2011; Sarasvathy 2001, 2008).

In summary, the perception of resources (or means) and goals is one of the major differences between causal reasoning and effectual reasoning. While causal reasoning selects between means to achieve a pre-determined goal, effectual reasoning imagines a possible new end using a given set of means. This is illustrated in figure 5 below.

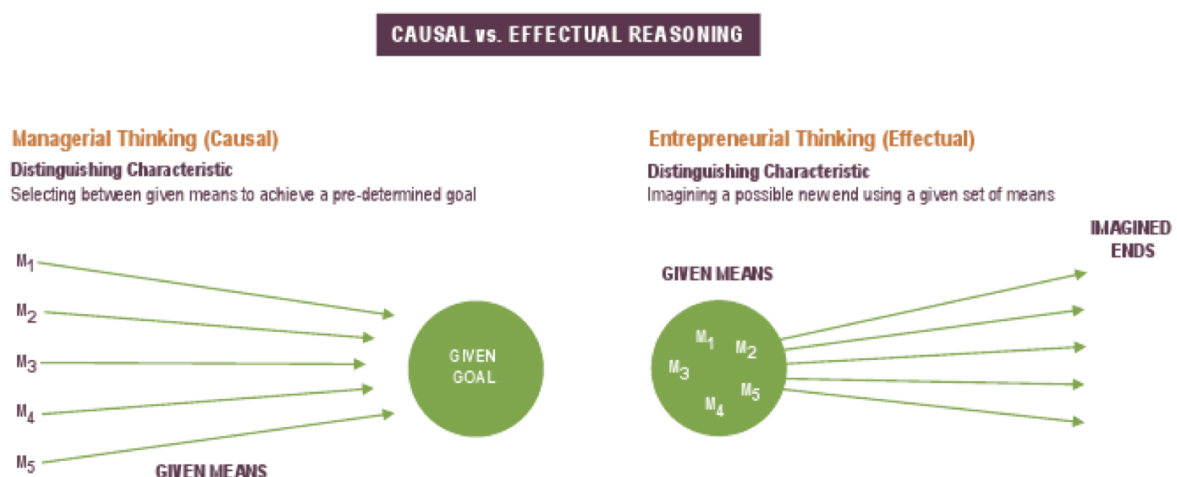


Figure 5: Causal vs. Effectual reasoning

2.2.3 The Principles of Effectuation

In summary, situations characterised by uncertainty often requires effectuation while those where the future is relatively predictable calls for the traditional causal logic. (Lutsch and Mortsensen 2013). There are however, core principles (Sarasvathy 2001) that help manage the effectuation process. They include:

1. **The Bird-in-Hand Principle:** Entrepreneurs begin with the resources they have at hand. They consider immaterial resources like who they are and what they know as well as their networks. Typically, the entrepreneurs do not start out with goals in mind, but consider the tools available to them, which may include friends and family as well as their capabilities and know how (Sarasvathy 2008). All of these drive them towards an end that is not preconceived. This principle pushes starting out with the means available even if a perfect opportunity is not in sight.
2. **The Affordable Loss Principle:** The goal is here is to try to draw up the possible losses and minimize it to the lowest possible minimum instead of focusing on possible profits (Chandler et al. 2011; Dew et al. 2009; Sarasvathy 2008). Opportunities are weighed from the loss perspective and whether these losses are somewhat acceptable or not, rather than looking at the attractiveness of these opportunities.
3. **The Crazy Quilt Principle:** Creating partnerships and networks that are willing to commit to creating value (Chandler et al. 2011; Dew and Sarsvathy 2005) is key, and as such, trust and goodwill is very important.
4. **The Lemonade Principle:** “If life gives you lemons, make lemonade.” Contingencies and surprises are handled as possible opportunities and avenues to create and/or enter new markets (Duening et al. 2012; Sarasvathy 2008). Flexibility is the main key here, rather than fixating on pre-set goals.
5. **The Pilot-in-the-Plane Principle:** According to the effectuation principle, the future is not left to chance but rather created. The entrepreneur does this by focusing on activities that are within their control. They do this with the understanding that if they control the present, they can, to a large extent, determine the future. All the other

principles come to play here. The entrepreneur reduces chance by controlling the controllable factors that contribute in determining the future.

All of these principles come together to both define effectual reasoning and differentiate it from causal reasoning. These principles characterise a process that is not driven by ends but by means.

2.3 *Empirical Findings on Effectuation*

The proponents of the theory of effectuation tried to use the theory to point out a new entrepreneurial thought process that is different from the traditional causal logic. Tests for this logic were built around new establishments and opportunities and were drawn against how entrepreneurs and other decision makers address uncertainty. (Dew et al. 2005, 2013). As previously explained, these results showed very positive arguments for the use of effectuation in fairly large organisations (Sarasvathy 1998, 2001). In a social experiment where 27 entrepreneurs were asked how they would approach and consider markets for an imaginary product, the results showed that a higher percentage of these entrepreneurs followed traces of the effectual logic. A conclusion could be that more successful entrepreneurs follow a means-based (effectual logic) approach towards new opportunities when turning prospects into business (Sarasvathy 2008). These entrepreneurs are often in line with the principles that govern the effectual thought process—strong networks of strategic relationships with stakeholders, leveraging risks and contingencies, as well as making use of the affordable loss principle (Dew et al. 2009; Sarasvathy 2008).

Other results have shown a positive relationship between some principles of effectuation and the performance of new ventures and start-ups. Using a meta-analysis, Song and Read (2009) showed the existence of a positive and substantial relationship between the bird-in-hand principle and the performance of new establishments. Fisher (2012) also made available statistical support for other effectual principles including the crazy quilt principle, the bird-in-hand principle, and the affordable loss principle from some of the real life cases looked at (Engelen et al. 2012).

Venture performance as a sub-field is quickly gaining attention in its association with the theory of effectuation. Most results show a positive relationship between these two concepts.

But the question remains, does effectuation lead to venture performance or does venture performance require effectuation?

2.3.1 Relating Effectuation and Venture Performance

Historically, most literature on effectuation often stops at identifying the reality of the principles of effectuation in practice. What they fail to do is determine if in reality these principles yield results. As a result, not many papers connect the dots between the principles of effectuation and performance. Read, Song, and Smit (2009) identified this research gap and for the first time directly related effectuation and all of its principles to the performance of start-ups empirically. They performed a meta-analysis on articles from the *Journal of Business Venturing* that had nothing to do with effectuation but tested positive for all but one of the four independent variables. To do this, they listed four effectuation principles (means, partnership, affordable loss, and leveraging contingencies) as independent variables and looked for such articles that used at least one of these principles. The results showed 9897 start-ups from 48 studies and found a positive relationship with all of the independent variables except affordable loss. Though these results are positive, the study is not enough to provide the conclusion that in fact the use of effectual logic is positively related with performance.

Another point worthy of note here apart from the result itself is the methodology employed. It opened a new spectrum for future research in measuring the performance level of effectual principles. Nienhuis (2010) employed this methodology in incubated start-ups and concluded that those entrepreneurs preferred effectuation to causation theory.

2.3.2 Measuring and Understanding Venture Performance

Venture performance could be interpreted in a wide range of possible ways. This is because of the large variation in variables that determine it. Some of these variables are profit, revenue, growth in sales, capital expenditure, customer satisfaction, cash productivity ratio, return on investment, market share, stock value, and more (PWC Corporate Reporting, June 2015). The task here is to ensure that when performance is measured between two or more ventures, the same indices are used across board to enable a more pragmatic result. However, this is not often the case. Situations arise where problems of availability and consistency of data ensue, thus making it more difficult to compare results between studies (Murphy, Trailer, and Hill 1996).

2.3.3 Understanding Expertise

There is a common consensus in the scholastic world regarding the contextual nature of the concept of expertise (Dew et al. 2009). For instance, a certain doctor might be an expert at medicine while at the same time terrible at basketball. In essence, research around the issue of expertise are done based on the context in question. As previously defined, experts remain people who have attained a high level of years of performance in their specific **domain** as a result of years of experience and deliberate practice (Ericsson et al. 1993; Foley & Hart 1992).

Chase & Simon (1973) tried to understand what factors are responsible for expertise. They attempted to do this by extensively studying the nature of chess masters. One of their earliest discoveries was that contrary to popular belief, the mastery of chess had very little to do with intelligence but instead was associated to a higher degree with how these players access problems, store information, and make decisions (Boujelbéne and Ghorbel 2013). These results from the study of chess masters have since been tested in fields such as music, sports, and typing (Dew et al. 2009).

One common distinguishing factor among experts in many fields is that they solve complex problems quicker and more accurately (Read and Sarasvathy 2005). Ericsson and Smith (1991) added that the show of superior performance goes beyond just experiences and technical know-how, but also incorporates a number of factors. In a bid to further understand these factors, Ericsson and Smith (1991) also suggested an experimental system directed at researching and understanding these complex systems. In figure 6 below we see how this testing would work in revealing expertise in the fields of chess, typing, and music.




Domain	Presented Information	Task
Chess		Select the best chess move for this position
Typing		Type as much of the presented text as possible within one minute
Music		Play the same piece of music twice in same manner

Figure 6: Three examples of laboratory tasks that capture the consistently superior performance of domain experts in chess, typing & music (Ericsson & Lehmann, 1998)

Though this seems to reveal varying laboratory tests due to varying domains, Ericsson (2008) notes that all the actors within these varying domains—including even the most talented—all need an average of 10 years of focused engagement in the domain before they attain an expert level in that domain, be it sports, sciences, or art (Ericsson 2008). A graphical representation of how experts develop ‘abilities’ over time is displayed in **Figure 7** below.

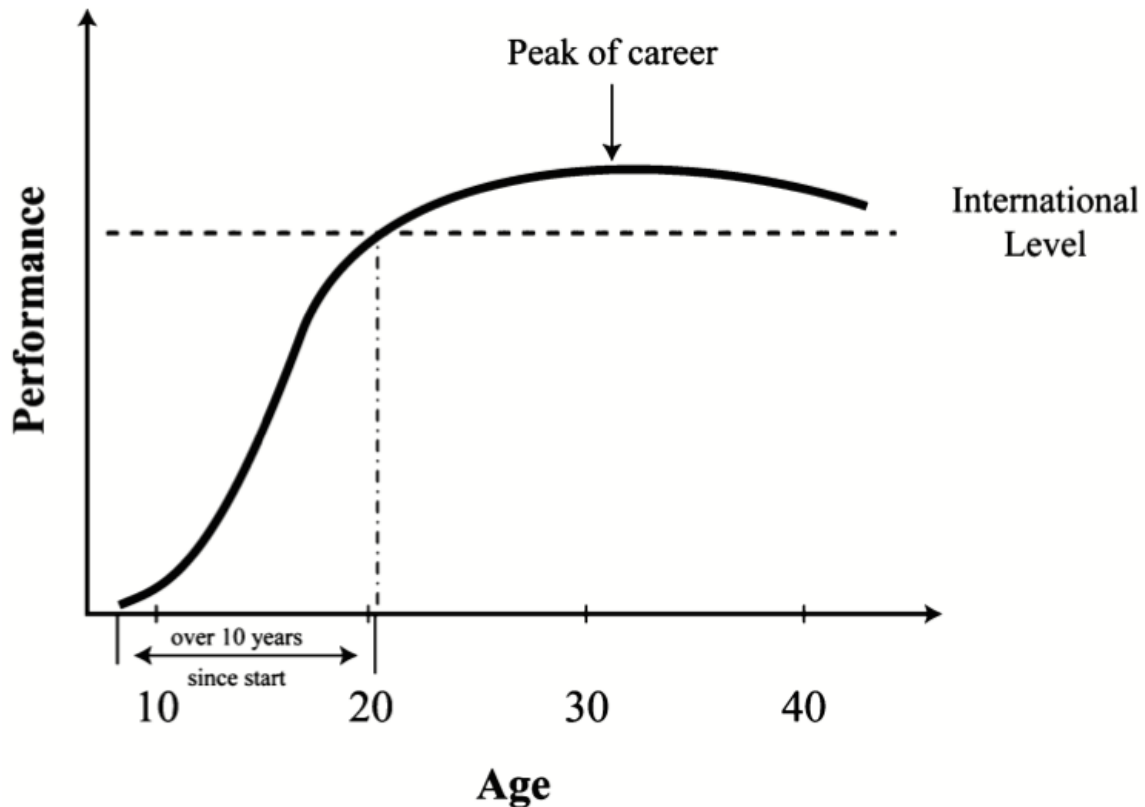


Figure 7: Increase in expert performance as a function of time (Ericsson 2008, p.90)

How does this translate in entrepreneurship? Mitchell (1994) was the first to incorporate some of the results from Ericsson and Smith (1991) into entrepreneurship as a form of expertise. This has then sparked up more interests in the entrepreneurial expertise (Baron and Ensley 2006; Dew et al. 2009). The conclusion from the years of research on the subject of entrepreneurial expertise correlates with that of Ericsson and Smith (1991). The best performing entrepreneurs—who could be referred to as experts, like in other domains—have been heavily involved in entrepreneurship through consistent deliberate practice over time (Baron and Ensley 2006).

Sarasvathy (2001a) argues that as a result of their consistent engagement in their domain, expert entrepreneurs design their decisions in a way that defines the conventional causal theories of entrepreneurship and strategic management (De Jong 2014). These conventional causal theories are the traditional theories taught to ‘novices’ in business schools (Dew et al. 2009).

2.3.4 Differentiating Novice and Expert Entrepreneurs

Apart from the previously stated difference between expert and novice entrepreneurs, Dew et al. (2009) provided more significant variances between expert and novice entrepreneurs both on a general and entrepreneurial level.

–	GENERAL LEVEL	ENTREPRENEURIAL LEVEL
Expert entrepreneurs compared to novice entrepreneurs	<ol style="list-style-type: none"> 1. Experts have an ability to obtain more information from minimum sources of data. 2. Experts can perceive tasks in a more holistic manner 3. Experts can ignore predictive information such as market research 	<ol style="list-style-type: none"> 1. Experts are more likely to view resources on a holistic level and draw on these means as opposed to being goal-oriented. 2. Experts tend to focus on maximizing limited resources as opposed to chasing the largest expected return. 3. Expert entrepreneurs tend to make a priority of forming networks of partnerships.

Table 2: Differentiating Novice and Expert Entrepreneurs

Dew et al. (2009) proved that expert entrepreneurs differ from novices on other grounds apart from technical know-how. Personality traits such as information mining and perception of problems, as well as suppressing their initial instincts, differentiate experts from novices. On an entrepreneurial level, experts tend to manage and utilize resources better than novices. Experts also tend to be more particular about networks and partnerships than novices.

2.4 Conclusion

In this chapter, I have attempted to present what is currently known about effectuation as well as its relationship with performance and expertise. I have done this by first reviewing relevant literatures as well as empirical evidences I deemed relevant. I have found that even though effectuation is a relatively young field, it seems to spark a great deal of interest among social scientists, resulting in a sizeable number of publications. On the other hand, I only found two papers that related effectuation and performance.

Finally, I tried to review what is currently known about expertise and how the study of expertise has trickled down into the study of entrepreneurship and effectuation from other fields.

3. Research Methodology

This chapter shows the research methods used to explore one of the research questions: *Is there a relationship between entrepreneurial experience and the use of effectual logic?*

It further describes the research design including data collection techniques and data analysis. Two different research methods were used to collect data. The first method consisted of conducting an interview according to the think aloud method. The second method entailed a survey research.

3.1 Research Design

The research design is largely qualitative but I will employ certain elements of quantitative research, in particular results from previous relevant literature, in a bid to address the aforementioned research question. This style of meta-analysis approach is expected to provide a stronger in-depth understanding of given areas of interest than in the case where qualitative methods alone would be used. The essence of qualitative research crosses many fields, disciplines, and areas of interests and helps to understand and interpret complex and erratic processes such as human behavioural patterns (Roller & Lavrakas 2015).

Specifically, interviews are most appropriate in cases such as effectuation, where very little is known about the given area of interest or where there is a need to isolate the sample to get insights from the individual participants. Qualitative research is advantageous in addressing the aforementioned research question because there isn't much information available on the relationship between effectuation and performance. The fact that this area of interest is under-researched makes first-hand information pivotal to this research.

Qualitative methods, on the other hand, places emphasis on objective measurements and the statistical, numerical, or mathematical analysis of data collected through polls, questionnaires, and surveys. This method gives the research more information in the given area of interest. Kruger (2003) confirms that using quantitative data allows us to summarize vast sources of information and facilitate comparisons across categories and over time. Apart from the fact that quantitative methods allow for more accurate and objective results, it also eliminates the potential bias that arise from meeting subjects personally. The use of quantitative methods in this research will help reduce some of the demerits of qualitative research methods.

By mixing both quantitative and qualitative research methods, it is possible to have a wider and deeper level of understanding in the area of interest while offsetting the fall backs of using only one of the methods. Mixed research methods are useful in addressing whether effectuation allows entrepreneurs to perform better than their counterparts that do not follow the effectuation logic. While qualitative data offers insight about each entrepreneur individually, quantitative data allows the comparison of results obtained with all available data.

3.1.1 Development of Scenario

A similar scenario to that used by Sarasvathy in her original ground-breaking research (1998) will be employed in the interview process. These questions will be centred on effectual constructs such as predictive control vs non predictive control, expected return vs. affordable loss, partnerships vs competitive analysis, and means vs control/goal. A coding scheme will be designed to properly interpret findings. This scenario will help identify and separate those entrepreneurs that follow the effectual logic from those who do not.

Another set of questions are designed to allow entrepreneurs to rank a number of effectual and causal textbook book principles in order of importance. This would act as a support for the first line of questions in asserting the logic used by these entrepreneurs and will also help perceive how these entrepreneurs relate certain logics to performance.

3.1.2 Sarasvathy's 'Think Aloud' Method

This method requires the respondents to literally think out loud to reveal their thought process while making up an answer to the question asked. The interviewer records this thought process due to the fact the logic to coming up with the answer is in fact more important than the answer itself. "Under this instructions, the subject will verbalize their thought as these enter consciousness, that is, when they are first needed," note Ericsson and Simon (1985, p.3). The popularity of the think aloud method continues to grow as researchers and social scientist continue to view it as a very useful method for collecting data. It has also been known to increase observable behavioural patterns in subjects compared to other known methods of gathering information (Ericsson et al. 1993; Sarasvathy 2008a). The think aloud method also allows for a much more comprehensive analysis, even when only a small number of respondents are available (Nielsen 1994). There is an observable time frame

between when a question is asked and when the answer is verbally communicated. This time frame is the thought process which can be influenced by a series of factors, which can result in an inaccurate verbal reply. The think aloud method mitigates this by turning the thought process verbal. Respondents are required to respond by giving their immediate response to questions. This limits the number of distracting factors by removing the process of over thinking (Dew et al. 2009).

The think aloud method also differs from other methods of verbally obtaining data in that the interviewer may not interrupt or question the respondent while they are in the process of thinking aloud. This is important because it goes a long way in assuring that the results obtained are in fact accurate, without any form of external influences in order to show the real thought process of the respondent (Barnard, Sandberg, and Van Someren 1994). In the case presented to the subjects in this study (See Appendix), they are required to respond to certain situations about their business (De Jong 2014). They are confronted with questions about 10 issues listed in the table below and are asked to think aloud while reacting to the issues.

Case Problem	Issue
Issue 1	Market identification
Issue 2	Market definition
Issue 3	Payroll assessment
Issue 4	Financing
Issue 5	Leadership
Issue 6	Product (re-)development
Issue 7	Growing the firm
Issue 8	Recruiting a professional management team
Issue 9	Goodwill
Issue 10	Exiting the market

Table 3: Case problems in the think aloud case

The same case study as in De Jong (2014) is used in this research to maintain a level of professionalism and accuracy.

3.2 Survey Research

In addition to the think aloud method, questionnaires were handed out to the respondents in order to augment the results obtained from the think aloud method. The answers are presented on a 5 point Likert scale, ranging from ‘Totally agree’ to ‘totally disagree’. This questionnaire was created by Chandler et al. (2011) and was essentially created to prove

consistency between results from the think aloud method and the actual decision making process of the subject. The questionnaires are also attached in the Appendix.

3.2.1 The Sample description: Observing Behavioural Patterns

This research sampled a total of 7 entrepreneurs from a number of industries, as well as with varying experience levels. Nielsen (1994) suggests that in order for the research to yield a significant level of correlation, even less than 10 subjects should be good enough. The entrepreneurs sampled in this research were spread across Central and West Flemish areas of Belgium. Like previously stated, there is a balanced spread of the sample between novice and expert entrepreneurs. Expert entrepreneurs here are defined as “someone who has attained a high level of performance in the domain as a result of years of experience” (Foley and Hart 1992) as well as “deliberate practice” (Ericsson et al. 1993). The novice entrepreneurs on the other hand (for the purpose of this research) have been limited to entrepreneurs with experience ranging from one to six years. This range is based on the suggestion made by Simon and Chase (1973), which says that a higher percentage of experts have more than ten years of experience in deliberate practice.

The sample is largely divergent, with entrepreneurs from varying educational, family, and religious backgrounds, as well as in varying industries. This sample was created to primarily help reveal if these entrepreneurs actually show a preference to the effectual logic.

3.3 Data Collection and Analysis

The point of the interviews is to add substance to secondary data that I will analyse in the next chapter. Secondary data will be collected in the form of previous literature to enrich the trustworthiness of the conclusion (Orcher 2005; Creswell 2007). These data were obtained from published materials, newspaper articles, relevant blogs, and research outcomes. The audio results from the think aloud method were transcribed in a formal transcript, which was coded and then analysed. A lot of care was put in the transcription so the transcriber can effectively remain unbiased in the process.

3.4 Coding Scheme

Coding is defined as a process of sorting and organizing huge amounts of information (Gibbs and Graham 2007). Codes stand as a means of identifying and labelling data. Codes also allow to clearly communicate what is going on in the data. It is then common knowledge that

“coding is analysis” (Huberman and Michael 1994). For the sake of this dissertation, the coding legend of Sarasvathy (2008a) will be used as shown below:

Causation Legend	Effectuation Legend
Goal-driven	Means-based
Expected return	Affordable loss
Competitive analysis	Use of alliances
Existing market knowledge	Exploitation of contingencies
Predictions of the future	Control by prediction
Causal	Effectual

Table 4: Coding Scheme (Sarasvathy, 2007, p.30)

4. Research Analysis and Findings

This chapter is probably the most essential part of a dissertation. This chapter will address general issues regarding the data and provide valuable description of the findings. The primary purpose of data collection (especially in qualitative research) is to interpret such information (Flick 2009; Morse and Richard 2007) in order to arrive at a conclusion.

4.1 Empirical Data

As previously stated, this thesis draws results based on previous publications. De Jong (2014), in one of the most recent research pieces done in the field, tried to evaluate the relationship between performance and effectuation using a limited sample of Dutch entrepreneurs. In his work, he tested the use of effectuation logic among these expert entrepreneurs by measuring their business plans. He went on to conclude that there is in fact a positive relationship between effectuation and performance. Read, Song and Smit (2009) have also tried to relate effectuation and all of its principles to the performance of start-ups empirically. The results of their comprehensive meta-analysis process yielded a positive result, showing indeed that effectual logic is positively related to performance. Jarman (2016) went further with this line of thinking to show the effects of effectuation on corporate innovation and the results showed most of the intrapreneurs sampled employ some of the effectual principles.

4.2 Survey Results

To start with, a simple survey was conducted and the sample was limited to selected entrepreneurs from varying fields and with varying levels of expertise (novice to expert). The point was to see if in fact there is a difference in the decision-making process between these entrepreneurs. In summary, the research shows that in fact, expert entrepreneurs are often biased toward effectual logic rather than the traditional causal method. On the other hand, the reverse was the case with new entrepreneurs. I have revised the results from the questionnaires and summarised them in the tables on the next page:

X	Res. 1	Res. 2	Res. 3	Res. 4	Res. 5	Res. 6	Res. 7
Control vs Prediction	PRE	PRE	CON	PRE	CON	PRE	PRE
Means vs Goal	ME	GO	ME	GO	GO	GO	ME
Affordable loss vs Expected Return	ER	AL	AL	ER	AL	AL	ER
Partnerships vs Competitio n	PA	PA	PA	PA	CO	PA	PA
Result	3	1	2	2	0	3	3

Table 5: Survey Results

LEGEND:

CO - Control

PRE - Prediction

ME - Means

GO - Goal

AL – Affordable Loss

ER – Expected Return

PA - Parthnerships

COM - Competition

The result is calculated on a scale of 1 – 4, showing how much preference is shown to the effectual logic.

4.2.1 Defining the sample

0-15 years of experience (Novice Entrepreneurs)			
X	Years of experience	Area of business	Age
Resp. 1	7	Retail	32
Resp. 2	7	E-commerce	37
Resp. 3	9	Retail	35
Resp. 4	10	Print and multimedia	43

15 < years of experience (Expert Entrepreneurs)			
X	Years of experience	Area of business	Age
Resp. 5	16	Fashion	39
Resp. 6	18	Carpentry	44
Resp. 7	22	Events Management	49

Table 6: Survey Sample Definition

The survey measured showed that the three expert entrepreneurs (Respondents 5, 6 and 7) scored 2, 3, and 3, respectively, and the four novice entrepreneurs (Respondents 1, 2, 3, and 4) scored 0, 1, 2, and 3. This link shows an agreement with Sarasvathy's (2001a) conclusion that showed that expert entrepreneurs in fact show more bias to the effectual logic than novice entrepreneurs. Another point of note is that as these entrepreneurs tend to gain more experience, they seem to pick up more effectual traits along the line. These traits may be responsible for their performance in the long run, because from all the entrepreneurs surveyed, each of the expert entrepreneurs currently outperform each of the novice entrepreneurs.

Affordable Loss vs Expected Returns

While causal logic emphasizes returns on investment when selecting between possible ventures, effectuation looks at what the individual is willing to give up. While the entrepreneur following the causal logic would be more concerned with how much money and resources are needed to put in the business or venture and if all of those efforts would yield enough returns to match this amount of investment, an entrepreneur following the effectual logic would be much more concerned with how much they are willing to lose and if the risk level falls within their loss parameters (Dew and Sarasvathy, 2009). In reality, traditional

business models often try to analyse markets in an attempt to calculate the plus sides through market sizing exercise (for instance, consider the TAM SAM SOM template). But according to Clayton Christensen, markets that are unknown can simply not be analysed. All of the respondents were tested based on how they first approach new ventures. Do they leverage just what they are willing to lose (effectual), or analyse markets for optimality? The following statements were put forward in the third part of the questionnaire to test this:

Q8. Our decision has been largely driven by expected returns.

Surprisingly, many of the respondents tried to find a half way line here. For instance, the fashion entrepreneur, who also has a degree in botany, said she started her business because *“My mother is a fashion designer. She taught me everything I know and I fell in love with fashion because of her.”* She further explained that when she started out, she was not driven by earnings or return on investment, but rather her love for the business. While the business grew, most of her decisions were bordered around the fact that *“I can’t afford to throw money away,”* partly due to the fact that she always has *“becoming a botanist as a plan B.”*

What I observed was that the entrepreneurs with fewer years of experience made financial decisions simply based on their returns on investment. The respondent with the most experience made this a little more interesting. He started out by renting out event management equipment such as light, stage materials, executive furniture, and more before focusing on managing events primarily. Even before I mentioned the concept of affordable loss to him, his response was *“Yes, we try to make decisions that would yield the best returns but it is a little more than that. Technology is changing the market and we need to be sure such decisions are actually necessary and affordable.”*

Q14. We are careful not to commit more resources than we could afford to lose

There was a consensus in responses among the respondents. Most of them in simple short answers—“yes,” “of course,” or even nods—answered that they wouldn’t commit more than they were willing to lose. Only one of the respondents, the owner of an online retail store, explained that sometimes *“short run losses can lead to long term gains”*. Given the right circumstance, he would be willing to take on such commitment.

Q15. We were careful not to commit more resources than we were willing to lose in our initial business idea

A couple of the respondents did not quite understand the difference between this statement and the previous one. After throwing a bit more light on it, I realised that short run losses were not the biggest concerns of the respondents at start up. The founder of the retail store said here that, *“Like I said before, short term goals can lead to long term rewards”*. The carpenter added here that, *“At the beginning, you need to invest a lot more. If you think about [losses] at this stage, you will very disappointed.”* All of the entrepreneurs agreed on the fact that at start up, they were all willing to commit more than they were willing to lose. This agrees with Sarasvathy and Read (2005) that at the initial stage, entrepreneurs often take this route because of their heavily causal way of thinking. This often balances out as they gain more experience.

Means vs Goals

The effectual logic proposes that entrepreneurs start with what they have. Also known as the bird-in-hand principle, it suggests that entrepreneurs should look at who they are, their abilities and skills, what they know (their knowledge), and who they know (their network) rather than the traditional (causal) goal setting. For instance, a chef employing the effectual logic would first consider all the ingredients available to him, and only then decide on which meal is best given the resources available. Using this same illustration, a chef employing the traditional causal way of reasoning would first consider what meal he wants to make before anything else. The following questions were presented before the respondents to test their thought process on this.

Q1. We analysed long run opportunities and selected what we thought would provide the best returns

“But isn’t that what all businesses do?” This was the first reaction of the founder of an e-commerce venture. Largely enough, there was another consensus here with all of the respondents answering positively to the statement.

Q2. We develop a strategy to best take advantage of resources and capabilities

While most of the other questions separated the respondents based on size and experience, this question separated them by industry. Respondents that represented sectors such as fashion, e-commerce, and carpentry—which are mostly creative sectors—consciously chose a strategy that properly harnesses their abilities. The other sectors either do not have a developed strategy or follow an unwritten strategy unconsciously. The founder of the print

and multimedia company, for instance, added that, *“I guess our HR (Human Resource) manage this somehow, but we do not have a proper strategy. We obviously need one, don’t we?”*

Q9. It was impossible to see from the beginning where we wanted to go

This also helped support Sarasvathy and Read’s position that “Types of reasoning approach with respect to experience and firm life cycle” (2005, p. 37). The more experienced companies all seemed to understand that markets evolve, and so would their goals. The e-commerce founder added that *“We started at a time online flight ticketing was very young. We knew what we wanted, but we also knew things were changing quickly so we always prepared ourselves for that, too.”* This was not the same story with the less experienced entrepreneurs. The retail entrepreneur explained that she spent the earlier years of the business learning and gaining knowledge and she is technically just starting up. She said that *“we are still at the beginning but we know where we want to be in the coming years.”*

Partnerships vs Competition

Ecosystems have become an integral part of businesses today. Often times, the relationships between business and their ecosystems are significant enough to either make or mar the firm. Effectuation encourage entrepreneurs to make the most out their networks. By networking, they strengthen and even possibly increase the amount of resources available to them. Partnerships can drive a venture model design and also show opportunities that were otherwise not apparent. This concept, otherwise known as the crazy-quilt principle, suggests that by making alliances with parties they can trust, firms can reduce the affordable loss by banking on prior commitments made by these parties. The respondents were tested to examine their bias (and by how much) to partnerships.

Q22. We used a substantial number of agreements with customers, suppliers, and other organizations and people to reduce the amount of uncertainty

I could sense from their responses that the younger companies (fashion and both retail companies) were more aware and worried about competition than the older companies. The founder of one of the retail companies, which is a physical clothing store, explains that pricing is a very important strategy in the business. He says that *“Our suppliers are very important to us. Without them we have no customers..... Because our market is a very competitive one, we need to be sure that we are getting the best deals from our suppliers.”*

This showed that while in fact they had very important partnerships, they did not necessarily use them to reduce contingencies but to stay ahead of the competition. This was quite the opposite at the more experienced firms. They had no reservations making alliances (even with possible competition). According to their founder, *“There’s another woodwork company not too far from here who have a 5 axis CNC milling and Hinge boring machine. We have an agreement to use it at a fee till we can afford ours.”*

This was very enlightening because many literatures on effectuation assume that effectual entrepreneurs make key alliances and leave the unwritten conclusion that causal or novice entrepreneurs mostly do not. In reality, it is impossible for companies to survive in today’s world without the right partnerships. What draws the line is the motive and direction behind them. While novice entrepreneurs mostly make these alliances to stay ahead of competition, more experienced entrepreneurs partner-up to increase their wealth of resources and inputs.

Q23. We use pre-commitments from customers and suppliers are often as possible

Like I previously noted, all of the respondent emphasized the role of partnerships in their business. While the older companies had written contracts that govern their dealings, the younger companies operated on some sort of goodwill. One of the more experienced respondents added that *“All of our pre-commitments as you call them are written contracts. They become more important as the business grows.”*

Q24. We tried to get resource commitment and sales commitments as early as possible

Once again, the respondents were split based on their level of experience here. Although, all of the respondents agreed to take resource commitments (both formal and informal) early on, they split on sales commitment. The lesser experienced entrepreneurs did not consider taking sales commitment as important. Like the founder of the online retail store simply put, *“You can control your resources, not your sales.”* This was not the idea with the more experienced entrepreneurs however. The carpentry company, for instance, had some long term sales contracts including a number of private schools and some construction companies.

Control vs Prediction

The principle of control in effectual reasoning states that the entrepreneur must be dynamic or flexible in their dealings. Simply put, they must expect to make the most out of contingencies as they arise and not just stick with existing knowledge. Also known as the lemonade principle, it follows the proverb “If life hands you lemons, make lemonade.” Most times, plans and strategies do not go as desired—hence the need for timely reassessment and possible redesign of such strategies. It is important to know that this principle does not preach setting up plans for failure; it instead prepares entrepreneurs and ventures in the event of such failure.

Q16. We have allowed the business to evolve as opportunities emerged

I had to explain what this question meant to some of the respondents and I realised a split once again between the more experienced and less experienced entrepreneurs. I realised that all of the firms with experience levels between 0 and 10 years still carried the initial plan they had regardless of the many opportunities to diversify. This was not the same for the older companies. This was one of my favourite questions to ask because it allowed the respondents share life stories and lessons with me, which I found invaluable as an entrepreneurial enthusiast.

One of my favourite stories was the evolution of the events management company. This company started out as an event equipment rental company that evolved to an events management company. According to the 46-year-old, *“Thinking about it now, looks like we spent the entire time evolving. Concerts were very huge when I was younger. There was one happening every other weekend. I invested some money in stage light and other things, and rented them out at a cost. Concerts started getting less popular and the ones around owned their own set up materials. With the little experience gained, we starting helping out with the putting together concerts, and on two occasions, we funded our own music festivals. We started getting wedding and corporate events which is the reason we are where we are today.”*

After a number of hours with the entrepreneurs, I find their answers to be naturally consistent with figure 2. Entrepreneurs who were closer to the start-up stage of their business tend to be more causal, while entrepreneurs who were well out of the start-up stage showed a preference for effectuation. This conclusion is discussed in the following chapter.

5. Conclusion, Discussion, Limitations and Implication for Further Research

In this chapter, I tried to bring together previous chapters to give a wholesome conclusions well as some of the bottlenecks I encountered while writing this thesis.

5.1 Conclusion and Discussion

In this thesis, I tried to examine the relationship between effectuation, expertise and performance by understudying relevant literature, conducting interviews and administering questionnaires.

It is important to note that effectuation in itself is a relatively new concept and was first used by Sarasvathy (2001) to define particular entrepreneurial processes. Many of the earliest publications were centred on understanding and testing the theory in itself, reducing the empirical research around it (Boujelbene and Ghorbel 2013). The aim of this thesis is to understand the relationship between effectuation, expertise, and performance.

Effectuation has always been portrayed in literature as being the main thought process of expert entrepreneurs (or experienced entrepreneurs). First, I tried to review literatures that tested the link between such experienced entrepreneurs and the use of effectuation. This literature review revealed a positive association between these two concepts. This leaves the idea that if experienced entrepreneurs were successful because of their use of effectual logic, novice entrepreneurs did not make use of effectual logic. This idea attributes the success of experienced entrepreneurs to their use of effectuation.

This is, however, not entirely true. Even though novice entrepreneurs tend to be more causal in the beginning of their venture, they slowly transition into the theory of effectuation as they grow. Read and Sarasvathy (2005) graphically illustrated this in the life cycle of a firm or new venture, the use of effectuation or causal logic change depending on the time and growth stage of the firm.

Results from the interviews conducted suggest that expert entrepreneurs seek out partnerships in a bid to promote their new ventures. However, results from other studies do not entirely support this conclusion. Instead, they show that stakeholders often seek out experienced entrepreneurs due to their track record of success. This is why networks, partnerships and ecosystems form important characteristics of experienced entrepreneurs. This singular fact can explain why novice entrepreneur are not often known for strategic partnerships. The

reason is because these novice entrepreneurs do not have the track record of successes like their experienced counterparts and tend to attract more of such partnerships as they gain more experience. As entrepreneurs gain more experience and build up a history of success, other external parties start to see them as problem solvers. These potential partners then begin to present them with problems, which they turn into new ventures.

Nelson (2012) points that if we conclude that effectuation is practised by very successful individuals, there might be an association between the use of effectuation and financial performance. Nelson (2012) tested this concept in an experiment and arrived at two important statistical links.

First, entrepreneurs who view business opportunities from the lens of what they can afford to lose (the principle of affordable loss) appraise themselves as much more successful than entrepreneurs who do not. Nelson (2012) explained this conclusion by first showing that in actual fact (from his sample), these entrepreneurs were actually more successful than entrepreneurs who view business opportunities through what they seek to gain from such opportunities. Nelson (2012) also explained that entrepreneurs that assess losses from the beginning of a possible venture often meet such businesses with “speed and confidence” (Nelson 2012, p.72), knowing that they can survive such ventures. This method of loss assessment largely helps reduce risk allows the entrepreneur function within their “set loss parameters” (Nelson, 2012).

Secondly, entrepreneurs who remain dynamic and constantly eliminate potential bottle necks that can limit future possibilities of the firm are more successful than those who do not. This is simply because by reducing a businesses’ ability to take action can limit the success of such ventures or even lead to the death of the venture.

Moving away from Nelson’s logic, the first obvious point of note is that the entrepreneurs surveyed exhibited a significant bias towards the use of effectual logic. The results showed more means-based rather than goal-driven processes. Among the interviewed entrepreneurs, some tended to prefer alliances against competition. This is in line with previous literature that shows that in fact, effectual logic and principles improve performance. This has previously been discussed but there are few empirical researchers providing evidence that this is true. Publications have all shown a positive relationship between effectuation and performance. This, however, is not to disprove the traditional causal logic. Sarasvathy (2003)

pointed that the use of causal principles is just as important because certain business scenarios, and circumstances in fact call for the use of such principles.

More empirical evidence (Sarasvathy 2001) show that the use of effectuation by entrepreneurs is largely determined by experience and knowledge gathered over time, which in the long run leads to improved performance. The use of effectuation by entrepreneurs and managers may differ slightly from its use when dealing with new ventures. One of the major observable differences includes the fact that while entrepreneurs and managers are limited by stakeholder networks and options of funding—which drifts slightly from the fact that new venture often have the freedom and ability to seek after these resources from any possible network (Sarasvathy 2001).

Many mainstream business school textbooks are still heavily based on the theory and practice of causal logic mainly because not much research exists about effectual logic as an alternative to causal logic (Andersson, 2011). My research is an important contribution to the field because it shows that the effectual logic can have a significant effect on entrepreneurial performance. It is expected that by including Sarasvathy's theory of effectuation in modern day MBA curriculums, graduates from these programs are better able to view decisions and decision making processes from the lens of field experts, helping them avoid the mistakes novices make, and in the long run, helping them have a relatively more successful career.

Finally, despite the many differences between effectual and causal logic, expert entrepreneurs have been observed to sometimes take an expected return over an affordable loss. This occasional preference for causal logic show that the use of a specific logic depends on the circumstances surrounding the venture. Findings show that the use of effectual logic by expert entrepreneurs is not cast in stone, and they sometimes still show a preference for causal logic. For instance, in the think aloud case, given very limited resources and the need to enter the market immediately, expert entrepreneurs show more concern about viability as opposed to what they can afford to lose at the given point in time. Future research could look into the “whens” and “whys” expert entrepreneurs tend to deviate from the use of effectual logic.

In summary, tests and experiments conducted by previous literatures all show that some entrepreneurs use the effectuation method. What is noteworthy is whether this preference for

effectuation has any links with successes of ventures. This thesis primarily tried to understand this by providing evidence which showed results similar to Sarasvathy's (2005) conclusion of firm life cycle illustrated in figure 2. At start up, novice entrepreneurs are faced with the challenge of directing resources towards a specific goal. As these entrepreneurs gain more experience, they begin to converge to an effectual position as the firm grows. Sarasvathy's (2005) study shows a strong relationship between experience and the convergence to an effectual position. Previous literature tried to prove that effectuation leads to success because successful entrepreneurs effectuate. Historical evidences linked with this logic shows that in fact, effectuation is directly related with both performance and expertise.

5.2 *Implication for further research*

As previously noted, there isn't enough empirical evidence measuring the use of effectual logic and venture performance. Though available literature seems to show a positive relationship between them, it is at most inconclusive and would require more evidence to draw some conclusion.

My research also makes visible the need for more concise methods in measuring venture performance. The variation in methods makes comparing results from previous research very difficult. I believe that if more research is done on effectuation in other fields, for instance psychology, more conclusions can be drawn about effectuation and human behaviour. Currently, much of what is known about effectuation stems from its use by entrepreneurs. However, possible results from mid-level managers and non-profit organisations can reveal results that can help strengthen or correct what is currently known about effectuation.

Finally, measuring the effects of effectual logic in other non-commercial scenarios such as psychology, health, and other fields could help discover more applications for the theory of effectuation.

5.3 *Limitations to the study*

Like most research, this study has its limitations. I will attempt to outline few of them in this section.

First, there is the need for more evidence to make more accurate conclusions. As with most qualitative studies in social sciences, conclusions are often not accurate enough to show valid conclusions that are also useful for theoretical formulations (Jarman 2011). Also, qualitative research often requires relatively higher number of interview respondents to gain external validity. However, this required sample size is often either unrealistic or expensive to achieve. This in turn affects the quality of the conclusion.

Secondly, the entrepreneurs sampled here were chosen from Nigeria and Belgium. This was done in order to increase the variations in markets and backgrounds of the sample. However, these countries only form a small percentage of the global market and hence are not representing entrepreneurs from different cultures around the globe.

Thirdly, part of this research was based on quantitative research. The theory of effectuation, however, is a relatively new area of study. As a result, not much empirical evidence is currently available in the field, and so, a lot of assumptions have to be made.

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Appendix

PART 1 – Biographic information

Name: _____

Email: _____

_____ Country

Years of education experience: _____ (years)

Highest Education obtained: _____

Years of working experience: _____ (years)

Date of birth: _____

Sex: _____ male/female

Place of birth: _____ (city, country)

Religion: _____

Marital status: single/living together/married

Children: yes/no

International experience _____ years

Family background: lower/middle/upper Class

PART 2 – About the entrepreneur's company

Name and website of company: _____

Short description of the business:

Date of establishment: _____

Place of establishment: _____

Number of founders (including entrepreneur): _____

Current number of employees (including all founders, in full time equivalents): _____

Annual turnover in country currency: _____ (amount) _____ currency

PART 3 – Examining decision making bias.

Over time, many social experiments have been designed to test how entrepreneurs think, discover opportunities, and over all make decisions. This questionnaire has been adopted from some of the most successful experiments.

You will be required to kindly give your first opinion on the following statements:

To what degree did you start your enterprise because you had no other option for work?

Not at all

A little

Somewhat

To a large extent

Absolutely

To what degree did you start your enterprise because you wanted to become independent or increase your income?

Not at all

A little

Somewhat

To a large extent

Absolutely

(Measures for necessity vs. opportunity taken from GEM)

Please answer this questionnaire on the basis of reflecting on your own company.

Please have a look at the following statements. Now, choose a number between 1 and 5, in which you indicate the degree to which you do not agree or agree to the statement.

Do not agree	1
Agree little Agree	2
Somewhat	3
Mostly agree	4
Fully agree	5

1. We analysed long run opportunities and selected what we thought would provide the best returns
2. We developed a strategy to best take advantage of resources and capabilities
3. We researched and selected target markets and did meaningful competitive analysis
4. We designed and planned business strategies
5. We organized and implemented control processes to make sure we met objectives
6. We had a clear and consistent vision for what we wanted to do
7. We designed and planned production and marketing efforts
8. Our decision making has been largely driven by expected returns
9. It was impossible to see from the beginning where we wanted to end
10. We experimented with different products and / or business models
11. The product/service we now provide is essentially the same as originally conceptualized
12. The ultimate product/service we now provide is substantially different from than we first imagined
13. We tried a number of different approaches until we found a business model that worked
14. We were careful not to commit more resources than we could afford to lose
15. We were careful not to commit more money than we were willing to lose with our initial business idea
16. We have allowed the business to evolve as opportunities have emerged
17. We adapted what we were doing to the resources we had
18. We were flexible and took advantage of opportunities as they arose.
19. We avoided courses of action that restricted our flexibility and adaptability.
20. We evaluated the set of resources and means we had at our disposal and thought about different options
21. We started out very flexibly and tried to take advantage of unexpected opportunities as they arose
22. We used a substantial number of agreements with customers, suppliers and other organizations and people to reduce the amount of uncertainty
23. We used pre-commitments from customers and suppliers as often as possible
24. We tried to get resource commitments and sales commitments as early as possible

Auteursrechtelijke overeenkomst

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Understanding the Link between the Use of Effectual Logic and Entrepreneurial Expertise and Performance

Richting: **Master of Management-Business Process Management**
Jaar: **2018**

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Datum: **13/01/2018**