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**The Combination of Effectuation and Psychological Ownership in shaping
Entrepreneurial Behaviour: An Exploratory Study of Starting Entrepreneurs
at a Start-up Incubator**

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Preface

With pride, I hereby present my master thesis entitled: *“The Combination of Effectuation and Psychological Ownership in shaping Entrepreneurial Behaviour: An Exploratory Study of Starting Entrepreneurs at a Start-up Incubator.”* This thesis contains subjects that are close to my heart; innovation, entrepreneurship and psychology, and is the final part of my Master Specialisation Innovation and Entrepreneurship at the Radboud University Nijmegen. This Master, with this research as icing on the cake, fulfilled the ambition I had after my previous degree in Business Innovation, to have a more scientific understanding of innovation in addition to a practical one. This thesis provided me with an interesting opportunity to expand my knowledge by investigating both the cognition and the behaviour of starting entrepreneurs.

I want to express my gratitude to everyone who has aided me in completing my Master thesis. In the first place, my appreciation goes to my supervisors Hanif Widyanto and Nanne Migchels, who encouraged me to always have confidence in my work, even when I did not feel that way myself. I would like to thank my second reader, Robert Kok, for his extensive feedback on my thesis for it ultimately enhanced my understanding of the academic field. A big word of thanks goes out to all eleven entrepreneurs connected to StartUp Nijmegen whom I was allowed to interview for my research. Their openness has given me many wonderful insights for my research and their view on entrepreneurship has inspired me. Like no other, they made me realise how important it is in entrepreneurship - but also in life itself - to trust your feelings, to dare to take a leap of faith to see what opportunities arise and never to give up when you stand for something, even if the outside world tells you otherwise. Finally, I would like to thank all those who have supported me, my friends, and my family. In particular, my boyfriend Andy, who has always been at my side and has done everything to help me through this process although it was characterised by many ups and downs.

To you, the reader, I wish you much enjoyment whilst reading my research on how the combination of an effectual logic for starting entrepreneurs in combination with them having feelings of psychological ownership shapes their entrepreneurial behaviour.

Best,

Lisa Kessels, September 30 2022

Abstract

This study explores how the combination of an effectual logic and the presence of psychological ownership in the mind of the starting entrepreneur shapes their entrepreneurial behaviour. When comparing the effectuation and psychological ownership literature, both indications for corresponding as well as contrasting underlying theoretical perspectives are found. Despite these indications, how this combination shapes entrepreneurial behaviour has not been studied. This study dives into this knowledge gap by investigating eleven starting entrepreneurs connected to the start-up incubator StartUp Nijmegen through pre-questionnaires and interviews. The findings demonstrate both functional and dysfunctional behaviour for the starting entrepreneurs who have both an effectual logic as well as feelings of psychological ownership. The functional behaviour takes shape by them ensuring an open vision and experimenting confidently. The dysfunctional behaviour takes shape by them pursuing exclusive control, acting territorial and striving for perfection. The finding of dysfunctional behaviour confirms initial concerns expressed in this study; the combination of the two-states-of mind shapes behaviour which hinders the implementation of an effectual logic, even though implementing this logic successfully is of great importance for the growth of a start-up. Nevertheless, there is value in having the two-states-of-mind as they can work synergistically when starting entrepreneurs are keen on keeping the negative aspects in check. An important role in this regard is devoted to the start-up incubator in order to provide them with the required guidance.

Keywords: entrepreneurship, starting entrepreneur, start-up incubator, effectuation, psychological ownership, entrepreneurial behaviour

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1. Introduction

1.1 Introduction

For decades, it has been acknowledged that understanding entrepreneurial behaviour is of great importance as it is the key contributor to employment, innovation, sustained economic growth and development in society (Acs & Audretsch, 2005; Allinson et al., 2000; Aparicio et al., 2016; Bird & Schjoedt, 2017; Meyer & Meyer, 2017; Stel et al., 2005). The ‘entrepreneur’ is defined as an imaginative actor who is able to recognize and develop risky opportunities with potential for innovation, and who adds value to what already exists by means of scarce use of resources (Filion, 2021, p. 80). What drives entrepreneurial behaviour is their cognition (Krueger, 2007); the way of thinking about and processing vital information upon which their decisions are based (Allinson et al., 2000, p. 32). This study considered this cognition of starting entrepreneurs from the perspective of two phenomena; one extensively described in the field of business administration and the other one elaborated upon in the psychology literature: Effectuation and Psychological Ownership.

Literature in the field of business administration emphasised the difference in cognition between entrepreneurs and managers of established organisations (Allinson et al., 2000). The dominant thinking and decision-making style of managers in established organisations is defined as “Causation” (Sarasvathy, 2001a), where they believe in their ability to control the future by predicting it, are convinced of the importance of competitive analyses, value pre-existing knowledge and focus on high expected returns (Berends et al., 2014; Wiltbank et al., 2009). In contrast, entrepreneurs seem to have another specific thinking style, especially in the first stages of the pre-firm (Dew et al., 2009; Sarasvathy, 1997), which supports them in their transformational and uncertain journey from opportunity discovery to building a business and managing growth (McVea, 2009). This thinking style is called “Effectuation” (Sarasvathy, 2001b). Numerous studies have described entrepreneurial behaviour that follows from having an effectual logic; acting upon the future and thereby controlling it, actively engaging in partnerships, easily change of direction as new information becomes available and only investing what they can afford to lose (Arvidsson et al., 2020; Chandler et al., 2011; DeTienne & Chandler, 2010; Perry et al., 2012; Read et al., 2009; Sarasvathy & Dew, 2005; Wu et al., 2020).

Scholars in the field of psychology devoted their time investigating the cognition of entrepreneurs, especially paying attention to understanding the way they think of themselves in relation to their business. What emerged from these studies is a phenomenon called “Psychological Ownership” (Van Dyne & Pierce, 2004); a state of mind where an individual becomes psychologically tied to an object and this becomes part of the extended self and the owner’s identity (Pierce et al., 2001; Pierce et al., 2003). For entrepreneurs, this implies that they not only identify with their job as being a leader of the business, but also identify with their business on a personal level (Pierce et al., 2001). They then often perceive their business as ‘their baby’ (Cardon et al., 2012; Cardon et al., 2005). Especially for starting entrepreneurs, as they invest time, ideas, unique knowledge and their personal style in the creation of their start-up, the probability for them to develop feelings of psychological ownership is higher (Pierce et al., 2003). After all, the most obvious and powerful means by which individuals invest themselves into objects is by creating them. A considerable amount of scholars have described the effect of psychological ownership on entrepreneurial behaviour. Positive behaviours regard investing additional time and energy in the organisation (Van Dyne & Pierce, 2004), active participation (Dirks et al., 1996) and commitment (Vandewalle et al., 1995). Negative behaviours were also described, such as difficulty in letting go of control (Pierce et al., 2003), resistance to change (Baer & Brown, 2012) and even territorial behaviour (Brown et al., 2005).

1.2 Problem description

The concepts of effectuation and psychological ownership are widely adopted phenomena and their individual effect on entrepreneurial behaviour has been studied quite extensively. The fact that both concepts have been described in relation to cognition would not make it unthinkable that both concepts could be simultaneously present in the mind of the starting entrepreneur. However, to date scholars' attention has not yet been devoted to studying how the combination of these two concepts affects entrepreneurial behaviour. Whereas one might think that both concepts can simply coexist in the mind of the entrepreneur, a thorough search of literature on the definition and implications of both concepts revealed otherwise. There are indications for effectuation and psychological ownership to create synergy, as underlying theoretical perspectives seem to correspond. For instance, in order to increase firm performance through effectuation, entrepreneurs are required to possess feelings of passion (Laskovaia et al., 2022; Stroe et al., 2018), persistence (Cardon et al., 2013) and conviction in their own competence (Coudounaris & Arvidsson, 2021). Corresponding, entrepreneurs with feelings of psychological ownership are stated to have passion towards the business, persistence to invest time and energy in the business (Van Dyne & Pierce, 2004; Vandewalle et al., 1995) and high self-esteem (Avey et al., 2009; Zhang et al., 2021). In contrast, there are indications for effectuation and psychological ownership to clash, as underlying theoretical perspectives are contradicting; where effectuation advocates forming partnerships with stakeholders because a learning curve is established through interaction with other parties (Djuricic & Bootz, 2019; Sarasvathy, 2001a; Sarasvathy, 1997), entrepreneurs experiencing psychological ownership can engage in territorial behaviours and try to limit other people's access to their business (Brown et al., 2005). Where the effectual logic requires entrepreneurs to oftentimes sacrifice control to gain access to external resources (Wasserman, 2008), individuals experiencing psychological ownership are less likely to share control (De Vries, 2007; Pierce & Jussila, 2011; Pierce et al., 2001). Where effectual entrepreneurs require to incorporate external feedback for continuous change (Chandler et al., 2011), entrepreneurs experiencing psychological ownership may feel personal loss, frustration and stress when alterations need to be made to their business (Bartunek et al., 1993) and it may even feel like a personal attack (Galvin et al., 2015).

When the combination of effectuation and psychological ownership works synergistically in practice, it can lead to functional entrepreneurial behaviour where the right managerial practices are executed in order to implement the effectual logic correctly. In contrast, when the combination of effectuation and psychological ownership clashes in practice, it can lead to dysfunctional entrepreneurial behaviour where managerial practices are executed which hinders the successful implementation of the effectual logic. As the latter would be problematic for the start-up, delving into this knowledge gap was of importance. After all, the implementation of the effectual logic is said to be especially suited to the strengths and limitations of small firms (Berends et al., 2014) and to contribute to new venture growth (Cai et al., 2017).

1.3 Research question and goal

Based on this identified knowledge gap, this study aimed to explore how the combination of the effectual logic and psychological ownership gives shape to the entrepreneurial behaviour of starting entrepreneurs. Shape in this sense was defined as something to have an important influence on the way that something else develops (Oxford Advanced Learner's Dictionary, n.d.). This led to the following all-encompassing research question:

“How does the combination of an effectual logic and psychological ownership in the mind of the starting entrepreneur shape entrepreneurial behaviour?”

The goal of this study could be described as exploratory since the aim was to gather new insights about a phenomenon (i.e., entrepreneurial behaviour) in a new light (i.e., the combination of the effectual logic and psychological ownership) (Saunders et al., 2009, p. 139). To contribute to this aim, qualitative research was conducted in which starting entrepreneurs, linked at start-up incubator “StartUp Nijmegen” were interviewed. A start-up incubator is an enterprise that facilitates the early-stage development of firms by providing office space, shared services, and business assistance (Hackett & Dilts, 2004, p. 55). The choice for examining starting entrepreneurs linked to a start-up incubator was justifiable due to the fact that these entrepreneurs are stated to possess a highly reflective mindset (Prashantham & Floyd, 2019) and the feedback from their mentors at the start-up incubator results in their self-reflective learning being even more facilitated (Garcia-Lorenzo et al., 2018; Marlow & McAdam, 2015). Through these self-assessment and reflection processes provided by the incubator, these starting entrepreneurs are more aware of their own competency gaps (Miles et al., 2017). This was of added value for this research, because by this process of reflection the starting entrepreneurs at Start-Up Nijmegen were more likely to be aware of identification with their start-up (psychological ownership) and their mindset as an entrepreneur (effectual logic), increasing the possibility for these concepts to be explored in more depth. Choosing StartUp Nijmegen in particular was justifiable since Nijmegen is stated to be an important city in The Netherlands for entrepreneurial activity, which is supported by the fact that in Nijmegen every year 200 entrepreneurs start a business (Ginneken, 2018). StartUp Nijmegen plays an important role in enabling these entrepreneurial activities by being an inspiring environment to establish, grow and prosper for a starting entrepreneur (Into Nijmegen, 2022), thereby improving the economic system of the city (Ginneken, 2018).

1.4 Theoretical relevance

The theoretical relevance of this study lies in the fact that it contributes to the literature on entrepreneurial behaviour. By having investigated the combination of effectuation and psychological ownership in how it shapes entrepreneurial behaviour, this study set out to explain behaviour of entrepreneurs that had not been explained before and it will shed a new light on already known behaviour of entrepreneurs. As a result, this research deepens the existing literature on entrepreneurial behaviour. Bird and Schjoedt (2017) stated doing this is vital since greater specificity of entrepreneurial behaviours is beneficial for research and education and the authors expressed the concern that this had not been researched enough in recent years. More specifically, this study answers the call of Coudounaris and Arvidsson (2019) who underlined that effectuation literature would benefit from combining it with the realm of psychology.

Furthermore, this study contributes to the effectuation literature by answering the call of McKelvie et al. (2011). These authors called for new theoretical insights into the origins of the effectual patterns. This study responds to this call by exploring whether effectual starting entrepreneurs engage in behaviour where they do or do not successfully implement this logic in practice when their cognition also consists of psychological ownership. This deepens the current understanding of the effectual patterns.

Lastly, this study enriches the literature regarding psychological ownership by responding to the call of Zhang et al. (2021). The authors’ recent large meta-analysis revealed that the dysfunctional effects of psychological ownership are still largely overlooked. This exploratory study answers that call by its research question and design allowing for possible dysfunctional effects of psychological ownership to be revealed. Hereby, these dysfunctional effects were directly put into context because the concept was examined in combination with effectuation and how

this shapes the entrepreneurial behaviour of starting entrepreneurs. As a result, this study not only discussed the dysfunctional effects but also made the consequences of these effects in terms of entrepreneurial behaviour visible.

1.5 Practical relevance

First, the practical relevance of this study is that it contributes to the starting entrepreneurs' self-awareness. This study provides starting entrepreneurs with insight into their cognition; whether having an effectual logic and psychological ownership simultaneously in their minds works synergistically or clashes instead. This self-awareness is of importance as it gives them the realisation that, besides external factors, they themselves play one of the main roles in the ultimate success or failure of the start-up. After all, founders cannot avoid the fact that they add subjectivity to their firm (de la Cruz et al., 2018; Hoang & Gimeno, 2010), and business activities are infused with meaning resulting from the expression of the individual identity (de la Cruz et al., 2018). Giving individuals insight into their own cognitive frames makes them self-aware and allows them to see entirely different sets of alternatives or possible courses of action (Dew et al., 2009).

Second, the practical relevance of this study is that it gives starting entrepreneurs insights into their behaviour that has been shaped by the combination of effectuation and psychological ownership. Insight into one's own behaviour is of particular importance for starting entrepreneurs as it allows them to shape and challenge it, determining if that behaviour is contributing to the success of the start-up or not (Bird & Schjoedt, 2017). Ultimately, this is the first step towards choosing the kind of behaviour that suits the intentional goals of the start-up which facilitates growth, such as making a conscious decision to implement an effectual logic in the early start-up phase (Sarasvathy, 2001a). Such conscious decisions are of importance since poor management is one of the main reasons small firms struggle for survival and fail to make reasonable profits (Fuller-Love, 2006).

Finally, insights from this research provide start-up incubators with valuable insights about the starting entrepreneurs connected to them. As the main function of start-up incubators is to assist entrepreneurs in the establishment of their new firms (Lee & Osteryoung, 2004), incubators should provide various types of practices to create awareness of the possible paths to be undertaken (Battistella et al., 2018). This research presents start-up incubators with new insights that help them to better guide their starting entrepreneurs since they will gain a better understanding of how the presence of an effectual logic combined with psychological ownership, shapes their starting entrepreneurs' behaviour.

1.6 Research outline

To establish this research, the next chapter will consider the theoretical background. Here, the conceptual model will be presented, and the concepts of this research will be elaborated upon. Thereafter, Chapter 3 discusses the methodology, elaborating upon the approach, case description and selection, operationalisation, data collection and data analysis. Additionally, a paragraph is devoted to the quality of the research and the research ethics will be discussed. In Chapter 4 all relevant results based on the data collection will be described, as it will present the subsequent propositions. At the end of this chapter, the adjusted conceptual model will be presented. Finally, in Chapter 5 the conclusion to answer the research question will be described, followed by a discussion regarding the theoretical and managerial implications. To end off, the limitations with directions for future research will be provided and the author will be elaborating upon reflexivity.

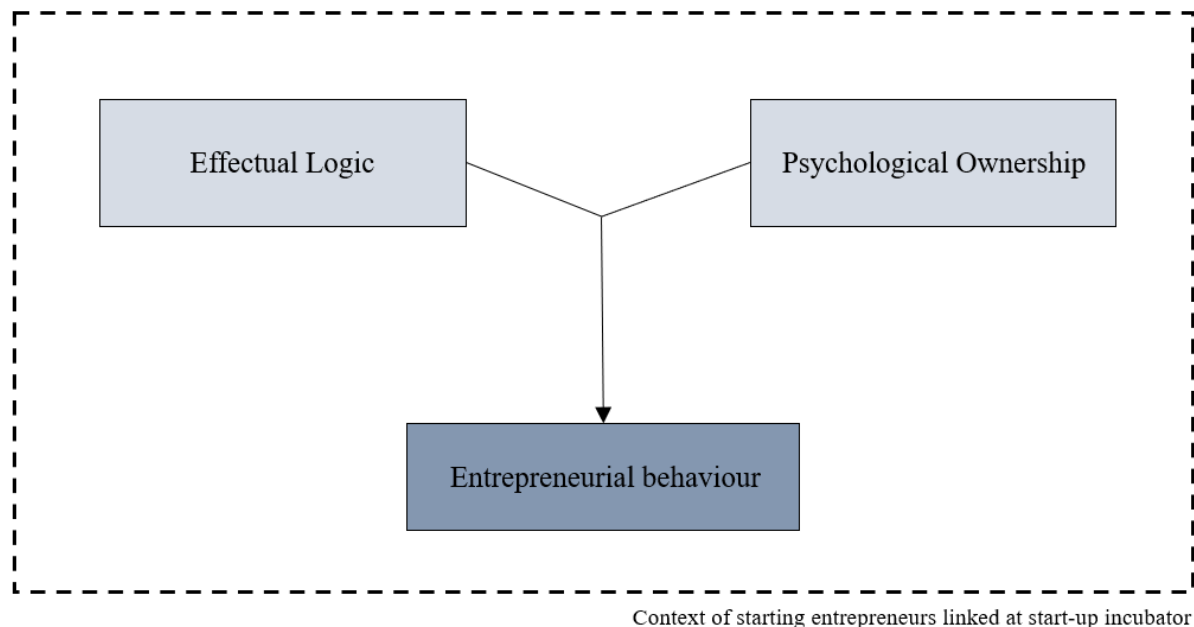
2. Literature review

This research has built upon the exploration of new insights regarding how the combination of the effectual logic and feelings of psychological ownership of starting entrepreneurs shapes their managerial practices. In this chapter, the conceptual model will be presented first, giving insight into the relations between the concepts and thereby giving direction and providing focus. Next, the following paragraphs will explain the main concepts of this study in the light of theory.

Figure 1 shows the preliminary conceptual model. It demonstrates the relations between the concepts of this study and provides insight into their context. The concepts of effectuation and psychological ownership (light-blue in Figure 1) are part of the context of the entrepreneurs' cognition, whereby cognition is defined as the knowledge structure in the mind which acts as the lens through which information is interpreted and translated into organisational actions (Zhou & Yang, 2019, p. 2060). As both effectuation and psychological ownership are concepts that play a role in the mind of the entrepreneur and regard what they are convinced of, feel, perceive and think, these concepts can thus be viewed as two forms of cognition. Based on the cognition of the entrepreneur, entrepreneurial behaviour takes shape (Bird & Schjoedt, 2017). Entrepreneurial behaviour (dark-blue in Figure 1) implies what entrepreneurs 'do' and is best understood as units of action that can be observed by others (Bird & Schjoedt, 2017, p. 328). This study explored how the combination of these two concepts shapes entrepreneurial behaviour, illustrated in Figure 1 by the arrow indicating a direct joint effect. This arrow illustrates the main research question of this study, namely how the combination of the two concepts of effectuation and psychological ownership shapes the entrepreneurial behaviour of the starting entrepreneurs. The context in which this research question was studied is of starting entrepreneurs linked at a start-up incubator.

Figure 1

Qualitative conceptual model of this research



2.1 Effectuation

2.1.1 Theoretical background

Effectuation theory distinguishes two logics: ‘Causation’ and ‘Effectuation’, whereby a logic is defined as an internally consistent set of ideas that forms a clear basis for action upon the world (Sarasvathy, 2009, p. 22). In many established organisations, the dominant logic of managers is ‘causal’, where the hope is to control organisational outcomes by predicting the environment and positioning the organisation to succeed (Wiltbank et al., 2009). The underlying reasoning is that if individuals succeed in predicting the future, they can control its outcomes and are thereby more likely to experience success (Stroe et al., 2018). The causal logic, therefore, takes a goal as a given and is focussed on selecting means to achieve that goal in the most efficient way (Berends et al., 2014). The causal process shows similarities with planned strategy approaches (Ansoff & McDonnell, 1988) and the deliberate strategy process described by earlier research of Mintzberg (1978). Such models require planning and analysis under the assumption that the distribution of outcomes in a group is predictable through calculation or statistical inference (Sarasvathy, 2001a).

However, the insight emerged that entrepreneurs seem to have a totally different form of rationality in comparison with the causal logic of managers at established organisations (Sarasvathy, 1997). This is especially the case for starting entrepreneurs in the first stages of their firm. Sarasvathy named this particular kind of reasoning ‘effectual’ (Sarasvathy, 2001b). Entrepreneurs who have a preference towards an effectual logic believe that the future is to be constructed through human action (Djuricic & Bootz, 2019). The future is being controlled by acting upon it (Dew et al., 2009), also called ‘non-predictive control’ (Sarasvathy, 2001a). At the heart of effectuation lies the assumption that value is created with available resources, even if these may be perceived as limited from an outsider’s perspective (Baker & Nelson, 2005). Entrepreneurs start from their means; who they are, what they know, and whom they know (Sarasvathy, 2001b; Wiltbank et al., 2009). Examples of means on the individual level are the entrepreneurs’ identity, knowledge, and personal networks. Furthermore, examples of organisational level means are capabilities, inter-organisational relations, and resources (Sarasvathy, 2001a; Wiltbank et al., 2006). In this way, effectuation emphasises the resources in possession and based upon this entrepreneurs see the future as an open space, left to be discovered and constructed (Sarasvathy, 2001b). As activities are not planned in advance, multiple paths are instead left open until circumstances determine the emergent path forward (Berends et al., 2014). For (starting) entrepreneurs, this may be an advantage in a complex and uncertain setting because predictions are less accurate and useful (Stroe et al., 2018; Wiltbank et al., 2009). The effectual logic shows therefore similarities to earlier described theories such as emergent strategy (Mintzberg, 1978) or non-predictive strategy (Wiltbank et al., 2006). As the effectual logic stimulates small firms to use the resources available, maintain alertness to emerging new resources, and focus on short-term success (Berends et al., 2014; Reymen et al., 2017), it is especially suited to small firms’ strengths and limitations (Berends et al., 2014) and it positively contributes to new venture growth (Cai et al., 2017).

To conclude, (starting) entrepreneurs seem to think and act differently than managers at established organisations and over the last few decades, the concept of effectuation in literature has proven itself to successfully interpret and describe this cognition and behaviour (Arvidsson et al., 2020; Klenner et al., 2022; Perry et al., 2012). As this study also aimed to explore the cognition and behaviour of starting entrepreneurs, the inclusion of effectuation in this study was therefore justified.

2.1.2 Principles

While causation and effectuation are distinct logics, neither is superior to the other (Sarasvathy, 2001a). Where effectuation is dominant in earlier stages of the start-up, causation is more used in later stages of the established organisation (Berends et al., 2014). Even though this study focused on effectuation instead of causation, as the scope regards starting entrepreneurs in earlier stages of the start-up, it is still important to understand the distinct characters of the two logics in order to correctly interpret the concept of effectuation. This understanding has been of aid during the data collection when assessing whether the starting entrepreneurs in this study indeed preferred an effectual logic. The difference in nature of the two logics can be further clarified by comparing the logics through different lenses, called ‘principles’ (Reymen et al., 2015; Sarasvathy, 2001a). The different principles are as follows: 1) view of the future, 2) attitude to surprise, 3) basis for action, 4) attitude to others and 5) view on uncertainty:

Principle 1: View of the future

Causation has a predictive view of the future where everything can be planned (Read et al., 2009). It views the world as a place where markets exist and organisations seek opportunities to thrive within those markets (Chandler et al., 2011). In contrast, effectuation has a creative view of the future where strategies can be used for creating opportunities themselves (Agogu   et al., 2015). They concentrate on building the future through their actions and interactions with the different actors in their environment (Djuricic & Bootz, 2019). The world is, according to this logic, a place where organisations actively plant, nurture, and harvest in markets created by their actions and the actions of others (Chandler et al., 2011).

Principle 2: Attitude to surprise

The causal and effectual logic differ in terms of how entrepreneurs react to unexpected events and how they deal with challenges (Sarasvathy, 2001a). While causation wants to avoid surprises, effectuation utilizes surprise as leverage (Read et al., 2009). Under causation, entrepreneurs focus on implementing an initial plan and as a consequence respond negatively to unforeseeable events, which are considered obstacles to executing the plan (Sarasvathy, 2001a). In contrast, under effectuation entrepreneurs seek and incorporate external feedback which makes them flexible to unforeseen events and use them to the organisations’ advantage (Chandler et al., 2011). This process, which is also called ‘leverage contingency’, implies that the entrepreneur is having a business plan but the willingness to change remains when confronted with new information, means or surprises (Read et al., 2009). Any contingency under effectuation can trigger imaginative rethinking of possibilities and transformation of targets (Agogu   et al., 2015).

Principle 3: Basis for action

The two logics also differ regarding the basis for decision-making and their course of action. Causation’s basis for action is goal-oriented, whereas effectuation is means-oriented (Read et al., 2009). Under causation processes, a goal is taken as a given and the focus is on selecting means to achieve that goal in the most efficient way (Berends et al., 2014; Stroe et al., 2018). Goals precede resources (Berends et al., 2014) and the focus is on planning and analysing various dimensions of the environment (Brinckmann et al., 2010). Under effectuation processes, a set of means is taken as a given and the focus is on selecting between possible effects that can be created with that set of means (Berends et al., 2014). Means are related to who you are, what you know, and whom you know (Agogu   et al., 2015) and the process is focused on increasing and optimising performance using these resources (Sarasvathy, 2001a; Sarasvathy & Dew, 2005). Resource events precede goals and effectuation learns as it goes (Berends et al., 2014).

Principle 4: Attitude to others

The causal and effectual logic furthermore differ in how others are perceived and how they accordingly interrelate with them (Read et al., 2009). A causal attitude towards others is based on competition. Partnerships with customers and suppliers are limited to transactional relations, building on competitive advantage and protecting the organisations' know-how from outsiders (Agogu   et al., 2015). In contrast, an effectual attitude towards others is focussed on building partnerships based on complementary competencies that help them achieve their goals (Read et al., 2009). Subsequently, markets are built together with trusted stakeholders (Agogu   et al., 2015). Partnerships play an essential role by providing new knowledge, ideas, and support for projects (Djuricic & Bootz, 2019) and are crucial for expanding means, resources and providing access to networks (Read et al., 2009; Wiltbank et al., 2006). A learning curve for these entrepreneurs is established through interactions with other parties by confronting their own initial perceptions with the perceptions of others (Dew et al., 2009). Therefore, effectuation can be described as a people-dependent logic (Djuricic & Bootz, 2019; Sarasvathy, 2001a).

Principle 5: View on uncertainty

While causation deals with uncertainty through expected returns and upside potential, effectuation deals with it through affordable loss (Read et al., 2009). Under causation, the market segments are targeted with the highest potential returns and a clear plan is established accordingly. This usually requires major investments in the new organisation in order to maximize expected returns (Read & Sarasvathy, 2005). In contrast, the effectual logic advocates affordable loss (Read & Sarasvathy, 2005), meaning the focus is on using available resources and making small investments to ensure that the new venture does not suffer if these investments are lost (Dew et al., 2009). The expenses are kept as low as possible to where the only investments made are with what the entrepreneur can afford to lose (Wiltbank et al., 2006). For this reason, many of them will try to sell their products before it is even finished, as this creates the opportunity to contact potential users at an early stage.

2.2 Psychological Ownership

2.2.1 Theoretical background

Psychological Ownership is a concept originating from psychology that refers to a state of mind where individuals become psychologically tied to a target or object and this becomes part of the extended self (Pierce et al., 2001; Pierce et al., 2003). Previously in management studies, the concept of ownership was often associated with the amount of equity controlled by individuals (Townsend et al., 2009). However, the understanding arose that feelings of ownership could also exist in the absence of objective control (Pierce et al., 1991). Scholars found that executives with psychological ownership have a personal stake in the performance of their "owned" organisation because the success of the organisation is tied to the executive's identity (Campbell Pickford et al., 2016). It holds for many owner-managers that the business is an extension of their own ego and the decision-making process is often influenced by the will to maintain their lifestyle rather than growing or improving the business (Banfield et al., 1996). It is for this reason that these individuals who experience feelings of psychological ownership often refer to their business as 'MINE' (Pierce et al., 2001). Previous research found that psychological ownership is more strongly present in the mind of starting entrepreneurs, as this group is more personally involved in the creation of their start-up (Cardon et al., 2009). The more time, ideas, unique knowledge and personal style individuals invest, the higher the probability of psychological ownership to develop (Pierce et al., 2001). As Pierce et al. (2003) stated; the most obvious and powerful means by which individuals invest themselves into objects is by creating them. This is exactly the case for starting entrepreneurs.

““Mine” is a small word.... It is deceptive in its power and importance.... It controls our behavior, but we rarely notice, as we move about our world restricting ourselves to narrow walkways and to those places for which we have keys (Rudmin, 1994, p. 55).”

The phenomenon of psychological ownership shows similarities to the concept of organisational identification, a concept extensively researched in the human resource management domain (Edwards, 2009). Organisational identification describes the fact that the individual commits to something that he or she considers to be in line with his or her self-image (Pierce et al., 2001). Where at first glance this seems similar to psychological ownership, it is not the same. Whereas organisational identification assumes that individuals commit to something that already exists, psychological ownership is about the identification an individual feels towards something as the individual has created that something him- or herself (Pierce et al., 2001).

Psychological ownership is painted in literature as a ‘double-edged sword’ (Cocieru et al., 2019). On the one hand, psychological ownership is shown to have a positive effect on organisational success (Pan et al., 2014; Santoso, 2020). In the positive sense, psychological ownership leads to feelings of responsibility, leading to investing time and energy in the organisation (Van Dyne & Pierce, 2004), active participation (Dirks et al., 1996) and commitment and satisfaction (Vandewalle et al., 1995). On the other hand, psychological ownership can also have important negative behavioural, emotional, and psychological consequences (Pierce et al., 2001). In the negative sense, psychological ownership results in resisting change as these entrepreneurs perceive change as threatening to the individual's sense of control (Pierce et al., 2001). It also results in difficulty sharing control of their business as they often perceive themselves as uniquely qualified and thus indispensable to the firm (De Vries, 2007). Furthermore, it may result in territorial behaviours where they protect their possessions from others and try to limit other people's access to it (Brown et al., 2005), thereby impeding cooperation (Pierce et al., 2003). All these explained negative effects can be thought of as responsibilities to protect, care for, make sacrifices for, nurture, and develop the target of ownership (Pierce et al., 2001).

To conclude, it can be stated that psychological ownership is important in the understanding of entrepreneurial attitudes and behaviours (Pierce et al., 2001). Especially for starting entrepreneurs, as these individuals seem to be more prone to developing feelings of psychological ownership. As this study aimed to explore the cognition and behaviour of starting entrepreneurs, the inclusion of psychological ownership in this study was therefore justified.

2.2.2 Main characteristics

In the psychological ownership literature, there seems to be a debate about the origins of certain feelings in relation to having psychological ownership (Dawkins et al., 2017). For example, for the feeling of responsibility for the target of ownership. Where Avey et al. (2009) argued that this is a component of psychological ownership and that it is inherently part of it, Pierce et al. (2003), in contrast, stated that this feeling is a consequence of having psychological ownership. This debate prompted this study to look at the main characteristics of psychological ownership in the literature on which there does seem to be a consensus. Two main characteristics have been found.

First, entrepreneurs experiencing psychological ownership feel like the business is part of their identity (Pierce et al., 2001). They invest themselves in the target (Ljungkvist & Boers, 2019). As a result, they feel as if they are one with their start-up; they are their start-up and the start-up is them. Thereby the business becomes part of the entrepreneur's ‘self’ (Hsu et al., 2017). As psychological ownership concerns the question: “*What do I feel is mine and a part of me?*”, entrepreneurs experiencing feelings of psychological ownership will therefore answer

this question with ‘my business’ (Pierce et al., 2001). Self-identity with the business is an indicator also used in the respected studies of Avey et al. (2009) and Pierce et al. (2001) to determine the presence and degree of psychological ownership.

Second, investing their time, energy, own values, and identity into the creation of their business, makes entrepreneurs with psychological ownership refer to their business as “their baby” (Cardon et al., 2012; Cardon & Patel, 2015). The fact that they experience their business as “their baby” underlines the togetherness these individuals feel towards their target of ownership (Steira & Steinmo, 2021) and is a strong indication of psychological ownership.

To conclude, these two main characteristics are not mutually exclusive. But despite this, these main characteristics are on which there is consensus in literature and form a comprehensive understanding of the concept of psychological ownership for starting entrepreneurs.

2.3 Literature comparison of Effectuation and Psychological Ownership

As previous paragraphs have indicated, the concepts of effectuation and psychological ownership are widely adopted phenomena and their individual effect on entrepreneurial behaviour has been studied quite extensively. This paragraph aims to compare the literature regarding the two concepts to obtain a better understanding of the corresponding and contradicting underlying theoretical perspectives.

To start with, when comparing the core definitions of the two concepts there seems to be an apparent closeness in their definitions. The backbone of the effectual logic is the question “*Who am I?*”, one of the three important means upon which effectual entrepreneurs base their actions (Agogu   et al., 2015). In comparison, the backbone of psychological ownership is the question “*What do I feel is mine and a part of me?*” (Pierce et al., 2001). The apparent closeness between these definitions is reinforced by the words of William James, the “father of psychology”, who stated that there is a fine line between “*me*” and which is considered “*mine*” (James et al., 1890). Possessions, as a part of the extended self, play a dominant role in the owner’s identity (Belk, 1988) and the loss of possessions may result in the shrinkage of one’s personality (James et al., 1890).

Corresponding underlying theoretical perspectives are found when comparing effectuation and psychological ownership in literature. Literature on effectuation has argued that certain feelings are required in order to increase firm performance through effectuation, these are respectively: feelings of passion (Laskovaia et al., 2022; Stroe et al., 2018), persistence (Cardon et al., 2013) and the conviction in their own competence (Coudounaris & Arvidsson, 2021). Corresponding, literature has described the positive implications of psychological ownership also to be passion towards the venture, persistence to invest time and energy in the venture (Van Dyne & Pierce, 2004; Vandewalle et al., 1995), and high self-esteem (Avey et al., 2009; Zhang et al., 2021).

In contrast, contradicting underlying theoretical perspectives are also found when comparing the literature regarding effectuation and psychological ownership (an additional visualisation is presented in the table in Appendix A). With regard to forming partnerships, effectuation requires the entrepreneur to personally persuade stakeholders in order to create a feasible set of contracts (Sarasvathy, 1997). However, individuals who have psychological ownership are found to engage in territorial behaviours, leading them to have the tendency to protect their possessions from others and try to limit other people’s access to it (Brown et al., 2005).

The perspective on change regarding the effectuation literature is that effectual entrepreneurs need to be welcoming to change, incorporate external feedback and use them to the organisation’s advantage, which makes

them flexible to unforeseen events (Chandler et al., 2011). But, change from the perspective of the psychological ownership literature is viewed as an effort to reposition their self-concepts (Galvin et al., 2015). This may result in feelings of personal loss, frustration, and stress due to the lack of control over what once was theirs (Bartunek et al., 1993). Change can therefore trigger resistance (Baer & Brown, 2012) and may feel like a personal attack (Galvin et al., 2015).

The attitude towards others in partnerships from the perspective of the effectuation literature is valuing partnerships where the relation is based on knowledge and resource-sharing, thereby contributing to achieving their goals (Read et al., 2009). In contrast, the psychological ownership literature has described individuals to act much like overly possessive children, unwilling to share the target of ownership with others or the need to retain exclusive control over it which impedes cooperation and knowledge sharing (Pierce et al., 2003).

As for the perspective of attitude towards team members, effectuation can best be described as a people-dependent logic, as a learning curve is established through interactions with other parties by confronting their initial perceptions with the perceptions of others (Djuricic & Bootz, 2019; Sarasvathy, 2001a). Contradicting, the psychological ownership literature has described entrepreneurs employing defensive and protective actions and behaviours to protect their possession (Brown et al., 2005). It is only them who know what is best for their venture (Bernhard, 2011). Situations occur where even minor decisions must be escalated to the founder-manager, which can lead to an overload of decision-making on the founder-manager (Tashakori, 1980).

The perspective on control regarding the effectuation literature is that effectual entrepreneurs need to focus on increasing and optimising performance using resources (Sarasvathy, 2001a; Sarasvathy & Dew, 2005) and to do this they often need to sacrifice control to gain access to external resources (Wasserman, 2008). In contradiction with this perspective, the psychological ownership literature has stated the key reason individuals develop psychological ownership is because it satisfies their needs for control (Pierce & Jussila, 2011; Pierce et al., 2001). When psychological ownership is present, entrepreneurs are less likely to share control of their business, they often perceive themselves as uniquely qualified and thus indispensable to the firm (De Vries, 2007).

And with regard to uncertainty, the effectual perspective on dealing with uncertainty is through affordable loss (Read & Sarasvathy, 2005) where affordable experiments are chosen above experiments that would cost more than the entrepreneur could afford to lose (Chandler et al., 2011). Following the notion of affordable loss, effectual entrepreneurs are thus more likely to consider liquidation (of ideas) (DeTienne & Chandler, 2010). Contradicting, the psychological ownership literature has stated that the loss of special possessions for individuals having psychological ownership results in strong negative reactions because certain possessions are one's identity markers, and losing them means, to some extent, the "death" of the self (Burris & Rempel, 2004). Liquidation may therefore be avoided and poor investment decisions follow (Peck & Luangrath, 2018).

Concluding, comparing the literature on Effectuation and Psychological Ownership gives both indications for corresponding as well as for contradicting theoretical perspectives. In the corresponding perspectives, the two concepts seem to complement each other. This created the impression that having psychological ownership helps when the entrepreneur's cognition consists of the effectual logic. The combination would then work synergistically. On the other hand, in the contradicting perspectives, the two concepts seem to clash. This, in turn, created the impression that having psychological ownership is hindering when the entrepreneur's cognition consists of the effectual logic. The combination would then work hindering. The following paragraph will move forward from describing literature about cognition, to entrepreneurial behaviour.

2.4 Entrepreneurial behaviour

2.4.1 Theoretical background

The cognition of entrepreneurs determines and shapes their entrepreneurial behaviour (Bird & Schjoedt, 2017; Gruber & MacMillan, 2017). Entrepreneurial behaviour is defined as a concrete enactment of individual tasks or activities required to start and grow a new organisation (Bird & Schjoedt, 2017, p. 328). It implies what entrepreneurs ‘do’ and is best understood as units of action that can be observed by others.

“We have to understand the world can only be grasped by action, not by contemplation. The hand is more important than the eye.... The hand is the cutting edge of the mind (Bronowski, 1973, pp. 92-93).”

The literature showed different perspectives when it comes to examples of entrepreneurial behaviour. Some studies have mentioned more specific entrepreneurial behaviours such as writing a business plan (Haber & Reichel, 2007) and opening a business bank account (Lichtenstein et al., 2007). Other studies have described behaviour as less specific and more abstract, for example, organizing the vision (Lichtenstein et al., 2006) or legitimizing behaviours (Tornikoski & Newbert, 2007).

Despite these different perspectives, there seems to be consensus in literature regarding the complex nature of entrepreneurial behaviour and as a result the difficulty of clearly capturing this concept. As was stated by Lichtenstein et al. (2006), entrepreneurial behaviour is rather complex as it is a dynamic process. The statements of Bird and Schjoedt (2017) underline this by them having stated that entrepreneurial behaviour is not a discrete unit of activity, but a complex set of activities with some done sequentially, but most done iteratively. Entrepreneurs are not always adopting behaviour that follows a logical chain from inputs to outcomes (Janssen et al., 2018), they instead engage in unplanned, “unscientific experimentation” and “opportunistic adaptation” (Bhide, 2003). An example of how entrepreneurs run their business is “bricolage”, in other words ‘making do’ with ‘whatever at hand’ (Baker & Nelson, 2005; Lévi-Strauss, 1966). This illustrates that entrepreneurial behaviour is inherently experimental in nature (Kerr et al., 2014).

2.4.2 Categories of practices in exploring behaviour

This experimental way in which entrepreneurs run their start-up poses a problem when conducting research. As stated by Anderson and Starnawska (2008), the problem lies in the very richness, diversity and complexity of ways of being entrepreneurial. Entrepreneurship is broad and wide-ranging; the boundaries are fuzzy and may incorporate some disciplinary approaches. This makes it so that researchers often try to analyse a phenomenon that cannot properly be defined (Anderson & Starnawska, 2008). Even though scholars emphasise quality measurement for entrepreneurial behaviour to be crucial (Boyd et al., 2005; Godfrey & Hill, 1995), in current literature many of the behaviours of entrepreneurship research are not discrete but complex and often ill-defined (Bird & Schjoedt, 2017). To overcome this problem in this research, the choice was made to define the concept of entrepreneurial behaviour a bit more precise, even though it can be concluded that in practice starting entrepreneurs ‘simply just do something’, they experiment in a more or less structured way. By defining the concept of entrepreneurial behaviour more precisely, more guidance was provided to this research during the data collection and analysis process. This in turn contributed to a better exploration of how entrepreneurial behaviour is shaped by the combination of effectuation and psychological ownership.

Therefore, in this research entrepreneurial behaviour was explored through the lens of managerial practices. Managerial practices are the working methods used by managers to improve the effectiveness of work systems (Siebers et al., 2008). As managerial practices concern what managers and/or entrepreneurs do, the use of

this concept was justified in this research to describe entrepreneurial behaviour. Siebers et al. (2008) discussed traditional categories of managerial practices such as empowering staff, training staff, introducing schemes for improving quality, and introducing various forms of new technology. However, in this study the categories of managerial practices as defined by Ates et al. (2013) were used as lenses to explore entrepreneurial behaviour, which are respectively; planning, running, monitoring and decision-making. These categories of Ates et al. (2013) seemed to be more appropriate in this study than the categories defined by Siebers et al. (2008) as the latter are too traditional and more suitable for business executives. After all, entrepreneurial behaviour is inherently more complex and multidimensional than the leadership of business executives in extant organisations (Bird & Schjoedt, 2017). Entrepreneurs and founders are said to act differently than business executives (Busenitz & Barney, 1997), for their role is to translate new knowledge into economic activity and growth (Lindholm-Dahlstrand et al., 2019). The categories of Ates et al. (2013) provided enough structure to explore entrepreneurial behaviour and were simultaneously broad enough to capture the experimental character of this behaviour:

Planning

Behaviour that can be understood as ‘planning’ includes the analysis of the strategic direction of the business, accompanied by setting goals and objectives based on both internal and external environmental analysis (Ates et al., 2013). Plans are produced regarding all these components. Other examples are developing vision, mission, values, goals, objectives, and action plans. Furthermore, other planning-related behaviour includes the planning of resource requirements, short and long-term activities, and potential change programs.

Running

According to Ates et al. (2013), executing the plans is a continuous process that involves continuous communication with stakeholders. This communication aims at acting as an early warning signal to update plans on time as so not to jeopardise targeted performance results. Examples of behaviour related to running the business are communicating on company performance, change, strategic objectives, communicating with suppliers, customers and competitors, the implementation of action plans and change programs, training, and investing.

Monitoring

Behaviour that can be understood as ‘monitoring’ involves the checking and evaluation of the results qualitatively and quantitatively (Ates et al., 2013). This provides an understanding of how the business performs against a set of (not only financially) objectives. Examples of behaviour related to monitoring the business are checking staff performance, checking financial performance and monitoring suppliers, customers, competitors, and the macro environment.

Decision-making

Decision-making behaviour regards acting upon the priority actions (Ates et al., 2013). Examples of behaviour related to decision-making are reviewing business goals, objectives, vision, mission, values, business action plans, and making the ‘right’ decisions accordingly. The revision of business measures, defining the improvement of activities and the incorporation of feedback are also part of ‘decision-making’.

2.4.3 Functional and dysfunctional behaviour

After a comparison of the literature regarding effectuation and psychological ownership in paragraph 2.3, it was found that literature has given both indications for corresponding as well as for contradicting theoretical perspectives. In the corresponding perspectives, the two concepts seem to complement each other. This creates the impression that having psychological ownership helps when the entrepreneur's cognition consists of the effectual

logic. Hence, having the two states-of-mind is functional as it contributes to the successful implementation of the effectual logic. It is functional, as the effectual logic is said to be especially suited to small firms' strengths and limitations (Berends et al., 2014) and contributes to new venture growth (Cai et al., 2017). On the other hand, in the contradicting perspectives, the two concepts seem to clash. This, in turn, suggests that having psychological ownership is hindering when the entrepreneur's cognition consists of the effectual logic. Thus, having the two states-of-mind is dysfunctional as it hinders the successful implementation of the effectual logic.

To link theory and the empirical results of this study, this study therefore distinguished between functional and dysfunctional behaviour, and the behaviour of the starting entrepreneurs in this study was interpreted in this light (in paragraph 4.3 'Entrepreneurial behaviour'). The found behaviour of the starting entrepreneurs in this study was labelled as 'functional' when being in line with what one would expect when the effectual logic is successfully implemented into practice; the empirically found behaviour was consistent with the effectual behaviour across the various principles as described by literature (see paragraph 2.1 'Effectuation'). On the other hand, found behaviour was labelled as 'dysfunctional' when not being in line with the behaviour required for the effectual logic; the empirically found behaviour was fundamentally different from the effectual behaviour across the various principles as described by literature.

2.5 Context of starting entrepreneurs linked at a start-up incubator

While small firms enjoy greater flexibility than large firms, their resources and skills are more limited and they lack the organisational and marketing capabilities of larger firms (Berends et al., 2014). Small firms have limited resources for product innovation projects (Chandy & Tellis, 2000; Moultrie et al., 2007) and lack the financial resources to cover the cost of innovation processes (Millward & Lewis, 2005; Radas & Božić, 2009). These external uncertainties are even more pressing for starting entrepreneurs as there is an increased doubt about the product-market fit (Zellweger & Zenger, 2021). In this uncertain context, a particularly important role is devoted to start-up incubators. Start-up incubators play an important role in enabling entrepreneurial activity and helping to overcome these external uncertainties through the provision of seed capital, extensive mentorship, and constant feedback (Chengappa, 2014). As the main function of start-up incubators is to assist entrepreneurs in the establishment of their new firms, they provide a diverse offering of services and support (Lee & Osteryoung, 2004). For instance, start-up incubators seek to connect talent, (financial) capital, expertise and technology in order to accelerate the growth of new ventures and by doing so quicken the commercialisation of the offering (Smilor et al., 1990). Starting entrepreneurs linked at a start-up incubator often receive feedback from their mentors, resulting in their self-reflective learning being facilitated (Marlow & McAdam, 2015) and allowing them to explore how their current trajectory coexists with future possibilities (Garcia-Lorenzo et al., 2018). The self-assessment and reflection processes provided by the incubator make these starting entrepreneurs more aware of their own competency gaps (Miles et al., 2017). Furthermore, this reasoning seems to be true the other way round as well; self-evaluating entrepreneurs are more likely to use the help of a business incubator, which makes entrepreneurs at a start-up incubator are more likely to possess a reflective mindset (Prashantham & Floyd, 2019). Through this process of reflection, they may be more aware of identification with their start-up (psychological ownership) and their mindset as an entrepreneur (effectual logic). This increased the possibility that the concepts of this study, effectuation and psychological ownership, would arise to the surface and therefore it could be examined in more depth how the combination shapes their entrepreneurial behaviour. This made investigating starting entrepreneurs connected to a start-up incubator justified for this study.

3. Methodology

This chapter elaborates on the research methods that were used in this study. An explanation of the chosen research method, case description, data collection, operationalisation of concepts, and data analysis will be provided. Also, attention is devoted to the quality of the research and the research ethics.

3.1 Research method

This study aimed to gather insights into how the effectual logic of starting entrepreneurs in combination with them having feelings of psychological ownership, shapes their entrepreneurial behaviour. Since a complex study such as this had not been done before and it was difficult to bring the concepts together, this study was an attempt to clarify this. This research can thus be characterised as exploratory research (Saunders et al., 2009, p. 139).

In case a study has an exploratory nature, qualitative methods are necessary (Brytting, 1990) and therefore the character of this study was qualitative. Qualitative research attempts to broaden and/or deepen the understanding of how things come to be the way they are in our social world (Flick, 2007; Hancock et al., 2001). It studies behaviour in natural settings or uses people's accounts as data, focusing on reports of experience or on data which cannot be adequately expressed numerically (Hancock et al., 2001). According to Hancock et al. (2001), the criterium to opt for a qualitative approach is when a study is investigating how people experience something and what their views are in order to explore a new area where issues are not yet understood or properly identified. This study adhered to this criterium by having investigated the not yet understood combination of effectuation and psychological ownership and how this shapes entrepreneurial behaviour. Additionally, as stated by Gioia and Thomas (1996) qualitative methods are suitable for the study of dynamic processes, especially where these processes are constituted by interpretations of individuals. As aforementioned, the concepts of effectuation and psychological ownership are forms of entrepreneurial cognition and are therefore indeed interpretations of individuals. Furthermore, previous studies on psychological ownership which followed a quantitative approach, made it difficult to account for its inherent complexity (Ljungkvist & Boers, 2019). This together justified the choice of a qualitative approach.

This study has benefited from a two-sided approach; on the one hand, the researcher benefited from making use of existing theory (as was conducted on the concepts of effectuation and psychological ownership) and on the other hand this study needed to allow for the development of new and useful theory (how entrepreneurial behaviour is shaped through the combination of effectuation and psychological ownership) (dr. A.A.J. Smits, personal communication, May 23, 2022). Therefore, a quasi-inductive approach was used for this study. The quasi-inductive method, also called a modified version of the grounded theory approach, combines links to existing theories with the specified guiding principles of data sampling and analysis from grounded theory (Perry & Jensen, 2001). This approach encourages the use of 'pre-categories' which are based on existing theories. The development of pre-categories is done before the coding process begins. This would give the researcher insight into several dimensions of the phenomenon to be studied, and at the same time, this approach ensures the openness of the research, allowing new theories and insights to emerge (Perry & Jensen, 2001). The aim of getting insight into these pre-categories in a quasi-inductive approach is not to perform verifying and theory-testing, but rather to put them on trial within a real empirical context for contextual re-specification or refinement. In conclusion, the fact that the quasi-inductive method allows both the use of existing literature as well as the openness to discover new phenomena from the data, made it an appropriate method in this research.

3.2 Case description

Earlier in this research, paragraph 2.5 ‘Context of starting entrepreneurs linked at a start-up incubator’ elaborated upon the importance of the scope of this study to focus on starting entrepreneurs in the context of a start-up incubator. The starting entrepreneurs in this research were all connected to the start-up incubator StartUp Nijmegen, which means that this incubator was at that time helping them in the growth of their business. The justification of the conscious decision for StartUp Nijmegen and its starting entrepreneurs as a sample for this study will be further elaborated upon.

Nijmegen is an important city in The Netherlands for entrepreneurial activity. Entrepreneurs and institutions are positive about the entrepreneurial climate in Nijmegen (Lifeport, 2017). Data shows that there are about 2000 small innovative companies (<10 employees) in the municipality of Nijmegen (CBS, 2018). The presence of Radboud University, the HAN University of Applied Sciences and the Novio Tech Campus strengthen the entrepreneurial climate (CBS, 2018). Furthermore, Nijmegen has been declared the “health valley” for enterprises through intensive cooperation with Radboudumc (Healthvalley, 2022). Additionally, 47% of the population of Nijmegen is highly educated, which is more than in other knowledge cities like Eindhoven and Enschede (CBS, 2021). A population with more highly educated adults will produce more start-ups (Motoyama & Bell-Masterson, 2014). In Nijmegen every year as many as 200 entrepreneurs start a business (Ginneken, 2018).

StartUp Nijmegen as an incubator plays a key role in enabling these entrepreneurial activities. It aims to improve the economic system of the city (Ginneken, 2018), by being an inspiring environment to establish, grow and prosper for a starting entrepreneur (Into Nijmegen, 2022). When this start-up incubator was founded in 2016, 13 start-ups with their starting entrepreneurs were guided, and this number increased rapidly to 92 in 2018 (Ginneken, 2018). Nowadays this number has increased to 115 start-ups (StartUp Nijmegen, 2022). StartUp Nijmegen is a dynamic incubator, as many entrepreneurs leave the incubator after a while because they have grown so much that they no longer need its help (Ginneken, 2018). The unique added value that StartUp Nijmegen offers to its starting entrepreneurs is cooperation with 27 renowned companies from the region. These companies work together with StartUp Nijmegen and support the entrepreneurs with their knowledge and their network (Lifeport, 2018). StartUp Nijmegen is in a ‘unique start-up ecosystem’ which is created by collaborations with ROC Nijmegen, the Hogeschool van Arnhem & Nijmegen and Radboud University (Ginneken, 2019).

The selection criteria for selecting starting entrepreneurs within StartUp Nijmegen were as follows; First, the starting entrepreneur had to be under the guidance of StartUp Nijmegen. Some entrepreneurs with larger companies (and are therefore no longer starting entrepreneurs) are still connected to StartUp Nijmegen, but their role has now become to help new starting entrepreneurs with their experience. This type of entrepreneurs do not define themselves as starting entrepreneurs and were therefore not included. Second, the businesses of the starting entrepreneurs had to be characterised by the criteria of being a start-up by having no more than 7.7 employees on average (Kollmann et al., 2016). Third, the starting entrepreneurs selected for this study had to be the CEO/founder of the start-up. This allowed for a proper investigation of the concepts in this study as this is also the dominant scope current literature adopts regarding effectuation and psychological ownership as described in Chapter 2.

Table 1 gives an overview of the selected starting entrepreneurs for this study. The fact that they were all connected to StartUp Nijmegen ensured a certain extent of similarity across the start-ups which allowed for meaningful comparisons between the entrepreneurs involved, whilst the diversity in nature of the start-ups provided a reasonable basis for transferability.

Table 1
Selection of starting entrepreneurs

SE (starting entrepreneur) code	Gender	Job function	Industry of the start-up	Start- up age (years)	Start-up size (employees)	Number of founders	Linked at StartUp Nijmegen	Data collection	Duration
SE1	Female	CEO/Founder	Communication service	2,5	1	1	Yes	Interview in person	01:16:03
SE2	Female	CEO/Co-founder	Graphic design service	3,5	5	2	Yes	Interview in person	00:40:27
SE3	Male	CEO/Founder	Retail sector	3	1	1	Yes	Interview in person	00:49:46
SE4	Female	CEO/Co-founder	Concept development	1,5	2	2	Yes	Teams interview	00:36:06
SE5	Female	CEO/Co-founder	Media production	3,5	8	2	Yes	Interview in person	00:43:54
SE6	Male	CEO/Co-founder	Entertainment provider	11	2 (+ flexible freelancers)	2	Yes	Interview in person	00:31:40
SE7	Male	CEO/Co-founder	Retail sector	4	5	2	Yes	Interview in person	00:44:25
SE8	Male	CEO/Founder	Retail sector	3	4	1	Yes	Interview in person	00:33:33
SE9	Male	CEO/Founder	Concept development	6	1	1	Yes	Interview in person	00:50:30
SE10	Male	CEO/Founder	Wholesale sector	9	5	1	Yes	Teams interview	00:29:11
SE11	Male	CEO/Co-founder	Facility services	1	2	2	Yes	Interview in person	00:32:35

3.3 Operationalisation

The quasi-inductive approach of this research combined links to existing theories with the specified guiding principles of data sampling and analysis from grounded theory (Perry & Jensen, 2001). This was done by distinguishing between pre-categories and remaining dimensions. In this paragraph, it will be described how this was structured in this research so that a clear picture emerges of the operationalisation. In Table 2, the operationalisation is presented visually, which additionally shows how the interview questions followed the operationalisation.

3.3.1 Pre-categories

Pre-categories within quasi-inductive research are dimensions based on existing theory. These pre-categories give the researcher insight into several dimensions of the phenomenon to be studied and therefore a “flying start” to the study (Perry & Jensen, 2001). The aim of getting insight into these pre-categories in a quasi-inductive approach is not to perform verifying and theory-testing, but rather to “put them on trial” within a real empirical context for contextual re-specification or refinement. The concepts in this study for which pre-categories were established regard effectuation and psychological ownership. Regarding effectuation, the pre-categories were formulated based on the principles as described in paragraph 2.1.2. Even though the focus of this research was on the effectual logic, the questions in the pre-questionnaire sent out to the participants during the first part of the data collection (see paragraph 3.4) would also reflect principles of causation. This was done to correctly assess to which principles the starting entrepreneur experienced effectuation while measuring within the scope of Effectuation Theory by

also including causal answers as a reference. Regarding the concept of psychological ownership, the pre-categories were formulated based on the main characteristics whereby psychological ownership could be recognized. The debate in literature about the origins of some feelings related to psychological ownership prompted this study to look at the main characteristics on which there does seem to be a consensus. Consequently, the two found main characteristics as described in paragraph 2.2.2 were used.

3.3.2 Remaining dimensions

The openness of the researcher towards new dimensions other than the pre-categories is fundamental (Perry & Jensen, 2001). In this study, the remaining dimensions were established for the concept 'Entrepreneurial behaviour'. This is the concept in this study that was explored for how it is shaped by the combination of effectuation and psychological ownership. As entrepreneurial behaviour is often experimental in nature, this results in the fact that the concept is broad, wide-ranging, and the boundaries are fuzzy (described in paragraph 2.4.2 'Categories of practices in exploring behaviour'). Therefore the remaining dimensions in the operationalisation of entrepreneurial behaviour were the managerial practices as described in paragraph 2.4.2. In quasi-inductive research, the treatment of these remaining dimensions should follow the same procedures as normal grounded theory (Perry & Jensen, 2001). This implies that the managerial practices function as 'searchlights' during the data collection and analysis. This ensured the openness of the research, allowing new theories and insights to emerge from the data. In Table 2 an overview of the operationalisation can be seen.

Table 2
Operationalisation table

Section in quasi-inductive research	Construct	Dimension	Measures in this study	Reference	Questionnaire/Interview Question		
Pre-categories	Effectuation (E) and Causation (C)	<u>Principle 1:</u> View on the future	E: Creative view of the future C: Predictable view of the future	Non-predictive view of the future + Proactively create opportunities Predictive view of the future + Through analysing of the market, seize existing opportunities	Agogu�� et al. (2015) Read et al. (2009)	E: <i>I see the future as something that cannot be predicted. By being proactive myself, I create opportunities.</i> C: <i>I see the future as something that can be predicted. By analysing, I can seize existing opportunities in the market.</i>	
		<u>Principle 2:</u> Attitude to surprise	E: Leverage contingency C: Avoid surprise	Easy change of plans when exposed to change Difficulty in changing plans when exposed to change	Read et al. (2009) Read et al. (2009); Sarasvathy (2001a)	E: <i>If unexpected things come my way, I can easily adjust my plans</i> C: <i>I sometimes see unexpected events as difficult because this implies that I have to change my existing plans.</i>	
		<u>Principle 3:</u> Basis for action	E: Means driven C: Goals driven	Driven by means: knowledge, resources, network + Means depict course of action Driven by predeterminate goals + Goals depict course of action and needed resources	Berends et al. (2014) Berends et al. (2014); Stroe et al. (2018)	E: <i>I am an entrepreneur who first looks at what I already have: for example, knowledge, resources, and connections. Based on that, I decide what I can do best.</i> C: <i>I am an entrepreneur who is driven by the goals I set. Based on that, I determine what I can do best and what I need.</i>	
		<u>Principle 4:</u> Attitude to others	E: Welcoming towards Partnerships C: Competitive view of the market	Partnerships based on sharing knowledge, ideas, and support for start-up Partnerships transactional in nature	Djuricic and Bootz (2019); Read et al. (2009); Wiltbank et al. (2006) Agogu�� et al. (2015); Read and Sarasvathy (2005)	E: <i>Partnerships with my customers and suppliers are based on sharing new knowledge and ideas and are a form of support for my business.</i> C: <i>Partnerships with my customers and suppliers are mainly transactional.</i>	
		<u>Principle 5:</u> View on uncertainty	E: Affordable loss C: Expected returns	Overcome uncertainty by investing little amounts in start-up to overcome tremendous consequences Overcome uncertainty with a detailed plan regarding the highest expected returns	Read and Sarasvathy (2005); Read et al. (2009); Sarasvathy (2001a); Wiltbank et al. (2006) Agogu�� et al. (2015); (Read & Sarasvathy, 2005)	E: <i>I make small investments in my company so that the consequences are not very big when something goes wrong, that gives me certainty.</i> C: <i>I try to minimize uncertainty by having a clearly worked out plan in which I go for what I think will yield the most, which gives me certainty.</i>	
		Effectuation	You have completed a questionnaire about your mindset as an entrepreneur prior to our interview [Repeat the participant's choices if necessary]. Could you give me some more explanation based on what you filled out?[Ask follow-up questions].				

Section in quasi-inductive research	Construct	Dimension	Measures in this study	Reference	Questionnaire/Interview Question
	Psychological Ownership	Business as entrepreneurs’ “baby”	Degree to which start-up feels as starting entrepreneurs’ “baby”	Cardon et al. (2012); Cardon and Patel (2015)	<i>Some entrepreneurs see their company as something of their own, even as “their child”.</i> <i>How do you as an entrepreneur experience this with regard to your start-up?</i>
		Business as part of the identity	Start-up part of starting entrepreneurs’ identity	Pierce et al. (2001)	<i>Do you feel connected as a person to your company, as if it were part of your identity?</i> <i>[Regardless of whether the answer is yes or no]. Can you elaborate further on that?</i>
Remaining dimensions	Entrepreneurial behaviour	Managerial practice: Plan	The planning for their start-up done by the starting entrepreneur	Ates et al. (2013)	<i>Ask about implications for making plans for the start-up.*</i>
		Managerial practice: Do	The running of their start-up done by the starting entrepreneur	Ates et al. (2013)	<i>Ask about implications for running the start-up.*</i>
		Managerial practice: Check	The monitoring of their start-up done by the starting entrepreneur	Ates et al. (2013)	<i>Ask about implications for monitoring the start-up.*</i>
		Managerial practice: Act	The decision-making for their start-up done by the starting entrepreneur	Ates et al. (2013)	<i>Ask about implications for making choices for the start-up.*</i>

3.4 Data collection

3.4.1 Pre-questionnaire

In-depth interviews were the main research instrument of this study. However, before discussing the interview protocol, attention is devoted to describing the pre-questionnaire that participants of this study first received before the interviews took place.

Before the interview, a short questionnaire was sent to the participant (as seen in Appendix B). Beginning with standardised questions allowed the researcher to get an overall ‘lay of the land’ before selecting some themes during the interviews for a fuller exploration (Symon & Cassell, 2012). The aim of the questionnaire was therefore to determine on which principles the starting entrepreneur prefers an effectual logic. This was determined by asking closed questions with predefined answer categories, based on the operationalised “principles” to distinguish causation and effectuation as identified in literature (see operationalisation scheme, Table 2).

The five principles were presented to the participant as questions such as: *“Your view of the future as an entrepreneur. In which statement do you recognise yourself the most?”*. The participant could choose one from two answers, one of which complied with the causal logic and the other complied with the effectual logic. These answers were presented in reverse order to reduce the chance of the participant recognising a pattern. It is noteworthy that the participants were explicitly told there were no possible wrong answers.

Presenting this questionnaire to the participant before the interview had some advantages. First, it gave the researcher an indication regarding to which principles the starting entrepreneur preferred the effectual logic. Second, this questionnaire was shared in advance, which allowed the participant to start reflecting on his/her mindset as an entrepreneur; insights that may have arisen from this reflection could be discussed during the interview and were valuable to the researcher. And finally, an advantage of presenting this questionnaire before the interview took place is the fact that it saved time during the actual interview. This allowed for more time to ask follow-up questions during the interview about the answers given by the participant in the questionnaire, instead of having to ask these “basic” questions on the spot with the risk of losing precious time. Therefore, during the physical interview, the first part consisted of asking the participant whether he/she had any questions or remarks based on the pre-completed questionnaire.

3.4.2 Interview

The main research instrument of this study was an in-depth interview. The interview, more than any other method, allows for the exploration of meaning constructed by the research participants (Kendall, 2008, pp. 133-134). The dialogic nature of interviews allows researchers to see issues from the participants’ perspectives. This made the use of interviews in this study justified, as this study aimed to thoroughly explore the perspective and meaning given by the participants about the studied concepts. The interview contained semi-structured questions. Due to the possible variations in the questions asked by the interviewer (Alvesson & Ashcraft, 2012, p. 239), semi-structured questions contribute to accessing different dimensions of the case, allowing for different viewpoints and deeper insights to emerge (Flick, 2007; Symon & Cassell, 2012). In other words, the interview followed a predetermined path (e.g. suitable for the operationalised concepts of effectuation and psychological ownership), but also provided the opportunity for unpredicted input (e.g. suitable for the more inductive operationalised concept of ‘Entrepreneurial Behaviour’ by means of the managerial practices). Noteworthy, the interview questions are permitted to contain an assumption the researcher holds about the themes in the study (dr. B.R. Pas, personal communication, May 19, 2022). This allows for additional reflection of the interviewees, resulting in extra depth to the study and sharpened conclusions.

Before elaborating on the interview protocol an important consideration needs to be addressed. When the conceptual model (Figure 1) was introduced at the beginning of Chapter 2, the model was given more depth by describing the domain of these concepts. Namely, the concepts of effectuation and psychological ownership are forms of cognition and take place within the mind of entrepreneurs. The concept of entrepreneurial behaviour and the manner in which it was operationalised in this study, through managerial practices, is a form of behaviour and implies what the entrepreneur ‘does’. This distinction between cognition and behaviour was of utmost importance when collecting data for this research. Questions regarding managerial cognition therefore focussed on the thoughts, feelings, and emotions of the entrepreneur. For instance, these questions related to; ‘*How do you feel about...?*’ or ‘*What are your thoughts regarding...?*’. Regarding the concept of entrepreneurial behaviour, questions related to the practices were formulated as ‘*How would you do...?*’ as this would uncover the way an entrepreneur would act. This distinction had been taken care of within the interview questions (see Table 2 and Appendix C).

Regarding the interview protocol, in the first part the participant would be asked if there were any questions related to the pre-completed questionnaire. The researcher had analysed the results of the questionnaire before the interview and knew on which principles the participant had a preference towards a causal logic or an effectual logic. The first part of the interview was devoted to asking follow-up questions about the starting entrepreneurs’ indicated preferences in the pre-questionnaire.

The second part of the interview protocol consisted of questions related to psychological ownership. The aim was to explore whether, to which degree, and how the participant experienced psychological ownership towards their start-up. This was done by asking questions based on the operationalisation of the concept of psychological ownership (see operationalisation in Table 2).

In the third and final part of the interview protocol, entrepreneurial behaviour was explored. After repeating the answers of the participant to the previous questions, the participant was asked about the resulting effects on their behaviour that followed the combination of the two-states-of-mind. In other words, the participant was asked about both the positive and negative implications of the combination of their mindset (effectual logic) and degree of identification with the start-up (psychological ownership). In these questions, follow-up questions were asked related to the operationalised managerial practices (planning, doing, checking, and acting, as presented in the operationalisation scheme in Table 2) to capture their entrepreneurial behaviour in the most exhaustive manner. Also, some follow-up questions were devoted to questioning potential dysfunctional behaviour. As a result, by combining these elements in the interview protocol there was a gradual build-up towards exploring the main research question of this study.

3.5 Data analysis

After the interviews were conducted, data analysis took place. To analyse the data, the approach of thematic analysis was applied. Thematic analysis is said to be a powerful yet flexible method for analysing qualitative data (Kiger & Varpio, 2020). Thematic analysis entails searching across a dataset to identify, analyse, and report repeated patterns (Braun & Clarke, 2006). These repeated patterns can also be defined as themes, abstract entities which involve a greater degree of interpretation and integration of data (Nowell et al., 2017). Whereas the researcher has great flexibility in identifying themes, one should be striving to identify themes that provide important insights that address the research question (Braun & Clarke, 2006). This method is appropriate when seeking to understand experiences, thoughts, or behaviours across a data set (Kiger & Varpio, 2020). In this light

thematic analysis was an appropriate data analysis method in this study, since the effectual logic of the starting entrepreneurs and the feelings of psychological ownership could be characterised as experiences and thoughts, and entrepreneurial behaviour explored via the managerial practices could be characterised as behaviour.

The first step in the thematic analysis process is the familiarisation of the researcher with the data (Braun & Clarke, 2006; Kiger & Varpio, 2020). The interviews were recorded (with permission of the participant, see paragraph 3.7 'Research Ethics' and the consent form in Appendix D) after which they were transcribed. The process of transcription is time-consuming but also serves as an excellent way to become familiar with the data (Kiger & Varpio, 2020). In the second step, initial codes were generated. The researcher used the software ATLAS.ti to support the coding process. Codes were generated for the remaining dimension 'Entrepreneurial behaviour'. These codes were identified following the notion of open coding to remain faithful to the raw data (Gioia & Thomas, 1996). A code should be sufficiently well-defined and demarcated such that it does not overlap with other codes and coded data extracts should include a large enough section of text to provide context for the extract (Kiger & Varpio, 2020). For the pre-categories (effectuation and psychological ownership) it holds that the codes were not generated, but followed the dimensions as identified in the operationalisation scheme. Third, the researcher searched for themes. The codes were examined to look for potential themes of broader significance, which should be independently meaningful but also work together to form a coherent whole (Braun & Clarke, 2006). Fourth, the themes were reviewed. The researcher looked at coded data placed within each theme to ensure proper fit. Throughout this process, the researcher kept detailed notes about the thought process. This is done to bolster the trustworthiness of the findings (Nowell et al., 2017). The researcher then decided if individual themes fitted meaningfully within the data set and whether mapping the themes accurately and adequately represented the entire body of data. This is a recursive process (Braun & Clarke, 2006). Fifth, the themes were defined and named. The researcher created a codebook to provide insight into how this process emerged (see Appendix G). In this stage, data was extracted to be presented in the final report. The themes and the narratives surrounding them acted to explain their importance to the broader story. Lastly, the report was produced. Presenting findings is a 'continuation' of the analysis and interpretation that already happened (Kiger & Varpio, 2020). By using the narrative descriptions and the data extracts (e.g. direct quotations) the report should weave a narrative that provides an argument for why the researcher's explanation richly and fully answers the research question (Braun & Clarke, 2006).

3.6 Research quality

There are assessment criteria that should be met in order to maximise the quality of this exploratory qualitative research (Symon & Cassell, 2012). According to Guba and Lincoln (1989), these assessment criteria entail credibility, transferability, dependability, confirmability, and reflexivity.

3.6.1 Credibility

While internal validity is a crucial criterion for quantitative research during data collection and analysis to determine the best fit between interpretation and reality, qualitative research uses different criteria (Guba & Lincoln, 1989). Qualitative, inductive research values the criterion of credibility, which demonstrates a good fit between constructed realities of respondents and reconstructions attributed to them (Guba & Lincoln, 1989). Therefore, in (quasi-)inductive research terms for validity as 'measuring what one wants to measure' by for instance conducting test interviews is uncommon. Instead, credibility was established in this research by peer debriefing and member checking.

Peer debriefing

Through peer debriefing, credibility is encouraged (Guba & Lincoln, 1989). This was done by discussing this study with Jan van Raaij (CEO of StartUp Nijmegen), J.S. Breet MSc (Assistant professor of Strategy at Radboud University) and dr. A.A.J. Smits (Assistant professor of Organisational Change and Design at Radboud University).

Member checking

Furthermore, credibility was ensured by member checking. Through the process of member checking, the interpretations of the researcher of the interviews are checked throughout the research process (Guba & Lincoln, 1989). By doing this, it was checked whether the researcher had been able to adequately reflect the meaning of the participant. A traditional method for member checking is returning the transcripts to the participants for them to read and correct. However, this method comes with some significant issues. First, the main issue is that it is only appropriate for checking factual data and is not a process that generates deeper opinion or reflection from respondents (Harvey, 2015) and it does not enable the researcher to make claims on the trustworthiness of the subsequent analysis (Birt et al., 2016). Second, it carries the risk of removal of relevant data by participants when they feel they are represented in a negative way, even though the data is factual, correct and key to the analyses (Birt et al., 2016; Carlson, 2010). Third, this type of member checking also requires participants to be interested and put significant time into the research (Carlson, 2010), because reading interview transcripts takes a long time for the respondents and the risk lies in them not responding at all (Harvey, 2015). Due to these issues, an alternative approach to member checking was used in this research. Harvey (2015) proposed a dialogistic interview design; member checking using synthesized analysed data. In this form of member checking, themes and findings of the whole data set are returned to participants so they are given an opportunity to consider whether any of the experiences or perceptions of the others also applied to them. This carries less risk of participant distress as themes are synthesized and conceptualized and the amount of information participants receive is kept brief (Birt et al., 2016). Birt et al. (2016) did however emphasize the main drawback of this method, which is the necessity to perform the whole analysis before data can be returned to participants. As this possibly might take a couple of months, it carries the risks of incorrectness of contact details and losing participants to follow up as they might be unwilling after this time has elapsed. This drawback was however negated within this research due to a limited research scope and short timeline of the project. Therefore, the synthesized member checking method was considered to be appropriate for this research. Following this approach in this research, synthesized member checking was applied in a couple of steps. First, a summary of the main results of the study was prepared using non-scientific wording to engage participants. This form included a clear space for feedback (see Appendix H). Second, the forms were sent to the participants by mail, clearly communicating a return deadline. Thereafter the responses were gathered and added to the data set.

3.6.2 Transferability

Transferability regards the degree to which the results of qualitative research can be transferred to other contexts or settings with other participants. The transferability judgement by the reader of this study will be facilitated by the researcher through thick description (Guba & Lincoln, 1989). By describing not just the behaviour and experiences, but their context as well, these behaviours and experiences become meaningful to the reader of the study. This description of the cases has been elaborated upon in paragraph 3.2 for the reader to determine whether or not the outcomes of this study can be applied to other contexts. Moreover, attention had been devoted to an

extensive description of the problem context, theoretical foundations and research design to establish higher levels of transferability of this study.

3.6.3 Dependability

Another important criterion within qualitative research is dependability, which demonstrates methodological changes and shifts in constructs (Guba & Lincoln, 1989). Dependability relates to the stability of the findings over time. It involves researchers' evaluation of the findings, interpretation and recommendations of the study such that all are supported by the data as received from participants of the study, thereby referring to clarifying how the emergent process of methodological changes and shifts has proceeded while conducting the research (Symon & Cassell, 2012). Dependability was ensured by the researcher keeping a logbook to document any changes in the understanding and meaning of the researcher.

3.6.4 Confirmability

Confirmability relates to the degree to which the findings of the research could be confirmed by other researchers (Guba & Lincoln, 1989). It is concerned with establishing that data and interpretations of the findings are not figments of the inquirer's imagination but are clearly derived from data. In order to achieve a higher level of confirmability, the researcher must clarify how interpretations and conclusions are determined (Symon & Cassell, 2012). This was established by the researcher giving insight into the data collection and analysis process (paragraphs 3.4 and 3.5). Insight was given into how the pre-categories established by the researcher emerged from theory (Table 2), as well as how themes have emerged from the data (see the codebooks in Appendix G). Additionally, the interview transcripts with corresponding codes, as well as the overview from Atlas.ti of all themes and the codes under them is shown in Appendix E. By providing this transparency with regard to the transformation of qualitative data during the data analysis process, confirmability was enhanced.

3.6.5 Reflexivity

During the last decades, reflexivity has become a more prominent and important aspect within the domain of qualitative research. Reflexivity concerns the process of critical self-reflection about oneself as a researcher; one's own biases, preferences and preconceptions, and the research relationship; relationship to the participant and how the relationships affects the participant's answers to questions (Guba & Lincoln, 1989). Reflexivity was properly addressed by keeping a diary where the researcher's conceptual lens, explicit and implicit assumptions, preconceptions, and values were defined and how these affected research decisions in all phases of the qualitative study. In the discussion chapter of this research, paragraph 5.4, the reflexivity is further elaborated upon.

3.7 Research Ethics

The purpose of the study was to ask participants questions about their mindset as an entrepreneur (i.e., their effectual logic), the degree to which they experience their start-up is an extension of their identity (i.e., psychological ownership) and how the combination of these two concepts shapes their managerial practices.

Interviews with the eleven participants were held between the 14th of April and the 6th of May, 2022. The benefits of participation in this study were that the participant might potentially have gained more insight into one's thinking or views on entrepreneurship, entrepreneurial mindset, the degree of personal identification with their start-up, and how this combination shapes their managerial practices. There were no major, significant risks for the participant in this study. Throughout this study, participants were not forced or obliged to participate in the interview. Participants were able to withdraw their participation at any time without penalty. Participation was entirely voluntary. The participant was not required to answer any questions he or she may have found

objectionable during the interview. An audio recording of the interview was made, or both audio and video if this was an online interview. Based on the sound fragment, the researcher developed a transcript that served as input for answering the research question. This transcript was and will not be used for any other purposes.

Regarding the public version of this study, strict confidentiality of the data was upheld. The data was made anonymous; the participants' first and last names were not attached to their responses at any point. The answers of the participants were secured so it is impossible to link the data back to the individuals. The participants were given the opportunity to receive the transcripts and all participants received a synthesized member check form. The final report will remain within the confines of Radboud University. Regarding the confidential version of this report, which is assessed by the examiners (supervisor H.A. Widyanto MBA, dr. ir. N.G. Migchels and the second reader dr. R.A.W. Kok), data of the participants will be visible.

At the beginning of the interview, the participants were given a consent form (see Appendix D) and had the opportunity to read it. In the consent form, the information above was communicated. The aim of the consent form was for participants to provide consent to the public version of the report. The participants were allowed to ask questions and afterwards they were asked to sign the consent form if they agreed to the terms and conditions. In case of any ambiguities or questions, the participants could always contact the researcher, Lisa Kessels, by email.

4. Results

In order to provide insight into the research question: *"How does the combination of an effectual logic and psychological ownership in the mind of the starting entrepreneur shape entrepreneurial behaviour?"* this chapter presents the relevant data based on the eleven interviews with the starting entrepreneurs linked at start-up incubator StartUp Nijmegen. The outline of this chapter is as follows: First, in paragraph 4.1 the results will be discussed with regard to effectuation. Second, paragraph 4.2 will discuss the relevant findings regarding psychological ownership. By drawing a clear picture of the most relevant findings concerning these two concepts separately, a solid foundation is established on which to study the combination of the two concepts. Therefore, in paragraph 4.3 attention will be devoted to describing entrepreneurial behaviour. Here it will be explored how the combination of effectuation and psychological ownership shapes this entrepreneurial behaviour, paying attention to both functional and dysfunctional behaviours.

4.1 Effectuation

This paragraph discusses the findings related to the concept of 'Effectuation'. According to Sarasvathy (1997), the effectual logic is the most dominant logic adopted by starting entrepreneurs in the first stages of the pre-firm. The aim of this paragraph is therefore to assess whether the results of this study are in line with literature; if the starting entrepreneurs in this study indeed had a greater preference towards an effectual logic. Assessing this was the first step toward exploring how the combination of effectuation and psychological ownership shapes entrepreneurial behaviour.

Prior to the interview, the starting entrepreneurs completed a pre-questionnaire (see results in Appendix F). This gave a first indication of the starting entrepreneurs' cognition regarding the preference for either a causal or an effectual approach across the five principles. The pre-questionnaire was a good starting point, however, the preference of the entrepreneur for either a causal or an effectual logic is not that black and white in practice. The preference for a causal or an effectual logic can be painted as a more nuanced picture, whereby it can better be

understood as a gradual scale. The interview data allowed for this nuance and thus these relevant findings will be discussed in the following paragraphs, where they are described for each principle.

4.1.1 Principle 1: View of the future

The results of this study showed that the starting entrepreneurs did not have a predictive view of the future.

"I believe that your actions have certain consequences in the future. But you don't know in advance what those will be. At best, you can sketch an idea. But the reality is usually different." – SE10

"I believe you can't say much about the future. [...] it's impossible to predict it in that respect. As an entrepreneur, you may not want to predict the future at all." – SE6

SE8 reported in the pre-questionnaire that he believed the future could be predicted, implying this entrepreneur would have had a preference towards a causal logic within this principle. However, the interview painted a different picture. During the interview SE8 showed a preference towards an effectual logic by mentioning he did not perceive the future as predictable:

"If a nice opportunity presents itself, I am convinced you have to seize it [...] I think about that fairly pragmatically from day to day, I don't believe in set-in-stone plans. Suppose you have a plan all completely written out, however you never know one hundred per cent what is going to happen in the future." – SE8

Instead of perceiving the future as predictable, the starting entrepreneurs showed a preference towards an effectual logic within this principle by believing in a creative view of the future where they can play an active role in its outcomes. In that sense, the future was perceived by them as malleable where they have confidence in their own ability to create opportunities by themselves.

"I perceive it [the future] as me having an idea and then walking the path myself, without knowing exactly where I am going. I do feel a sort of direction, but I am creating my own work." – SE1

"...I believe you can create opportunities yourself. So don't assume that in the past something was done in a certain way and that this is the good old-fashioned way." – SE11

"[...] I think of it in that way that you actually create your own workplace and your own future." – SE5

For SE4, her preference for an effectual logic within this principle was also expressed when she explained that she believed in the ability of entrepreneurs to create new markets:

"Creating those opportunities [...] that's what I believe I am good at. [...] I think you have to translate that as an entrepreneur into new markets. And while doing this, sometimes you have to kick in doors." – SE4

4.1.2 Principle 2: Attitude to surprise

The results of this study showed that the majority of the starting entrepreneurs mentioned experiencing surprise as a leverage. They stated that when they were confronted with surprises, they take it light-hearted and approach it with optimism.

"I simply think of it [surprises] as going with the flow, recognising them as opportunities and not immediately dismissing them as "this is not my way" and labelling them as bad." – SE3

"I can take that [surprises] easily. And I always say; one door that shut implies another door that opens itself." – SE9

“It [surprises] makes you alert and flexible and I think that is very important as an entrepreneur.” – SE7

The starting entrepreneurs stated that they did not perceive surprises as obstacles to the to-be-executed plan, but rather as a lesson which invited them to do things differently next time. This can be understood as another indication of leverage contingency.

“If it turned out not to be the right choice, then I’ll go down another path. So, you can never go wrong as long as you tried. The worst thing is not trying and never knowing if it would have worked. That is really the worst thing.” – SE1

“Whenever I encounter unexpected things, I always try to think of solutions and see what I have misunderstood. I then try to implement this in everything immediately. Then I have learnt from it.” – SE2

In contrast to these starting entrepreneurs, SE6 opted in the pre-questionnaire that he experienced unexpected events as difficult because this implied that he had to change his existing plans. This answer suggested that this entrepreneur would prefer a causal logic within this principle. During the interview, SE6 was asked about his motivation for his decision in the pre-questionnaire and his words then painted a more nuanced picture. SE6 indicated that he had been through a difficult time as a result of the corona virus because the corona measures had forced him to change his entire business concept:

“I must say, the last two years have been really tough. [...] all of a sudden, Corona came and we had to change our concept in four days. [...] I experienced that as quite heavy. To be honest, I can't cope with change very well. It creates uncertainty. That's also because of how I am as a person, I prefer certainty. If this is the case then you should never become an entrepreneur actually, because in essence it is always uncertain...”

This narrative from SE6 would indeed give the impression of an entrepreneur who seemed to be more driven by a causal logic, as he initially perceived this surprise (the corona virus) as an obstacle and was not welcoming of the required change in his business concept it enforced. This might explain SE6's decision in the pre-questionnaire for a causal logic as the preferred logic within this principle. However, the continuation of the narrative revealed a different picture:

“...but it is also exciting, you know. [...] Corona has brought us a great deal of wealth, which we would never have been able to do if I hadn't said "yes" with 100% confidence. So, I perceive changing plans as being part of entrepreneurship and in the end I think we did pretty well, we can be proud of what we have achieved.” – SE6

This continuation of SE6's narrative revealed that the entrepreneur eventually accepted the corona-situation and committed himself one hundred per cent to the decision to change his business concept completely, with all the positive consequences that this entailed. In doing so, he showed that he used this surprising event to his advantage, which was in line with leverage contingency and thus the effectual logic. This example of SE6 illustrated that the cognition of the entrepreneur, as captured in this study in a causal or an effectual logic, is not black and white and that it could also be argued that this entrepreneur had a preference towards an effectual logic within this principle.

4.1.3 Principle 3: Basis for action

Certain results in this study gave a clear indication for the starting entrepreneurs who prefer an effectual logic within this principle, as these entrepreneurs perceived their means to be the starting point in their entrepreneurial pursuit. For example, SE6 emphasised taking his own competence and expertise as a starting point, rather than being driven by a goal:

“I don't really have a big, hairy, furry goal. [...] I find 'engaging' and 'connecting' very important, I am good at doing this and that is also the reason why I started by business. [...] Of course, the expertise you gain is a great help in this.” – SE6

SE7 also indicated that he did not have a goal and underlined that he worked from the basis of means; the competence and expertise of his team. He also underlined the added value of tapping into his network:

“We do not have really big goals, we are mainly learning [...] we have a wide range of expertise, our team is very highly educated and we are very fortunate in that respect. My network also helps a lot, so I am also lucky that I have a network that is quite large by now...” – SE7

In addition, the words of SE4 also gave insight into the preference for an effectual logic within this principle. She indicated that she took knowledge from her network as a starting point and transformed that into action, illustrating a means-driven basis for action.

“In the beginning, you really have to make do with what you have, and I think we also tried to do as much as possible with the minimal resources we had. [...] Especially when it comes to getting knowledge from your network and continuing that in new steps. I think we have deployed that very firmly.” – SE4

SE1's response explicitly highlighted all three means she used as the starting point upon which her actions were based. She used her network as well as her own competence and expertise:

“If there is a request from a client, I immediately look at my network and who I already know. I immediately start from what is already there and what I can create as a result. So, either through my network or through my own creativity.” – SE1

Some starting entrepreneurs in this study expressed a preference for a causal logic within this principle in the pre-questionnaire. They indicated that they saw themselves as entrepreneurs who were driven by the goals they set and that this determined their basis for action. This applied to the entrepreneurs SE5, SE9, SE10 and SE11. During the interviews, they were asked about their motivation for this choice. The results showed that only SE10 had indeed a preference for a causal logic for this principle, being goal-driven in his entrepreneurial pursuit. He stated:

“I set a concrete and measurable goal, which is realistic. Then we collect the components that we think are necessary to achieve that goal. Who is going to do it? How much time do we have? What resources do we need? That actually comes afterwards, I first set the goal.” – SE10

Nevertheless, the answers from the starting entrepreneurs SE5, SE9 and SE10 showed a more nuanced picture. On the one hand, these entrepreneurs explained that they indeed had a goal and were driven by it, which could explain their choice of the causal answer-option in the pre-questionnaire. On the other hand, however, the goal which drives them was not a goal based on the market, as should be in the case of a causal logic, where this goal would come about through a comprehensive analysis of the environment and which is pursued as efficiently as possible. But, their goal was a personal goal that stemmed from what they themselves found important:

“The goals are clear and we know where we want to go. But that is not necessarily to generate the most turnover, but to a large extent to achieve personal goals such as being socially responsible. [...] The way we go towards those goals is flexible and we work from what we can do with the resources we have.” – SE5

“My biggest goal is to have the freedom to just do what I like full time and develop products. [...] That inventing process I perceive as an extension of myself and who I am. And every time, through conversations with the right people, you are given a little guidance.” – SE9

“I am driven by goals, but for me "goals" is more about the very high intrinsic motivation I get when I want to achieve something myself. If I am convinced that I can change something or make a difference somewhere, then I will commit myself to it. That is the basis on which I started my first company [...] that is what drives me.” – SE11

In this light, it could be argued that these entrepreneurs were driven by the mean ‘Who Am I?’ as their personality was reflected in the goal they had. This may imply that they nonetheless had a preference for an effectual logic within this principle.

4.1.4 Principle 4: Attitude to others

The results of this study showed that the majority of the starting entrepreneurs were convinced that partnerships are of importance. Their partnerships were not limited to being only transactional in nature, but the entrepreneurs indicated the nature of the partnerships to be characterised by knowledge sharing and thereby learning from one another. This is an indication of a preference towards an effectual logic within this principle.

“I am very good at recognising the qualities and talents of others and very good at knowing what my talents are and what my talents are not. [...] I want to grow and I consciously look for people who are more advanced in what I want to achieve in order for me to learn.” – SE1

“I think that a good interaction and relationship with your client means that you can exchange a lot of information and learn a lot from each other. [...] Also mentors and coaches, for example, are very helpful. It is always nice to talk to them.” – SE11

“We engage in many structural partnerships [...] in which we are very focused on knowledge sharing.” – SE5

“I work quite closely with [partner] [...] the nice thing is, they are very familiar with the industry, so they can advise and assist me. [...] we have become quite intertwined. I count on them.” – SE3

SE4 also indicated that she did not believe in competition, which was also an indication of a preference for an effectual logic within this principle:

“When I look at myself as an entrepreneur, I am someone who likes to make contact and does that easily. Creating openings and winning trust, that's what I'm good at. [...] In that sense, I don't really believe in competition.” – SE4

Some starting entrepreneurs in this study opted in the pre-questionnaire for an attitude to others that corresponded to causation; Partnerships with my customers and suppliers are mainly transactional. This applied to the starting entrepreneurs SE6, SE7, SE8 and SE10. During the interviews, they were asked about their motivation for this decision. The results showed that starting entrepreneurs SE7 and SE8 had indeed a preference for a causal logic with regard to this principle, their partnerships were mainly transactional in nature.

“Here at StartUp Nijmegen we have [name of other start-up] and I do consider them a partner, we do quite a bit together. But, it is quite transactional [...] we buy hours from them on invoice and they work for us.” – SE8

“I believe ultimately it's all about transactions. [...] So, transaction is really the basis of our relationship.” – SE7

Whereas SE6 indicated in the pre-questionnaire that his partnerships were primarily transactional in nature, his statements during the interview painted a more nuanced picture. After all, it seemed from the entrepreneur's words that he saw partnerships as more than a transaction. For example, he was convinced of the importance to help his partners in times of need and valued checking upon partners to discuss if they were still content with the partnership. This reasoning seemed to be closer to an effectual logic than a causal logic within this principle.

“I love collaboration [...] It is one of the core values of me as a person. [...] For example during corona, I believed it was important to give [big amount of money] to our partner restaurants and bars to help them. [...] Also, when it comes to collaborations, I value conversations with my partners: Are they still into it? Are they satisfied with the partnership?” – SE6

SE10 also indicated in the pre-questionnaire that his partnerships were primarily transactional in nature. Again, for this entrepreneur applied that his statements during the interview painted a more nuanced picture. This entrepreneur seemed to be looking to share knowledge within the partnership with StartUp Nijmegen, which gave the impression that this entrepreneur was also leaning more towards an effectual logic within this principle.

“I am happy with my partnership with StartUp Nijmegen so that I can ask other entrepreneurs for advice, I learn from them. [...] For example, I have another entrepreneur who is very different than I am, and I call him up sometimes to see how he deals with certain things. I know that he will give me a completely different idea than I would have. I do that intentionally to stimulate my own ideas.” – SE10

4.1.5 Principle 5: View on uncertainty

The results of this study showed that for the majority of the starting entrepreneurs, their view on uncertainty was in line with the effectual logic. For example, the starting entrepreneurs indicated that they made small investments in their business so that there were no dramatic consequences if things turned out to be wrong.

“[...] I never make very large investments. Always just take it slow, small steps, don't get too carried away.” – SE7

“I do it all on my own finances. If I were to use external capital to invest, in theory I could grow faster and make bigger steps. But, I consciously choose not to do that [...] with bigger financing comes more risk.” – SE10

Some of the starting entrepreneurs in this study mentioned that they were in favour of bringing a prototype of their product to the market quickly. By doing this, the points for improvement were revealed at an early stage in the product development process which allowed for the necessary iteration steps to be taken quickly. This was in line with effectuation as it aimed at market penetration with the minimum amount of loss of resources.

“I like fast trial-and-error because if you fail quickly you have incurred fewer costs and you can still adjust if it does not work.” – SE4

SE9 also mentioned during the interview to be in favour of only investing small amounts and bringing a prototype to the market quickly, even though this entrepreneur had marked his preference in the pre-questionnaire for a causal answer.

“Rather than thinking in detail about everything before making my product, I am more in favour of not thinking too long and just making something cheaply. By doing that, you have something tangible and you can always adjust it. [...] I'm also cautious about taking on big financial responsibilities and getting deeply involved in such things. I prefer to make small investments.” – SE9

Starting entrepreneurs SE8 and SE11 both reported a preference for a causal logic in the pre-questionnaire within this principle, claiming that they tried to minimise uncertainty by having a clearly worked out plan in which they believed in what they thought would generate the most return. For SE8, this decision in the pre-questionnaire indeed corresponded to what he mentioned during the interview. Previously, he used to only invest small amounts of money and would only invest what he could afford to lose. However, since the start-up now had an investor, this was no longer necessary and his preference had shifted towards a causal logic whereby he was focused on making plans that would yield him (and the investor) the highest returns.

“I used to make small investments. I started from my own savings [...] I never bought for 10,000 euros at once. It was always, whatever was necessary, I bought. But, now it's changing because I can make a lot of big investments, because of the investor.” – SE8

As for SE11, during the interview this entrepreneur indicated that he indeed had a clear plan for dealing with uncertainty, which could explain his choice for the causal answer category in the pre-questionnaire. However, during the interview it became clear that this plan of his was not related to expected returns and upside potential, as causation concerns, but the plan was rather focussed on the minimal use of financial resources. By talking to his network and by doing so validating his ideas, he dealt with uncertainty and simultaneously did not have to make large investments. The impression this result gave was that this entrepreneur had a preference for an effectual logic within this principle.

“[...] I make this plan, this seems the most feasible. Then I test it [...] to see if it works and if it appeals to my target audience. Will they buy it? If not, why not? If yes, why? This validation gives me certainty.” – SE11

In conclusion, this paragraph presented the relevant results based on the interviews regarding the preferences of the eleven starting entrepreneurs towards a more causal or an effectual logic across the five principles. The majority of the starting entrepreneurs' answers clearly showed a preference for the effectual logic. For some of them, the interviews painted a more nuanced picture with regard to their preference. Namely, whereas they had indicated a preference towards the causal logic in the pre-questionnaire, their answers during the interview gave more indication of a preference towards an effectual logic. For only a few starting entrepreneurs it was true that for a particular principle they preferred causation. However, even for these entrepreneurs held that when considering all principles, their preference was leaning more toward an effectual logic. Based on these findings, it can be concluded that, in general, the starting entrepreneurs in this study showed a greater preference for an effectual logic than a causal logic. This insight leads to the following proposition:

P1: The starting entrepreneurs in this study generally have the tendency to prefer an effectual logic over a causal logic.

4.2 Psychological Ownership

This section discusses the findings related to the concept of ‘Psychological Ownership’. According to Pierce et al. (2003), starting entrepreneurs are more likely to experience feelings of psychological ownership as they invest time, ideas, unique knowledge and their personal style in the creation of their start-up. Through this creation process, the individual invests themselves into the object, making the probability to develop feelings of psychological

ownership higher (Pierce et al., 2003). The aim of this paragraph is therefore to assess whether the results of this study were in line with literature; if the starting entrepreneurs in this study indeed experienced feelings of psychological ownership. Assessing this was the second step toward exploring how the combination of effectuation and psychological ownership shapes entrepreneurial behaviour.

The results of this study based on the interviews showed that some entrepreneurs did not experience feelings of psychological ownership. For example, SE7 viewed his company more as ‘just a business model’. This created a distance with regard to himself and his start-up and therefore a lower degree of identification. The same applied to SE8, who did not experience a strong degree of identification with his start-up. He emphasised that he did not see himself working for his company for the rest of his life and would like to sell the start-up at some point. This illustrated the distance he experienced in relation to his start-up and thereby a lesser perceived degree of psychological ownership.

“I wouldn't say that it [the start-up] feels like my baby [...] for me it is just a business model.” – SE7

“If I would say it feels like my baby, that would mean that I would be working here for the next forty years. That is not necessarily the case. I would prefer if it would grow fast for the next five years and then I sell it.” – SE8

However, the data showed that most of the starting entrepreneurs in this study did in fact experience feelings of psychological ownership; they experienced the start-up as ‘part of them’ as it was perceived as part of their identity. For some entrepreneurs, the start-up felt like their ‘baby’. This stemmed from the strong connection they felt with their start-up. They did not feel like they worked just as owners of the start-up, but they were the start-up and the start-up was them.

“Because I am the company, that's what it comes down to. [...] Conversely, I think it is not possible to see the company separately from me. [...] I am the company, I determine the quality and what happens.” – SE3

“Because in some way I am my company, you know? I mean, I work for myself, am self-employed. Without me, there is no business. So, in that sense, I do identify with it.” – SE1

“At a certain point, you identify with everything that has to do with it [start-up of SE6]. [...] Because it is a part of you. [...] this company is MINE and I built it. [...] You put your heart and soul into it, besides time.” – SE6

“The fact my start-up allowed me to introduce things I invent to the market and that it works out, that is part of my identity.” – SE9

The finding that the starting entrepreneurs identified themselves with their start-up was not an isolated fact. The data showed that many starting entrepreneurs attached importance to this identification. For instance, because it put them in a special kind of working flow, or this gave them feelings of self-confidence or motivation that would otherwise be absent:

“If a company is really an extension of your identity, then you get into a certain flow and then it doesn't feel like work anymore. I had this very strongly with my previous companies, which I ran on my own. My other companies became successful quite quickly.” – SE4

“If you identify with your company, then you really stand for it. [...] It is just MY idea. [...] Wherever you go, you talk about your company. I think it ensures that you can talk about your company with confidence and that you ensure that your company gains brand recognition. It makes that you actually overcome

things and like to talk about them because you want to talk about them. [...] I think if you don't identify with your company, then you miss a certain piece of motivation.” – SE11

An illustrative example of psychological ownership was demonstrated by the case of SE1, who had named her company after her first name. The fact that she gave her start-up the same name as her first name was a clear example of identification with her own start-up. SE1 underlined the value in doing so:

“The name, [first name of SE1], is a first name that does not appear very often and also says something about me as a person. I also approach the communication-related work I do for my customers from a very personal point of view. It's actually my personal brand [...] I don't have to separate my company from myself. People choose me, they want to work with me. There is no one who does the work the way I do it.” – SE1

The finding that the feeling of psychological ownership was present for these starting entrepreneurs, was given extra depth by the data revealing some of them experienced their own start-up as their ‘baby’.

“It [the start-up of SE2] is your baby, I always like to be involved with it. [...] You are always working on it. It is not once as if it is not there.” – SE2

“I already have two children and it [the start-up of SE5] does feel like a third baby, yes. You are working on it day and night.” – SE5

“I became a father in the same year that I started my business. So I have a point of comparison. [...] It [the start-up of SE9] does feel like a kind of child. At first it is just an idea and then you see it grow and grow.” – SE9

It can be concluded based on these findings that the entrepreneurs would answer the question “*What do I feel is mine and a part of me?*” with “*my own start-up*”. Therefore, it can be stated that the majority of the starting entrepreneurs in this study experienced feelings of psychological ownership. This insight leads to the following proposition:

P2: The majority of the starting entrepreneurs in this study experience feelings of psychological ownership in relation to their start-up.

4.3 Entrepreneurial behaviour

In this final paragraph, the findings will be discussed related to the concept of ‘Entrepreneurial behaviour’. This paragraph aims to explore how the combination of effectuation and psychological ownership shapes entrepreneurial behaviour. To adhere to this aim, the behaviour of the starting entrepreneurs who both were found to prefer an effectual logic as well as were found to experience feelings of psychological ownership –thus had the combination of the two states-of-mind– will be examined. These starting entrepreneurs were respectively SE1, SE2, SE3, SE4, SE5, SE6, SE9, SE10 and SE11. Since SE7 and SE8 were found not to experience psychological ownership, these entrepreneurs were considered to be outside the scope of this research and consequently their behaviour will not be described. Doing this posed the limitation of not having a baseline for the group of starting entrepreneurs who did have both states-of-mind, as there was no other group to which their behaviour could be compared with. Consequently, their behaviour could be explored but not explained. This limitation will be discussed in paragraph 5.3. However, the decision to only examine the group of entrepreneurs who in fact had the combination of the two concepts is true to the scope of this study.

In the following two subparagraphs, the behaviour of the starting entrepreneurs who have the combination of effectuation and psychological ownership will be categorised into functional and dysfunctional behaviour. Their behaviour was classified as functional when it was in line with the behaviour that would suit a successful implementation of the effectual logic (according to literature). Subsequently, their behaviour was classified as dysfunctional when it was not in line with the behaviour that would suit a successful implementation of the effectual logic (according to literature). These two subsections regarding functional and dysfunctional behaviour are given substance by the findings obtained in the interviews, where questions were asked related to their managerial practices in order to gain insight into their behaviour in practice. These findings were obtained inductively and therefore, regarding conformability, the codebooks have been added to the appendix to provide transparency (see Appendix G).

4.3.1 Functional behaviours

The first functional behaviour of the starting entrepreneurs in this study was found to be ‘ensuring an open vision’. This implied that the starting entrepreneurs were conscious about keeping the path towards the future open and flexible for their start-up.

“For me I do it [running the start-up] intentionally very flexible [...] I quickly switch my choice and I try to anticipate the moment.” – SE11

Specifically, to ensure this flexible and open future for their start-up, this meant that the starting entrepreneurs consciously avoided decisions which would lead to a future where its course was fixed. They embraced an undefined path towards their goals and accepted the uncertainty that inherently came with that. With regard to planning-related activities, this meant that they developed open plans for the start-up where they intentionally left room for flexibility. They avoided detailed plans where everything was cast in stone.

“Being stuck in a framework of tight plans doesn't fit me at all. That kind of control over the company, I rather shun, I feel it is a kind of threat to my authentic input. [...] What I rather do is improvising on the spot...” – SE3

“I sometimes make plans, but I prefer to remain open and respond to the situations that emerge and the opportunities that are present.” – SE5

“I don't make detailed plans [...] when I have an idea I go follow my own path without knowing exactly where I am going [...] I'm ultra-flexible in that respect and I really enjoy that. I can truly go with the flow.” – SE1

In order to ensure an open vision, SE9 stated that he did not make plans at all.

“I did have a business plan, for instance, but I don't make them anymore. What is the use of such a plan? [...] I want to keep as much freedom as possible for as long as possible to benefit from surprising things.[...]” – SE9

What also emerged from the data was that the starting entrepreneurs did not monitor their start-up based on strict measures, for instance KPI's. Instead, they managed to ensure this open vision toward the future by monitoring the start-up using more vague and abstract measures, such as their gut-feeling.

“I haven't really put a number on it [monitoring the start-up], I think it's a matter of feeling.” – SE9

“When assessing how [start-up of SE5] is doing, we really do take the general mood into account, because we really are gut feeling listening entrepreneurs.” – SE5

"In order to determine if we are still performing, then I will indeed take my core values and put them alongside." – SE6

"I mainly look at whether I still have faith in it, that is more and more becoming my measure of how the start-up functions." – SE3

The starting entrepreneurs were found to embrace the fact that they had no idea what would happen next. In their decision and planning activities, they ensured to keep an open vision towards the future. This made them flexible and open to all possible scenarios and the opportunities that came their way.

The second functional behaviour of the starting entrepreneurs in this study that emerged from the data was them 'experimenting confidently'. During the interviews, a picture emerged of the starting entrepreneurs running their start-ups mainly by experimenting. In the beginning of their entrepreneurship, this experimental behaviour allowed them to discover their own 'modus operandi' in running the business, as they have found this to be a quest.

"That [finding the own modus operandi] was a quest at the beginning of my entrepreneurship. [...] I knew what I wanted to do as a job, but really how I wanted to work and how I would come out best, that was experimenting." – SE1

"At that time [initial phase of the start-up] we were in a quest of what kind of company we are and how it all works, the involvement in entrepreneurship. [...] You have to find your own path." – SE5

However, not only in the very beginning of the start-up did the starting entrepreneurs run their start-up based on experimentation, but their current behaviour in running the start-up could also be characterised as experimental.

"...I do it [running the start-up] like zigzagging from one place to another." – SE9

"You have to follow your feelings and just do it. You just have to do it, because then you can see if something was a really bad idea or this was great and we will continue like this. I can ponder for a long time, but it's also about speed. Better to just take a leap of faith." – SE2

"You are bombarded with all kinds of theories, models and business books about how you can make your product successful. But I'm a big believer in staying close to yourself and just experiment." – SE4

The quotes illustrated that the starting entrepreneurs ran their start-up on an experimental basis. Additionally, during the interviews follow-up questions were asked to gain a more comprehensive understanding of the experimental way these starting entrepreneurs ran their start-up. By doing so, the understanding emerged that their experimental behaviour was rooted in confidence; the confidence that if a problem would present itself in the future, they would be capable of dealing with it at that very moment.

"If I encounter a problem, I think: 'ok, this isn't working, this isn't going any further, let's go back to the drawing board, we'll turn the ship around and come up with something new.' So, don't keep trying if it doesn't work. There are 101 opportunities to try something." – SE11

"I act out of confidence [...] In times of trouble, you always come up with something which can help you. Try to keep the faith that it will be all right." – SE6

"Yes, there were numerous challenges we had to overcome each time. [...] But, one can anticipate everything up to a certain point. [...] That is what we did. Trial and error and if it doesn't work then we try something new." – SE4

"When problems arise or things don't work out, I have confidence that it can be eventually solved. If you solve it well, it will all be OK again." – SE2

The starting entrepreneurs experimented with confidence because they were convinced they could handle whatever problems might present themselves in the future. The statement from SE11 added to that by indicating why it was important to keep experimenting and had confidence while doing it:

"Sometimes it is good to stand firm. Many people think: 'This won't work', but that's often what they say when it's something new. All the big companies and all the new technologies have gone through a phase where they heard from others: 'I don't believe in you' or 'This isn't going to work, you shouldn't do it'. Then you've always had some lunatic saying, 'I'm going to keep doing it anyway', which makes it work."
– SE11

Furthermore, the quote of SE5 illustrated what could be achieved when an entrepreneur dares to experiment confidently; it took her out of her comfort zone and made her experiment with networking. Networking was something she would not normally be eager to do. By experimenting with confidence, SE5 was able to try something new, which could potentially benefit both her and the start-up.

"For example, I really hate networking and sales, I find that quite difficult. But, because I believe in [name of start-up] so much, I actually started doing that at a certain point. Just do it. But, I had to take some steps outside of my comfort zone to do that. [...] Now networking comes easier to me and we do it more often." – SE5

The starting entrepreneurs were found to have a fundamental faith in their ability to control the future by acting upon it as situations emerged and having the confidence in themselves they could deal with problems as they presented themselves. This made them able to reap the benefits of new markets because they dared to step outside the beaten path.

To conclude, ensuring an open vision and experimenting confidently were behaviours that emerged from the interviews with the starting entrepreneurs in this study. These found behaviours were labelled as 'functional' as they are in line with the behaviour that literature states to be required for the successful implementation of the effectual logic. Namely, literature has stated effectual entrepreneurs need to ensure to leave multiple paths open in order to allow them to align with new, unexpected situations with potential undiscovered value (Berends et al., 2014; Laskovaia et al., 2022), and they should be experimenting in order to find a business model that works (Chandler et al., 2011) whereby the conviction of their own competence helps increase firm performance through effectuation (Coudounaris & Arvidsson, 2021). This made the two found behaviours in this study labelled as 'functional'. This leads to the following proposition:

P3: The functional behaviour of the starting entrepreneurs who both have a preference for an effectual logic as well as having feelings of psychological ownership takes shape by them ensuring an open vision and experimenting confidently.

4.3.2 Dysfunctional behaviours

The first dysfunctional behaviour of the starting entrepreneurs in this study that emerged from the data was them 'pursuing exclusive control'. This behaviour was rooted in the conviction of some starting entrepreneurs, who seemed to believe that only they themselves were the right person to run the start-up. Because they considered only themselves in a position to know what was best for their start-up, subsequently the behaviour that follows

was them pursuing exclusive control of the start-up where they wanted to keep the running of the company solely in their own hands.

"I already see plenty of opportunities and ideas by myself, I don't need others'. So, if you try to direct me; I have been learning to direct myself for 44 years, please just let me take the wheel." – SE1

"I've always wanted to do it myself, because you think you can do it better yourself." – SE10

"I already think so thoroughly myself about the things I do for my business, therefore I can skip that feedback from other people." – SE2

"I'm a one-man-show for a reason, I do it myself as much as possible. [...] the reason the business actually works, well I have to say, that's because I do it and not because someone else does it." – SE3

As a result, these starting entrepreneurs found it difficult to let go of control. Especially when they started hiring staff, as that implied letting go of control and laying responsibilities in the hands of others. They seemed to find it difficult to delegate work to their colleagues and as a consequence they mentioned sometimes falling prey to behaviour which resembled micro-managing.

"It's so hard to let go of control when colleagues come over. In the beginning I was heavily micro-managing and wanted to control everything." – SE5

"In the end I always think I know better myself, this is how I have always done it and how I do it is what works the best. [...] So, especially in the beginning, I checked everything they [staff of SE2] did." – SE2

"When I am on holiday, I find it difficult to let go of the work and leave it to my colleagues. [...] It's hard for me to really switch off then and not check my e-mail or take certain phone calls." – SE6

"As the person in charge, you want to keep that control to quite some extent. [...] They [staff of SE11] have to let me know what has to be done and what they are going to do. [...] If it doesn't happen quickly enough or properly enough, then I wonder: 'Why doesn't that person put in the effort as I would have?' That makes me doubt and wonder whether I shouldn't do it myself." – SE11

Additionally, it was found in this study that for certain starting entrepreneurs, their pursuit of exclusive control did not seem to be something that had slipped in, but something for which they had made a conscious decision. Noteworthy in this regard were the statements of SE1, SE3 and SE9. These starting entrepreneurs had consciously decided that their start-up was and would be remaining within their exclusive control. This decision led them to not hire any staff to keep the start-up small and manageable, as this allowed them to keep it close to themselves.

"I'm doing it on my own and I'm going to keep doing it alone. [...] That is a very conscious choice, yes. I have absolutely no ambition to grow. I just really want to do my own thing. Yes, look, my revenue may grow, yes, but I want to be able to work on my own terms and in the way I want to work." – SE1

"As long as that company is a little bit bigger than you, you are the pivot, it remains very manageable. [...] When it grows, it means I have to do all sorts of unpleasant things which I hate. [...] That means quantifying things and also making concrete plans, and those are precisely the things that I avoid. Because it [the start-up] is my own, pleasant, mid-life crisis. [...] I'm doing it very safely now, step by step, and that's just going to take a long time, but well, the upside is, there was never any ambition to become a successful business anyway." – SE3

"That's actually something I decided for myself right from the start; I don't want to get too deeply involved in anything as long as necessary. As it looks now, I don't want to employ staff, even if I grow. Then I'll look for other ways to manage it. [...] Looking for an investor and going for it the first month with a bang, yes, that would have been an option. But then you gave away certain freedom. By spreading it out a bit

longer and doing a lot by yourself, you still keep more of a say. [...] I want to keep as much freedom as I can for as long as I can.” – SE9

As became clear based on the statements of these starting entrepreneurs, the drive to pursue exclusive control over the start-up was of such great importance for them that they were convinced that maintaining this was the ‘best’ for the start-up, over growth.

The second dysfunctional behaviour of some starting entrepreneurs in this study was found to be ‘acting territorial’. This territorial behaviour of some is best described as a stronger form of pursuing exclusive control, whereby these specific starting entrepreneurs were very protective towards their start-up and tend not to let others in.

“It [the start-up] is so personal that sometimes no one is really allowed to touch it.” – SE2

“I am reluctant to let others in [to the start-up].” – SE3

“I hate it when people think they can take my place. [...] We are the experts here. I always hate it when people think they can take my place and they think to know better than me.” – SE6

In particular, an incident shared by SE1 illustrated that this entrepreneur showed strong territorial behaviours towards the start-up:

“This man had a personality type that I really have a knack for and that I don't want anywhere near me. [...] I felt that this was someone who was using me for his own ends and who was dictating me how I should do business. [...] Yes, and then I become a tiger. Like, no, I am me and you're not going to change me! That was very intense. [...] When someone tells me I should do things a certain way, I just think: ‘It's my business, I decide’. That's very true for me. [...] So I don't really accept it either.” – SE1

This situation of SE1 showed she felt attacked when an external person prescribed how she should run her start-up. She accordingly showed territorial behaviour in order to protect her start-up against this external influence.

The third and final dysfunctional behaviour of the starting entrepreneurs in this study revealed from the data was ‘striving for perfection’. It was found that some of them set the bar high in terms of how they ran their start-up and the decisions they made. They monitored the start-up based on their own high standards.

“So, sometimes I might set the bar too high but that is a good thing, because that way quality always prevails. Because that's what I always strive for, quality.” – SE6

“The work I do has to be impeccable. I fear perfectionism is simply in my system.” – SE3

“I can be very focused on details that I later admit did not make sense.” – SE2

“I am very perfectionistic [...] I know so well what I want for [name start-up SE5]. If I feel that we are giving 98% instead of the 100%, I find it difficult.” – SE5

The consequence of striving for perfection was that some entrepreneurs mentioned taking longer before making decisions.

“[...] that is a trap, thinking too long about what could possibly be better.” – SE9

“[...] that might make you simmer for longer before you make a choice.” – SE10

During the interviews, these starting entrepreneurs were asked the reason behind their tendency to strive for perfection. It became clear from their answers that the underlying reason for this behaviour was that they wanted their business to do well because that also implied that they themselves were feeling well.

“You always want to make 100% sure that things are going well. [...] that's because I identify with my business and you want it to go well.” – SE6

“[...] yes, I identify with my company. Because you just want to achieve certain goals, you just want it to work. It's just MY idea.” – SE11

“I think if it was someone else's business, I could easily hit the brakes. [...] But now it's about MY business, my passion. So, you just want things to go well, also for myself.” – SE3

“I am someone who prefers to keep going and I have the tendency to drive everything to the point of exhaustion. [...] I know about myself that what underlies this behaviour is that I always want to kind of prove myself. If my business is going well, then I personally get some value out of that too.” – SE4

These answers underlined the interconnectedness between the starting entrepreneurs as individuals and their start-up, as they themselves were feeling well if their start-up was doing well. This made them go the extra mile for their start-up. Another reason behind their striving for perfection which became evident from the interviews was that some entrepreneurs wanted to perform as well as possible to avoid criticism from others related to their start-up. Namely, they stated that they tended to take feedback from others as criticism, which to them felt like a personal rejection.

“Sometimes I do feel personally rejected when receiving criticism, because you put your heart and soul into your business.” – SE6

“If you put all your love and energy into a super cool design and a client is not happy, then it really is something personal.” – SE2

“We sometimes receive criticism from customers and I really take that to heart. It almost feels like a sort of personal criticism. [...] It does affect me.” – SE5

“I would feel offended if people said my work was sloppy. I find that very unpleasant, it also affects me personally [...]” – SE3

To conclude, pursuing exclusive control, acting territorial and striving for perfection were behaviours that emerged from the interviews with the starting entrepreneurs in this study. The starting entrepreneurs only saw themselves as the best-designated person to run the start-up, which made them reluctant to admit others (e.g. colleagues) and were less receptive to their input. In more extreme cases they were not willing to sacrifice control and were protecting the start-up against the influence of external parties. They rather preferred to set the bar high for themselves, strive for perfection and some mentioned taking a considerable time making decisions. These found behaviours were labelled as ‘dysfunctional’ as they conflict with the behaviour that literature has described is required for the successful implementation of the effectual logic. Namely, literature stated effectual entrepreneurs are required to involve in interactions with others as their learning curve is established by confronting their initial perceptions with the perceptions of others (Dew et al., 2009; Djuricic & Bootz, 2019; Sarasvathy, 2001b). They furthermore need to personally persuade external parties to create a feasible set of contracts to create partnerships based on complementary competencies that help them achieve their goals (Read et al., 2009; Sarasvathy, 1997) and they are then often required to sacrifice control to gain access to external resources (Wasserman, 2008). Also,

effectual entrepreneurs need to adapt quickly and have a high decision speed to make the most out of unforeseen circumstances (Shirokova et al., 2021; Wu et al., 2020). This made the three found behaviours in this study labelled as ‘dysfunctional’. This leads to the following proposition:

P4: The dysfunctional behaviour of the starting entrepreneurs who both have a preference for an effectual logic as well as having feelings of psychological ownership takes shape by them pursuing exclusive control, acting territorial and striving for perfection.

4.4 Adjusted conceptual model

The propositions proposed in the previous paragraphs, and thus the main findings, are summarized in Table 3. The propositions are visualised in the adjusted conceptual framework in Figure 2.

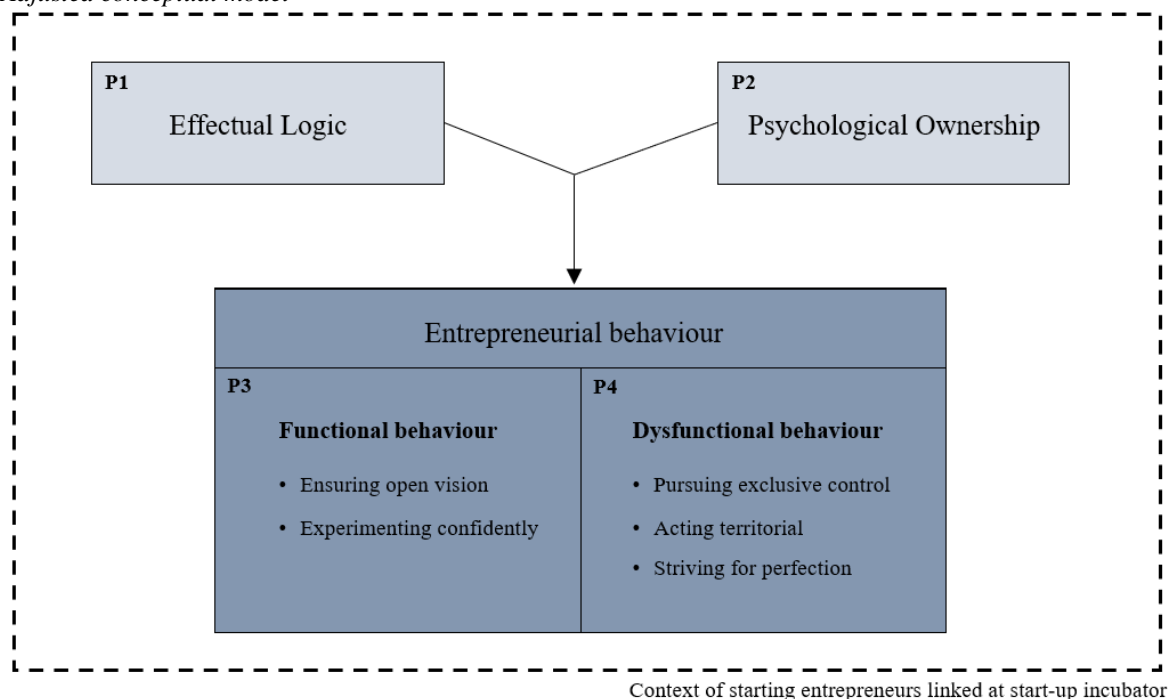
Table 3

Overview of the formulated propositions

Overview of the propositions based on the results	
P1	The starting entrepreneurs in this study generally have the tendency to prefer an effectual logic over a causal logic.
P2	The majority of the starting entrepreneurs in this study experience feelings of psychological ownership in relation to their start-up.
P3	The functional behaviour of the starting entrepreneurs who both have a preference for an effectual logic as well as having feelings of psychological ownership takes shape by them ensuring an open vision and experimenting confidently.
P4	The dysfunctional behaviour of the starting entrepreneurs who both have a preference for an effectual logic as well as having feelings of psychological ownership takes shape by them pursuing exclusive control, acting territorial and striving for perfection.

Figure 2

Adjusted conceptual model



5. Conclusion and discussion

5.1 Conclusion

This study aimed to explore how the combination of effectuation and psychological ownership in the mind of the starting entrepreneur shapes entrepreneurial behaviour. Eleven interviews were held with entrepreneurs linked at start-up incubator StartUp Nijmegen. The results show that the starting entrepreneurs in this study generally have the tendency to prefer an effectual logic over a causal logic. Furthermore, the majority of the starting entrepreneurs in this study experience feelings of psychological ownership in relation to their start-up. The exploration of the behaviour of the starting entrepreneurs with both an effectual logic as well as having feelings of psychological ownership, revealed functional and dysfunctional behaviour. The functional behaviour takes shape by them ensuring an open vision and experimenting confidently. These behaviours are beneficial in successfully implementing the effectual logic. The dysfunctional behaviour takes shape by them pursuing exclusive control, acting territorial and striving for perfection. These behaviours are in turn hindering the successful implementation of the effectual logic.

5.2 Theoretical and Practical Implications

The insights derived from this research create a better understanding of how the combination of an effectual logic and the presence of psychological ownership shapes the entrepreneurial behaviour of starting entrepreneurs. Current literature has focussed on the concepts of effectuation and psychological ownership as two separate concepts, giving insight into how each concept individually influences entrepreneurial behaviour. However, without considering how the presence of both concepts in the mind of the entrepreneur shapes it. This research explored these concepts when simultaneously present. It suggests that taking both the effectual logic and psychological ownership into account is important as this combination gives additional profound meaning to the behaviour of starting entrepreneurs as we understand it to date. The following points will discuss the key findings in further detail and demonstrate their theoretical and/or practical implications.

First, the fact that this study found dysfunctional behaviour confirmed the concern expressed in the problem statement during the initial stage of this study. Namely, the indication found after comparing the literature that the implications of effectuation and psychological ownership seemed to clash, potentially having negative consequences for the behaviour necessary for the successful implementation of an effectual logic in practice. This study shows indeed that when the cognition of starting entrepreneurs consists of both having an effectual logic and psychological ownership, the starting entrepreneurs show behaviour that is at odds with what they should be doing for the successful implementation of an effectual logic. This, while literature states that the successful implementation of the effectual logic is important in the first stages of the start-up, as it positively contributes to new venture growth (Cai et al., 2017).

Thus, a contribution of this study to the literature on both effectuation and psychological ownership lies in the discovery of the implicit link between the two concepts. This study shows that the two concepts should not be seen as independent of each other, as the current literature assumes. Therefore, this study underlines the importance of investigating the two concepts in combination and not in isolation as doing this is key to understanding entrepreneurial behaviour. This study thereby answers to the call of Bird and Schjoedt (2017) by providing greater specificity of entrepreneurial behaviours and more specifically, this study answers the call of Coudounaris and Arvidsson (2019) by expanding the current literature regarding effectuation by combining it with the realm of psychology.

Second, another important finding of this study is that there can be a difference between the starting entrepreneurs' cognition (what they state they consider important, are convinced of, and think) and their behaviour (what they then actually do in practice). For example, the starting entrepreneurs indicate that they find partnerships important and state to be convinced these should not only be transactional in nature but should be of a more collaborative nature, such as knowledge sharing and a deep trust in each other (paragraph 4.1.4 'Principle 4: Attitude to others'). However, when exploring their behaviour, it turns out that in practice they tend to display behaviour that is the complete opposite of this. For example, wanting to keep the start-up close to themselves in their pursuit of exclusive control or even in them having territorial behaviour where they have a tendency not to allow others into the start-up (paragraph 4.3.2 'Dysfunctional behaviours'). This finding in this research is in line with the recent study of Mai and Dickel (2021), as the authors also acknowledged in practice there can be a difference between the cognition and actual behaviour of starting entrepreneurs. Surprisingly, when solely inspecting the effectuation literature, the difference between cognition and actual behaviour is not extensively discussed. The respected literature on effectuation theory as for example the work of Sarasvathy, which functioned as a base for follow-up research of many scholars, only describes the effectual logic from a behavioural perspective (Perry et al., 2012). For example, the emphasis on the behavioural perspective is clearly highlighted through statements such as "...we theorize about human behavior" (Sarasvathy, 2001a, p. 258), Sarasvathy (2001a) speaks multiple times of 'behaviors' that should be typical of effectuation, and the definition of a logic by Sarasvathy et al. (2008, pp. 61-62) as "a clear basis for action on the world". For this, recent studies have expressed their concern, stating the effectuation literature does not sufficiently consider the cognition of starting entrepreneurs (Grégoire & Cherchem, 2020; Kitching & Rouse, 2020). Research by Perry et al. (2012), who were also convinced that logics also refer fundamentally to cognition rather than only behaviour, proposes a possible explanation for the fact that logics are mainly described only from a behavioural perspective. The authors argued that this is due to the way most effectuation studies have been conducted. As most studies used "think-aloud" protocols, where respondents are asked to think aloud and describe what they think as they were faced with problems and decisions, there is no distinction between what they think and how they behave. Based on what the respondents said, the logics were drawn up, assuming that what they think out loud is also going to be their behaviour (Perry et al., 2012). This explains the lack of a clear distinction between cognition and behaviour in the effectuation literature.

In conclusion, a contribution of this study to the existing effectuation literature is to provide additional insight that there is a difference in practice between what entrepreneurs want to do and what they actually do. Hence, the author of this study is therefore not in favour of the proposal of Grégoire and Cherchem (2020) to only highlight the behavioural aspect of effectuation by simply referring to it as "a mode of action" instead of a "logic" in order to get rid of ambiguity. After all, this research shows that it is important to take into account the difference between cognition and behaviour when talking about effectuation and not to assume what the entrepreneurs are convinced of or want is the same as what they actually do in practice. This nuance is important for follow-up research on effectuation, as it could trigger researchers to give additional thought to whether they are measuring what they intend to measure (cognition against behaviour). This study thereby contributes to the call of McKelvie et al. (2011), for it gives new theoretical insights into the origins of the effectual patterns.

Third, a key finding of this study was that the dysfunctional behaviour of the starting entrepreneurs who both have a preference for an effectual logic as well as having feelings of psychological ownership takes shape by them pursuing exclusive control, acting territorial and striving for perfection. When these results are compared with

existing literature, this behaviour seems to have similarities with the behaviour described in the literature regarding psychological ownership. Pierce et al. (2003) stated that individuals with psychological ownership are unwilling to share the target of ownership. They often perceive themselves as uniquely qualified and thus indispensable to the firm (De Vries, 2007), as they are convinced only they know what is best for their venture (Bernhard, 2011). Furthermore, Brown et al. (2005) stated that individuals with feelings of psychological ownership tend to protect their possessions from others and try to limit other people's access to it. They tend to engage in perfectionistic behaviour (Dirik & Eryilmaz, 2016) and any feedback they receive from external parties may feel like a personal attack to them (Galvin et al., 2015). The fact that existing literature on psychological ownership has described behaviours similar to the dysfunctional behaviours found in this study, could indicate that for the starting entrepreneurs in this study the presence of psychological ownership might have a major impact on their dysfunctional behaviour. As the presence of psychological ownership can thus possibly be shown to be linked to dysfunctional behaviour for the effectual starting entrepreneurs, this study contributes to literature on psychological ownership by paving the way for a better understanding of its dysfunctional effects. This research therefore responds to the call of Zhang et al. (2021) of investigating the dysfunctional effects of psychological ownership.

In terms of practical implications, this research invites starting entrepreneurs to look at their own behaviour and whether they recognise their own behaviour to be similar to the dysfunctional behaviours described in this study. Doing this is the first step towards awareness that these dysfunctional behaviours may have consequences for the growth of their start-up; their pursuit of exclusive control and territorial acting may prevent them from admitting to others and being open to collaborations. Moreover, their striving for perfection can be at the expense of quick adaptation, a high decision speed, and they cannot reap the benefits of potentially valuable feedback from others when they perceive it as personal rejection. Start-up incubators can play an important role in helping the starting entrepreneurs recognise this behaviour, but also in guiding them towards different, more functional, behaviours. Based on this insight from this study, it is therefore recommended that start-up incubators broaden their offering of help and guidance, to specific support that is in line with what literature describes as effective in reducing the dysfunctional effects of psychological ownership. For example, offering support to the starting entrepreneurs in regulating their emotions in relation to the venture (Yitshaki, 2021), learning the starting entrepreneurs to distance themselves from their ventures (Zhu et al., 2018) and establishing a strong group feeling within the incubator so that the entrepreneurs can share their feeling of ownership and do not have to carry it alone (Avey et al., 2009; Botha, 2017; Cocieru et al., 2019). In this way, start-up incubators adhere to their important role, as described by Chengappa (2014), of enabling entrepreneurial activity of starting entrepreneurs through extensive mentorship and constant feedback.

Fourth, besides the dysfunctional behaviours this study has also found functional behaviours. The functional behaviours of the starting entrepreneurs who both prefer an effectual logic and have feelings of psychological ownership take shape by them ensuring an open vision and experimenting confidently. Ensuring an open vision is behaviour found in this study which seems to be in line with literature regarding effectuation. Effectual entrepreneurs are stated to pursue openness in their entrepreneurial activities, are imaginative, and are behaviourally flexible (Coudounaris & Arvidsson, 2021). Surprisingly, when comparing the behaviour of ensuring an open vision as found in this study with the psychological ownership literature, one would not expect this behaviour. Entrepreneurs with psychological ownership are namely stated to have high needs for control (Pierce

& Jussila, 2011; Pierce et al., 2001) and therefore are not expected to embrace an uncertain future and intentionally make decisions to remain flexible and avoid decisions where their path is set in stone. So, with regard to this behaviour of ensuring an open vision, it seems that having psychological ownership does not hinder this although this was expected based on the indications from the literature. Subsequently, the found functional behaviour of experimenting confidently seems to be in line with both the effectuation as the psychological ownership literature. Experimenting is stated to be typical behaviour of effectual entrepreneurs (Chandler et al., 2011; Sarasvathy, 2001b). The finding in this study of them doing this confidently is in line with the literature regarding psychological ownership, which states that entrepreneurs act with confidence as a result of their boosted self-esteem (Avey et al., 2009; Zhang et al., 2021).

In conclusion, the discovery of functional behaviours paints a more nuanced picture in relation to the concern expressed in the problem statement of this study. After all, the functional behaviours found show that the combination of effectuation and psychological ownership can also work synergistically for the successful implementation of an effectual logic. Based on these findings, the author does not claim that having the combination of effectuation and psychological ownership should be avoided for starting entrepreneurs, regardless of the dysfunctional behaviours found in this study that result from it. On the contrary, the author believes in the value of having these two states-of-mind as they can be mutually reinforcing. This is under the condition that the entrepreneur consciously utilizes the positive aspects of psychological ownership to support the implementation of an effectual logic and is keen on the negative aspects of psychological ownership not influencing their behaviour as this could hinder the successful implementation of an effectual logic.

In terms of practical implications, starting entrepreneurs should realise that the functional behaviours found in this study are only deemed 'functional' when the intention is to implement an effectual logic. The effectual logic indeed contributes to new venture growth in the initial stages of the start-up (Cai et al., 2017), however, the application of a logic is not static (Laskovaia et al., 2022). The adoption of the right logic suitable for the current stage of the business can be seen as a sequential process (Berends et al., 2014). Logics can shift over time as a result of the firm's development (Reymen et al., 2015), changes in perceived uncertainty in the firm's environment or the number of resources owned by that firm (Berends et al., 2014; Sarasvathy, 2001a). Some studies have also found entrepreneurs simultaneously using the two logics if the circumstances require so (Ciszewska-Mlinaric et al., 2016; Dutta et al., 2015; Lam & Harker, 2015). So, starting entrepreneurs need to be careful that as their start-up grows over time or the environment changes, the effectual logic does no longer have to be the only beneficial logic and (aspects of) the causal logic could be more appropriate. If this is the case, shifting the entrepreneur's cognition and associated behaviour to a causal logic can in turn be deemed as 'functional'. An important role in this process is devoted to the start-up incubator to recognise when this transition is needed and accordingly provide the entrepreneur with proper guidance.

5.3 Limitations and Recommendations for Future Research

Having discussed the findings and the implications of this study, this section will highlight the limitations and the corresponding recommendations for future research.

The first limitation is rooted in the choice for examining starting entrepreneurs linked at start-up incubator StartUp Nijmegen. Even though the choice for StartUp Nijmegen in this research is extensively elaborated upon, the fact that only starting entrepreneurs linked to this incubator are examined provides relatively limited insight into 'the

starting entrepreneur' in the general sense. The insights provided by this research on the effectual logic of these starting entrepreneurs of StartUp Nijmegen, their experienced degree of psychological ownership and how this combination shapes their entrepreneurial behaviour, does not have to be the same for other entrepreneurs from other start-up incubators across other cities. An interesting direction for future research is therefore to explore how starting entrepreneurs connected to other start-up incubators experience the concepts in this study or to explore how starting entrepreneurs not connected to a start-up incubator experience these concepts. This could provide interesting insights, for example, about the impact that region has, the differences between incubators, or whether the connection to an incubator makes a difference regarding how starting entrepreneurs experience the concepts in this study.

The second limitation of this study is the lack of comparison in behaviour between starting entrepreneurs with both a preference for effectuation and a large degree of psychological ownership to starting entrepreneurs that possess one or both of these concepts to a lesser degree. As this study just looked at starting entrepreneurs with a cognition consisting of having effectuation and having psychological ownership, this results in the limitation that their behaviour could only be described but not explained as there was no basis for reference. Henceforth, it cannot be stated with absolute certainty that the observed functional and dysfunctional behaviours result from the combination of these concepts. The possibility for another, unknown, factor to play a role in the resulting effects cannot be excluded, as the absence of these effects in starting entrepreneurs who lack one or both concepts has not been observed. Although this research has been performed with utmost care and the results match findings from literature, a recommendation for future research based on this limitation is twofold:

First, future research would benefit from a qualitative study on a larger scale. This would allow more starting entrepreneurs to be interviewed, increasing the likelihood that there would also be a fair amount of starting entrepreneurs who possess effectuation and/or psychological ownership to a lesser degree. On this basis, clear groups would emerge and the behaviour of these groups could be compared. In this study, only SE7 and SE8 had a lesser degree of psychological ownership, and although it was beyond the scope of this study, there were slight indications for their behaviour to be different than the behaviour found for the other nine starting entrepreneurs who did have the combination of effectuation and psychological ownership. These are interesting indications that serve as stepping stones for future large-scale qualitative research into these concepts.

Second, future research would benefit from a quantitative study where the concepts in this study can be measured as mutually exclusive and collectively exhaustive. Ideally, four groups would emerge from this quantitative assessment: 1) high degree of effectuation and psychological ownership, 2) low degree of effectuation/causation and psychological ownership, 3) high degree of effectuation and no psychological ownership, 4) low degree of effectuation/causation and no psychological ownership. Subsequently, an experiment could be conducted to examine the behaviour of these four groups. In this way, it would be possible to make more definite statements about the relationships between the concepts in this study.

5.4 Reflexivity

In this last paragraph, attention will be devoted to reflexivity. Reflexivity is an awareness of the researcher's role in the practice of the research and the way this is influenced by the object of the research, enabling the researcher to acknowledge how he or she affects both the research processes and outcomes (Haynes, 2012, p. 72). In other words, it regards how the research affects the researcher and how the researcher affects the research.

Before I started working on my thesis, I was already familiar with the phenomenon of psychological ownership. It wasn't until I started looking into the literature for my thesis that I found out about the scientific term, but I was already familiar with the fact that something you develop yourself can start to feel like something you own and as part of yourself. During my previous studies in Business Innovation, where I was educated as an innovative concept developer, I often developed concepts to solve business problems. I noticed both in myself and my fellow students that investing time and energy in a concept that you develop yourself makes you identify with it. The fact that I have experienced these feelings of psychological ownership myself is decisive for my position as a researcher in this study. It is possible that because I recognised the feeling myself, I recognised it more quickly during the interviews with the participants than a researcher who has not had this experience him- or herself. In that sense, I as a researcher did affect the research.

I may also add that I believe I experienced feelings of psychological ownership over my thesis. The subject of my thesis, the combination of entrepreneurship, innovation, and psychology, is very close to my heart. The fact that I was able to explore my own topic during this thesis trajectory has further strengthened my attachment to my thesis. This has ensured that I have worked on this research with a lot of dedication and passion, even at times when the process was more difficult. Because this was my own topic, I was regularly lost and struggled during the process. My dedication and the fact that I wanted to conduct the best possible research meant that I sometimes got too caught up in it; I regularly lost my train of thought because I got stuck in it too deeply. At such moments during the process, I spoke with many Radboud professors, for whom I am grateful for their help. However, in all these different visions and opinions, I can say in retrospect that I sometimes lost my own vision and with that the confidence in myself. What I have learned from this half year is to let go and that taking a step back is not a bad thing. With that distance comes space so that I can find my own course again and thus regain confidence in myself. In that sense the research did affect me. A valuable lesson.

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Appendix

Appendix A: Literature comparison of Effectuation and Psychological Ownership

Comparison of the Effectual logic with Psychological Ownerships for different areas, with resulting complications.

Area	Effectual logic	Psychological Ownership	Possible complications as a result of combining the two concepts
Core definition	The effectuation logic concerns the question “Who am I?” (Agogu�� et al., 2015).	Psychological ownership concerns the question “What do I feel is mine and a part of me?” (Pierce et al., 2001).	The line between “me” and which is considered “mine” is fine (James et al., 1890). Possessions, as a part of the extended self, play a dominant role in the owner’s identity (Belk, 1988) and the loss of possessions may result in the shrinkage of one’s personality (James et al., 1890).
Forming Partnerships	In order to implement the effectuation logic sufficiently the entrepreneur needs specific abilities in personally persuading each stakeholder and creating a feasible set of contracts (Sarasvathy, 1997).	Individuals with feelings of psychological ownership can engage in territorial behaviours (Brown et al., 2005).	When psychological ownership is present, these people tend to protect their possessions from others and try to limit other people’s access to it (Brown et al., 2005).
Change	Under effectuation, entrepreneurs need to incorporate external feedback which makes them flexible to unforeseen events and use them to the organisations’ advantage (Chandler et al., 2011).	For individuals with feelings of psychological ownership, change often requires efforts to reposition their self-concepts (Galvin et al., 2015). When radical alterations need to be made of targets what is perceived as theirs, people may feel personal loss, frustration, and stress due to the lack of control over what once was theirs (Bartunek et al., 1993). Much like the overly possessive child, individuals may be unwilling to share the target of ownership with others or may feel a need to retain exclusive control over it (Pierce et al., 2003).	If top management does not pay attention to managing change effectively, the performance will inevitably be affected (Ates et al., 2013). However, when psychological ownership is present, any imposed, subtractive and revolutionary changes brought on a project can trigger resistance (Baer & Brown, 2012) and may even feel like a personal attack (Galvin et al., 2015). When psychological ownership is present, this may impede cooperation (Pierce et al., 2003). It can furthermore produce dysfunctional effects concerning sharing information and teamwork (Pierce et al., 2001).
Attitude towards others in partnerships	An effectual attitude toward others focuses on forming partnerships based on complementary competencies that help them achieve their goals (Read et al., 2009).		
Attitude towards others within the start-up	Effectuation can be described as a people-dependent logic (Djuricic & Bootz, 2019; Sarasvathy, 2001a) because a learning curve is established through interaction with other parties by confronting their initial perceptions with the perceptions of others. This interaction allows them to see entirely different sets of alternatives or possible courses of action (Dew et al., 2009).	More territorially oriented entrepreneurs might employ defensive and protective actions and behaviours to protect their possession (Brown et al., 2005). Only they know what is best for their venture (Bernhard, 2011). Situations occur where even minor decisions must be escalated to the founder-manager, which can lead to an overload of decision-making on the founder-manager (Tashakori, 1980).	There is a negative association between entrepreneurs’ sense of territoriality and growth (Yitshaki, 2021). Especially in the case of territorial behaviour in high-trust environments is perceived as counterproductive, as entrepreneurs must negotiate and collaborate with different stakeholders (Brown et al., 2005) and be able to make necessary changes in response to dynamic environments (Grimes, 2018).
Control	The process of effectuation is focused on increasing and optimising performance using resources (Sarasvathy, 2001a; Sarasvathy & Dew, 2005). Entrepreneurs creating high-growth ventures often have to sacrifice control to gain access to external resources (Wasserman, 2008).	One of the reasons individuals develop psychological ownership is because it satisfies their needs for control (Pierce & Jussila, 2011). Individuals experiencing psychological ownership are characterised by high needs for control (Pierce & Jussila, 2011; Pierce et al., 2001).	When psychological ownership is present, entrepreneurs are less likely to share control of their business, they often perceive themselves as uniquely qualified and thus indispensable to the firm (De Vries, 2007).
Uncertainty	The effectuation logic deals with uncertainty through a principle called affordable loss (Read & Sarasvathy, 2005). Experiments that are more expensive than the entrepreneur can afford to lose are rejected in favour of less expensive experiments (Chandler et al., 2011). Entrepreneurs focusing on affordable loss are more likely to consider liquidation (of ideas) (DeTienne & Chandler, 2010).	The loss of special possessions leads to strong negative reactions because certain possessions are one’s identity markers, and losing them means, to some extent, the “death” of the self (Burris & Rempel, 2004).	When psychological ownership is present, people tend to consider their possessions as their extended selves, such that losing these possessions is regarded as the ‘death’ of the self (Belk, 1988). Liquidation may therefore be avoided. This ultimately results in poor investment decisions for the business (Peck & Luangrath, 2018).

Appendix B: Pre-Questionnaire

This appendix shows the original questionnaire as it was sent to the participants. The following questions are related to the mindset of the entrepreneur, to which principles the entrepreneur has a preference towards an effectual logic. It is important to emphasize that there are no wrong answers. These closed questions are completed by the participant prior to the interview via: <https://forms.gle/Y4F3QRXcYfvp9KN8A>

Original pre-questionnaire translated into Dutch:

Masterthesis Interview over Ondernemerschap

***Vereist**

1. Voornaam en achternaam *

2. Bedrijf *

De volgende vragen zijn gerelateerd aan uw mindset als ondernemer. Kies voor de uitspraak waarin u zelf als ondernemer het meest herkent. Denk niet te lang na over de vragen en vul deze in op basis van uw gevoel. Er zijn GEEN foute antwoorden.

3. Uw blik op de toekomst als ondernemer. In welke uitspraak herkent u uzelf het meest? *

Markeer slechts één ovaal.

☐ Ik zie de toekomst als iets wat niet voorspeld kan worden. Door zelf proactief te zijn creëer ik kansen.

☐ Ik zie de toekomst als iets dat voorspeld kan worden. Door te analyseren kan ik al bestaande kansen in de markt aangrijpen.

4. Uw reactie op onverwachte zaken als ondernemer. In welke uitspraak herkent u uzelf het meest? *

Markeer slechts één ovaal.

☐ Als er onverwachte zaken op mijn pad komen kan ik gemakkelijk mijn plan aanpassen.

☐ Ik zie onverwachte gebeurtenissen soms als lastig omdat dit impliceert dat ik mijn bestaande plannen moet omgooien.

5. Hoe u keuzes maakt en hoe u actie onderneemt als ondernemer. In welke uitspraak herkent u uzelf het meest? *

Markeer slechts één ovaal.

☐ Ik ben een ondernemer die gedreven is door de doelen die ik stel. Op basis daarvan bepaal ik wat ik het beste kan doen en wat ik nodig heb.

☐ Ik ben een ondernemer die eerst kijkt naar wat ik al heb: bijvoorbeeld kennis, middelen en connecties. Op basis daarvan bepaal ik wat ik het beste kan gaan doen.

6. Uw visie als ondernemer op andere partijen en stakeholders. In welke uitspraak herkent u uzelf het meest? *

Markeer slechts één ovaal.

☐ Partnerschappen met mijn klanten en leveranciers zijn voornamelijk transactiegericht.

☐ Partnerschappen met mijn klanten en leveranciers zijn gebaseerd op het delen van nieuwe kennis, ideeën en zijn een vorm van ondersteuning voor mijn bedrijf.

7. Hoe u omgaat met onzekerheid als ondernemer. In welke uitspraak herkent u uzelf het meest? *

Markeer slechts één ovaal.

☐ Ik probeer onzekerheid te minimaliseren door een duidelijk uitgewerkt plan te hebben waarin ik ga voor wat ik denk dat het meest oplevert, dat geeft mij zekerheid.

☐ Ik doe kleine investeringen in mijn bedrijf zodat de gevolgen niet erg groot zijn wanneer er iets mis gaat, dat geeft mij zekerheid.

8. Heeft u nog vragen of wilt u nog toelichting geven met betrekking tot de door u ingevulde antwoorden?

Questions of the pre-questionnaire translated into English:

1. First name and surname
2. Company

The following questions are related to your mindset as an entrepreneur. Choose the statement in which you recognise yourself the most as an entrepreneur. Do not think too long about the questions and fill them in based on your feelings. There are NO wrong answers.

Principle 1: View of the future

3. I am curious about your view of the future from your role as an entrepreneur. Can you indicate in which statement you recognize yourself the most?

- ☐ I see the future as something that cannot be predicted. By being proactive myself, I create opportunities.
- ☐ I see the future as something that can be predicted. By analyzing, I can seize existing opportunities in the market.

Principle 2: Attitude to surprise

4. I am curious about your reaction to unexpected things in your role as an entrepreneur. Can you indicate in which statement you recognize yourself the most?

- ☐ *If unexpected things come my way, I can easily adjust my plans.*
- ☐ *I sometimes see unexpected events as difficult because this implies that I have to change my existing plans.*

Principle 3: Basis for action

5. I am curious about how you make choices and how you take action from your role as an entrepreneur. Can you indicate in which statement you recognize yourself the most?

- ☐ *I am an entrepreneur who is driven by the goals I set. Based on that, I determine what I can do best and what I need.*
- ☐ *I am an entrepreneur who first looks at what I already have: for example, knowledge, resources, and connections. Based on that, I decide what I can do best.*

Principle 4: Attitude to others

6. I am curious about how you look at other parties and stakeholders from your role as an entrepreneur. Can you indicate in which statement you recognize yourself the most?

- ☐ *Partnerships with my customers and suppliers are mainly transactional.*
- ☐ *Partnerships with my customers and suppliers are based on sharing new knowledge and ideas and are a form of support for my business.*

Principle 5: View on uncertainty

7. I am curious about how you deal with uncertainty in your role as an entrepreneur. Can you indicate in which statement you recognize yourself the most?

- ☐ *I try to minimize uncertainty by having a clearly worked out plan in which I go for what I think will yield the most, which gives me certainty.*
- ☐ *I make small investments in my company so that the consequences are not very big when something goes wrong, that gives me certainty.*

8. Do you have any questions or would like to provide further clarification regarding your answers?

Appendix C: Interview guide

Give thanks to the participant. Hand over the consent form and give the participant time to read and sign it. Explain briefly the aim and the outline of the interview. ***start recording***

1. Can you briefly tell me about yourself and your company?

Semi-structured questions – Effectuation/causation logic

The following questions delve deeper into the mindset of the entrepreneur by discussing the outcome of the questionnaire completed by the participant and asking follow-up questions.

2. You have completed a questionnaire about your mindset as an entrepreneur prior to our interview [Repeat the participant's choices if necessary]. Could you give me some more explanation based on what you filled out?

Follow-up questions: Connect to what the participant says and continue to ask how the participant feels/felt or what the participant thinks/thought.

Semi-structured questions – Psychological Ownership

The following questions aim to determine to what extent the entrepreneur identifies with his/her start-up on a personal level.

3. Some entrepreneurs see their company as something of their own, even as “their child”. How do you as an entrepreneur experience this with regard to your start-up?

Follow-up questions: Connect to what the participant says and continue to ask how the participant feels/felt or what the participant thinks/thought.

4. Do you feel connected as a person to your company, as if it were part of your identity?

5. [Regardless of whether the answer is yes or no]. Can you elaborate further on that?

Follow-up questions: Connect to what the participant says and continue to ask how the participant feels/felt or what the participant thinks/thought.

Semi-structured questions – Combination of Effectual/Causal logic & Psychological Ownership on Managerial Practices

The following questions aim to find out how the principles on which the entrepreneur has the preference for an effectual logic in combination with the presence of psychological ownership describes the managerial practices of the entrepreneur.

‘We have just gained some more insight into your preferences for a certain mindset as an entrepreneur [repeat global outcome questions of questionnaire and interview question 2] and we have determined to what extent you identify yourself with your business [repeat outcome questions 3 to 5].’

6. Your entrepreneurial mindset as we have defined it and the identification as an entrepreneur with your business. Do you think they are connected?

7. If so, what results from the combination?

Follow-up questions: ask about implications for making plans for the start-up, running the start-up, monitoring the start-up, and making choices for the start-up.

8. Do you think your identification with your company combined with your mindset helps you in entrepreneurship?

9. [If yes] Can you give an example(s) of how your identification with your company combined with your mindset helped you in entrepreneurship?

Follow-up questions: ask about implications for making plans for the start-up, running the start-up, monitoring the start-up, and making choices for the start-up.

10. Do you think your identification with your company combined with your mindset can hinder you in entrepreneurship?

11. [If yes] Can you give an example(s) of how your identification with your company combined with your mindset hindered you in entrepreneurship?

Follow-up questions: ask about implications for making plans for the start-up, running the start-up, monitoring the start-up, and making choices for the start-up.

Additional follow-up questions regarding dysfunctional behaviour: ask about implications when change is imposed, external stakeholders reject start-up, potential feelings of perfectionism & control, and fear of failure. Consequences for business operations?

Give the participant the opportunity to ask questions or allow the participant to add something.

****stop recording****

Appendix D: Consent form

In this section, a translated version of the consent form is shown as the original is in Dutch.

INFORMED CONSENT FORM

The participant is invited to participate in the study through an interview. It concerns a master thesis research about the mindset of the entrepreneur, his/her degree of personal identification with their Start-Up and how this combination gives input to managing the Start-Up. The purpose of this form is to record agreements and focal points between the participant and the researcher regarding the to be conducted interview.

<i>Course of events during the investigation.</i>	Before the interview, the participant completes a <u>short survey</u> with questions about their mindset as an entrepreneur. This will be discussed during the interview. An audio <u>recording</u> of the interview will be made, or both audio and video if the interview takes place online. Based on the audio fragment, the researcher will develop a <u>transcript</u> that will serve as input for answering the research questions. This transcript will not be used for any other purpose.
<i>Voluntary</i>	Participation in the study is <u>voluntary</u> . The participant can always choose not to answer questions, without giving any reasons. Participation can be terminated at any time, including after the interview has been conducted, until the conclusion of the study.
<i>Confidentiality of data</i>	Before the research data is released, it will be made <u>anonymous</u> . This concerns both the data of the participant, as well as persons mentioned in the interview. To illustrate, the data will be processed as "[Entrepreneur4]", "[Start-Up6 in the medical sector]" or "[Competitor2]". In no way will confidential information or personal data of the participant be made public. Only the researcher and her two direct supervisors and assessors have insight into the non-anonymized data.
<i>Feedback results</i>	At the end of the interview, the participant has the right to inspect the researcher's transcript on request, so the participant can provide feedback and coordination can be sought on differently interpreted matters. The researcher can, if necessary, contact the participant after the interview to submit interim research results and to ask a few additional follow-up questions.

The participant declares to be sufficiently familiar with the purpose of the study and the above-mentioned matters before the start of the interview. The participant agrees to these matters.

The researcher agrees with the above matters, during and after the investigation. Data, concerns, and questions of the participant will be treated with care by the researcher. In case of changes to the above matters, the researcher must contact the participant.

Participant name: _____

Company participant: _____

Date: _____

Participant's signature:

Researcher name: Lisa Kessels

Institution: Radboud University

Date: _____

Researcher's signature:

Appendix E: Transcripts with accompanied quotes and codes

To guarantee the privacy of the participants in this study, the transcripts with accompanying quotes and codes were submitted in a separate file.

Appendix F: Results of the pre-questionnaire

The table below gives an overview of the principles each starting entrepreneur indicated to have a preference for the effectual logic.

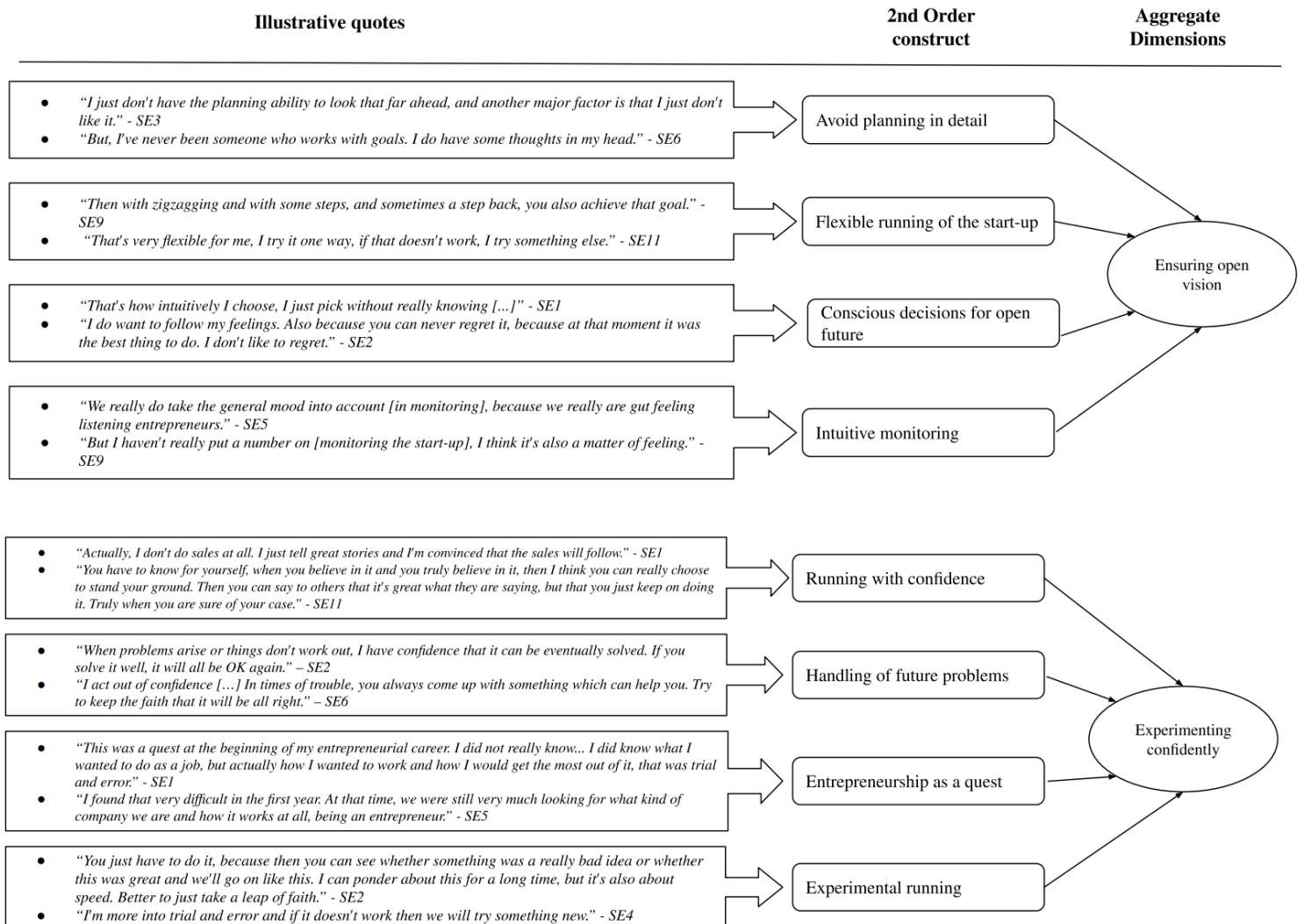
Preference of the starting entrepreneurs for the effectual logic across the principles

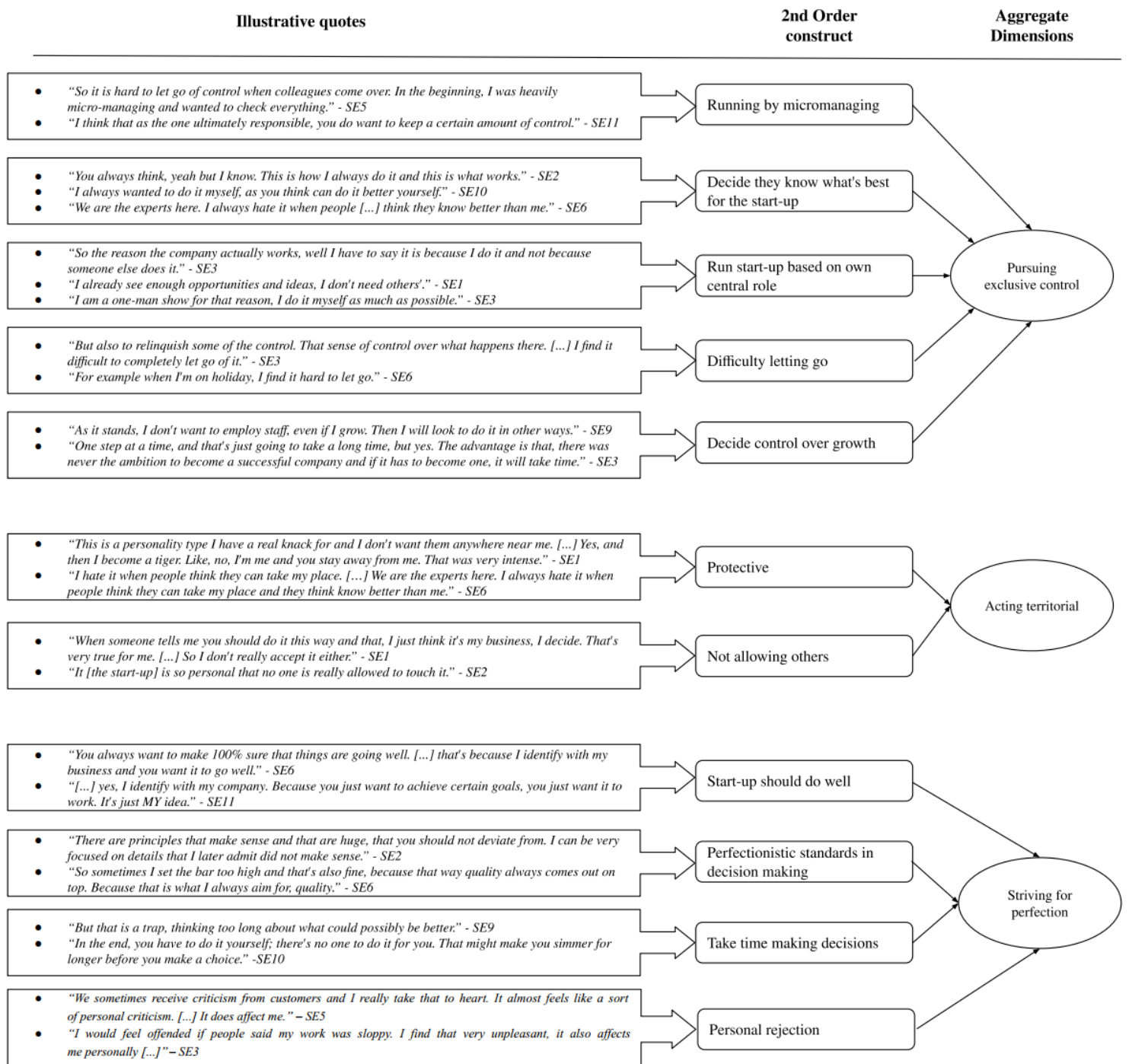
Participant	Principle 1: View on the future	Principle 2: Attitude to surprise	Principle 3: Basis for action	Principle 4: Attitude to others	Principle 5: View on uncertainty
SE1	Yes	Yes	Yes	Yes	Yes
SE2	Yes	Yes	Yes	Yes	Yes
SE3	Yes	Yes	Yes	Yes	Yes
SE4	Yes	Yes	Yes	Yes	Yes
SE5	Yes	Yes	No	Yes	Yes
SE6	Yes	No	Yes	No	Yes
SE7	Yes	Yes	Yes	No	Yes
SE8	No	Yes	Yes	No	No
SE9	Yes	Yes	No	Yes	No
SE10	Yes	Yes	No	No	Yes
SE11	Yes	Yes	No	Yes	No

Note This table shows the principles on which the starting entrepreneurs in this study indicated a preference for an effectual logic (indicated with "yes") as opposed to a causal logic. When they preferred causal logic for a principle, it is indicated with "no".

Appendix G: Codebooks ‘Combination of Effectuation and Psychological Ownership in shaping Entrepreneurial Behaviour’

Codebook: Functional behaviour





Appendix H: Synthesized Member Check form

Beste participant,

Hierbij deel ik graag een kort overzicht van de resultaten van mijn onderzoek met u. Zo krijgt u enerzijds inzicht in de bevindingen en anderzijds is het van belang in het kader van ‘member checking’. Zo krijgt u de kans na te gaan of de interpretaties in de resultaten ook voor u gelden. Dit om vast te stellen of de onderzoeker er voldoende in geslaagd is om uw ‘belevingswereld’ te begrijpen en vast te leggen. Na de presentatie van de resultaten volgt een tekstvak waarin u, indien nodig, opmerkingen of feedback kunt noteren:

Het doel van dit onderzoek was om te begrijpen hoe de mindset van de ondernemers verbonden aan startup incubator StartUp Nijmegen, in combinatie met het feit dat zij zich identificeren met hun bedrijf, hun ondernemersgedrag vormgeeft.

Met betrekking tot de mindset van de ondernemers in dit onderzoek blijkt dat het grootste deel van de ondernemers een ‘effectual’ mindset heeft. Dit betekent dat zij de toekomst ervaren als niet voorspelbaar, door zelf proactief te zijn worden kansen gecreëerd. Als reactie op onverwachte zaken geven zij de voorkeur aan het gemakkelijk aanpassen van het plan. Het grootste deel geeft de voorkeur aan actie ondernemen op basis van de middelen die zij hebben, bijvoorbeeld kennis en connecties. Op basis daarvan bepalen zij wat zij het beste kunnen gaan doen. Met betrekking tot een voorkeur tot partnerschappen, de meeste ondernemers geven aan dat partnerschappen met diens klanten en leveranciers gebaseerd zijn op het delen van nieuwe kennis en ideeën. Deze zijn dan ook een vorm van ondersteuning voor het bedrijf. Ten slotte zijn de meeste ondernemers ervan overtuigd dat zij het beste met onzekerheid om kunnen gaan door kleine investeringen in het bedrijf te doen, zodat de gevolgen niet erg groot zijn wanneer er iets mis gaat. Dit geeft zekerheid.

Met betrekking tot de persoonlijke identificatie met het bedrijf laten de resultaten van de interviews zien dat een groot deel van de ondernemers dit daadwerkelijk ervaart. Persoonlijke identificatie met het bedrijf houdt verband met de vraag ‘Wat voelt als mijzelf en als een deel van mij?’ en veel van de ondernemers zouden deze vraag beantwoorden met als antwoord: ‘mijn bedrijf’. Voor veel ondernemers geldt dat het bedrijf als een deel van hun identiteit voelt en sommigen geven aan hun bedrijf ook als ‘hun kindje’ te beschouwen.

Vervolgens zijn de gedragingen onderzocht van de ondernemers die zowel deze ‘effectual’ mindset hadden als dat zij gevoelens van identificatie hadden jegens hun bedrijf. Het ondernemersgedrag is onderzocht op meerdere aspecten: plannen maken voor het bedrijf, het runnen, het monitoren en de besluitvorming. Er is vervolgens gekeken of dit gedrag functioneel of dysfunctioneel was voor de groei van de start-up.

Functioneel gedrag wat is gevonden bij de startende ondernemers is dat zij bezig zijn met het zeker stellen van een open vizier naar de toekomst voor de start-up. Bij hun besluitvorming en planning zorgen zij ervoor dat zij een open visie op de toekomst houden en zij vermijden daarom bewust keuzes die zorgen voor minder flexibiliteit en vermijden plannen waar alles in beton is gegoten. De startende ondernemers omarmen hierbij het feit dat zij geen idee hebben wat er verder gaat gebeuren. Dit maakt hen flexibel en open voor alle mogelijke scenario's en kansen die op hun pad komen.

Het tweede gevonden functionele gedrag is dat zij experimenteren met zelfvertrouwen. De startende ondernemers experimenteren met vertrouwen omdat zij ervan overtuigd zijn dat zij alle problemen die zich in de toekomst aandienen aankunnen. De startende ondernemers blijken een fundamenteel geloof te hebben in hun vermogen om de toekomst naar hun hand te zetten door te handelen naarmate situaties zich voordoen en het vertrouwen in zichzelf te hebben dat zij problemen kunnen aanpakken wanneer deze zich voordoen. Hierdoor kunnen zij de vruchten plukken van nieuwe markten omdat zij buiten de gebaande paden durven treden. Deze gedragingen ondersteunen de groei van de start-up.

Dysfunctioneel gedrag wat gevonden is bij de startende ondernemers bestaat uit dat zij in het runnen van de start-up zelf de exclusieve controle erover willen behouden. Dit gedrag is geworteld in de overtuiging van sommige startende ondernemers, die lijken te geloven dat alleen zijzelf de juiste persoon zijn om de start-up te leiden. Omdat zij alleen zichzelf in staat achten te weten wat het beste is voor hun start-up, is het gedrag dat daaruit voortvloeit dat zij de exclusieve controle over de start-up nastreven, waarbij zij het beheer van de onderneming uitsluitend in hun eigen handen willen houden. Als gevolg daarvan vinden deze startende ondernemers het moeilijk om de controle los te laten. Vooral wanneer zij personeel gaan aannemen, want dat impliceert het loslaten van de controle en het leggen van verantwoordelijkheden in de handen van anderen. Zij lijken het moeilijk te vinden om werk te

delegeren aan hun collega's en als gevolg daarvan vermelden zij dat zij soms ten prooi vallen aan gedrag dat lijkt op micromanagement.

Het tweede dysfunctionele gedrag is zich territoriaal gedragen. Dit territoriale gedrag van sommigen kan het best worden omschreven als een sterkere vorm van het nastreven van exclusieve controle, waarbij deze specifieke startende ondernemers zeer beschermend tegenover hun start-up staan en geneigd zijn anderen niet toe te laten.

Het laatste dysfunctionele gedrag is streven naar perfectie. Vastgesteld werd dat sommigen van hen de lat hoog leggen wat betreft de wijze waarop zij hun start-up runnen en de beslissingen die zij nemen. Zij controleren de start-up op basis van hun eigen hoge normen. Tijdens de interviews werd deze startende ondernemers gevraagd naar de reden achter hun neiging om te streven naar perfectie. Uit hun antwoorden werd duidelijk dat de onderliggende reden voor dit gedrag is dat zij willen dat het goed gaat met hun bedrijf, omdat dat ook impliceert dat zij zelf goed in hun vel zitten. Een andere reden voor hun streven naar perfectie die uit de interviews naar voren kwam, is dat sommige ondernemers zo goed mogelijk willen presteren om kritiek van anderen jegens hun start-up te vermijden. Zij verklaren namelijk dat zij geneigd zijn feedback van anderen op te vatten als kritiek, wat voor hen voelt als een persoonlijke afwijzing. Deze gedragingen hinderen de groei van de start-up.

Ruimte voor eventuele opmerkingen...