Effort Towards New Venture Growth: Investigating the Roles of Implementation Intention and Venture Goal Commitment on Entrepreneurial Growth Effort Intensity

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Abstract

The establishment and growth of new ventures play a crucial role in generating wealth and prosperity in most industrialised economies. How venture growth is attained and the contributing factors which promote new venture growth tasks, will further our understanding of this phenomenon. There is a growing interest in investigating new venture growth; however, there has been a lack of studies applying theoretical bases for the investigation of new venture growth.

Effort by the individual entrepreneur to persevere through the goal of achieving growth is an integral part of the venture growth phenomenon. This study aims to contribute to the literature on new venture growth through investigating entrepreneurial effort towards venture growth tasks, which is referred to as entrepreneurial growth effort intensity (EGEI). Effort is defined as the allocation of time and resources; which entrepreneurs must decide effectively on as they are continuously required to perform multiple tasks in various sequences.

Implementation intention and venture goal commitment are discussed as playing a fundamental role in translating intended goal-directed behaviour into actual behaviour. This study investigates the effects of these constructs towards venture growth on EGEI. In addition, the impact of goal intention towards venture growth tasks and venture growth intention has been examined to extend knowledge on the relationship between intentions and subsequent entrepreneurial effort.

Smartphone-based experience sampling methodology (mESM) has been implemented in this study to conduct process-oriented research as it captures changes and fluctuations over a short period. Entrepreneurship is recognised as an ongoing process; thus, the relating constructs fluctuate and change during this process, therefore, cannot be measured as stable. The study's primary constructs have been measured for six waves over the three-month study period.

Significant diligence is required for the collection of data in ESM studies; therefore, most studies have participant sample sizes which are considered as modest in the field of social science. However, due to participants being required to respond multiple times for each measure, the total sample size is the total number of data points, which makes it sufficient in statistical analyses that focus on modeling within-individual relationships. This ESM study has collected 1,955 data points from 19 early-stage entrepreneurs.

The findings contribute to the new venture growth literature on the following areas: (1) entrepreneurial effort while achieving long-term goals, (2) non-induced implementation intentions, (3) venture goal commitment, and (4) process-oriented research in entrepreneurship.

The results of the multilevel regression models have indicated that implementation intention focused on venture growth tasks promotes EGEI. This insight is fundamental as it supports a need for developing implementation intentions focused on venture growth specific tasks which promote EGEI. Interestingly, contrary to expectations, a negative association was found between venture goal commitment towards venture growth and EGEI. A potential explanation may be that venture growth tasks are possibly perceived as more complex in comparison to venture creation tasks despite entrepreneurs' commitment. The perception of the complexity of venture growth

tasks can lead to action uncertainty, which may result in a decrease in entrepreneurial effort. This finding re-emphasises the importance of effective implementation intentions focused on venture growth tasks to provide the early-stage entrepreneurs with a clear plan on future actions to take, thus, increasing action certainty.

To gain further insight on entrepreneurial effort towards venture growth, it is essential for future research to carefully examine the growth behaviour of entrepreneurs at later stages of the venture process. This examination would assist in addressing some of the growth-related challenges identified in this study among early-stage entrepreneurs. Furthermore, a greater focus on investigating strategic decisions relating to venture growth among early-stage entrepreneurs could explain which of these decisions (how to grow, or where the growth will occur) are more likely to promote EGEI.

Statement of Authorship

Except where reference is made in the text of the thesis, this thesis contains no material published elsewhere or extracted in whole or in part from a thesis accepted for the award of any other degree or diploma. No other person's work has been used without due acknowledgement in the main text of the thesis. This thesis has not been submitted for the award of any degree or diploma in any other tertiary institution.

Anahita Amirsardari

1st April 2020

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Chapter 1: Introduction

1.1 Chapter introduction

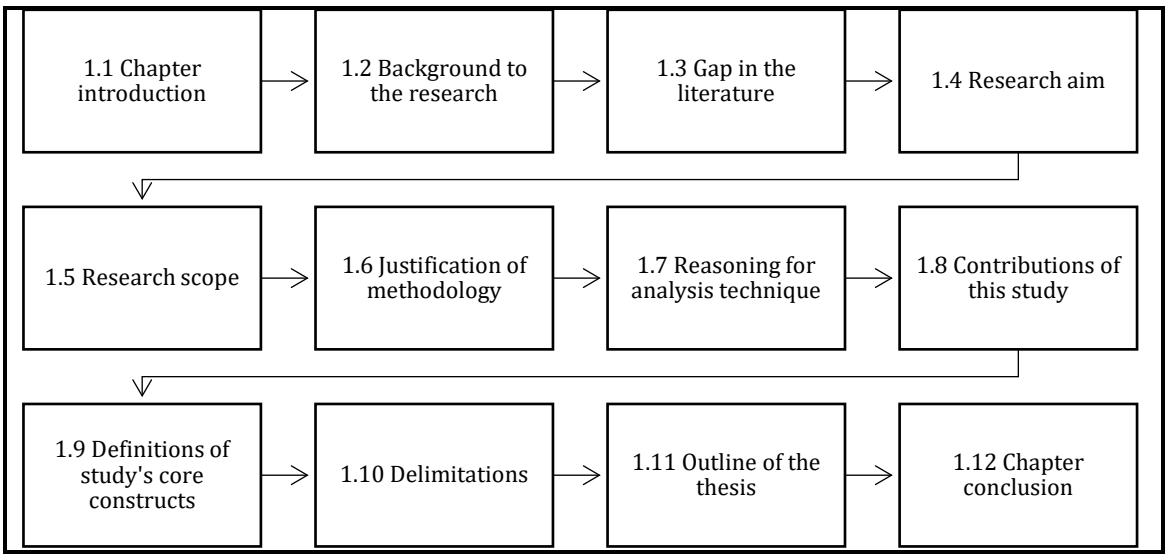
This chapter introduces this study, which explores *Effort Towards New Venture Growth: Investigating the Roles of Implementation Intention and Venture Goal Commitment on Entrepreneurial Growth Effort Intensity*. Figure 1-1 illustrates the chapter structure.

Firstly, the background to the research is explained, which emphasises the importance of further understanding the actions performed by entrepreneurs. Specifically, this study focuses on entrepreneurial effort intensity towards venture growth tasks among early-stage entrepreneurs. Furthermore, the gap in the literature is discussed on the lack of sufficient knowledge in three main areas: (1) sustaining entrepreneurial effort towards long-term goals, (2) the effect of entrepreneurial activities on venture growth, and (3) the application of implementation intention in the field of entrepreneurship. Following this the aim and scope of this research is outlined.

Experience sampling methodology (ESM) is introduced, which has been implemented to collect multiple measures for each of the study's constructs. The total sample size in ESM studies is the total number of data points, which is as a result of the multiple measures taken for each participant. The total number of data points collected for this ESM study is 1,955 from 19 early-stage entrepreneurs. The analysis for the clustered data is explained, which has consisted of conducting multilevel regression modeling.

The contributions of this study are discussed, followed by definitions for the study's core constructs. Delimitations of the study are outlined to gain a more thorough insight into the boundaries placed on this research. Lastly, an outline of the thesis is provided, in combination with a summary of each chapter.

Figure 1-1: Introduction chapter structure



1.2 Background to the research

The establishment and growth of entrepreneurial new ventures play a fundamental role in creating wealth in most industrialised economies. It is crucial to understand how to promote the growth of new ventures and to identify the key prerequisites. While there is an increasing interest in the growth of new ventures, there has been a lack of studies applying theoretical bases in explaining this phenomenon (Saarenketo, Puumalainen, Kuivalainen and Kyläheiko, 2009).

Despite the development of several frameworks explaining venture growth, there is no comprehensive theory which explains which new ventures will grow, and how they will achieve this growth. Penrose (1959) provided the first comprehensive overview of the growth of firms, which has been based on the dynamic theory of economic development, which originated from Schumpeter (1934).

The individual entrepreneur is an integral part of the phenomenon of venture growth. According to Schumpeter, the entrepreneur is an agent who recognises opportunities in the external environment and takes advantage of these opportunities. Without the entrepreneur's effort towards venture growth tasks, the main growth strategies implemented by new ventures as described by Ansoff (1965) cannot be performed, these include: market penetration, product development, market development, and diversification.

Acting on an intended behaviour consists of two distinct phases. The intention models mainly focus on the motivational phase, which is when individuals set their goals based on their attitudes, subjective norms, and perceived behavioural control.

To perform a behaviour requires the second phase, which is the volitional phase (Gollwitzer and Brandstätter, 1997). In this phase, individuals plan how they are going to act on their set intentions. This second phase is a fundamental part of the process of performing a behaviour. To achieve a thorough conceptual understanding of entrepreneurial action, this phenomenon must be recognised as consisting multiple antecedents; these include: internal motivation, intention, effort and the external challenges and opportunities (Shaver, 2012a).

The action part of entrepreneurial action originates from the fields of philosophy and psychology. The discipline of psychology is referred to as 'the science of behaviour', and 'thought' is often viewed as an additional aim of the study (Shaver and Tarpy, 1993). The philosophical fundamentals of psychology discuss two key relationships which exist between the body (observable behaviour) and the mind (thought processes). The most recognised is Cartesian dualism, which explains that the body and the mind are separate. The mind is discussed to have two main functions: understanding and will (Shaver, 2012a). Understanding takes place from examining ideas. Will guides the movements of the body. The second view is Monism, which explains that the body and the mind are one. Following this view, there are two main versions established in modern psychology. The first version is materialist identity theory (developed by Thomas Hobbes), which describes that the mind is the body. The second version is functional materialism, which describes that the function of computers is similar to the functions performed by the human mind.

Trevelyan (2011) discusses that there is a lack of research on entrepreneurial effort and motivation. Entrepreneurs are continuously required to perform multiple tasks; thus, they are regularly expected to make decisions about how to allocate time and resources (effort) most effectively. Therefore, gaining further insight into entrepreneurial effort is fundamental, as this persistent and vigorous effort (Gielnik, Spitzmuller, Schmitt, Klemann and Frese, 2015) allows entrepreneurs to transform their ideas into successfully operating new ventures. Entrepreneurs' tendency to act is crucial to the entrepreneurial process, as, without effort by entrepreneurs, entrepreneurship, and new ventures would not exist (Baron, 2007).

Hudson (2012) explains that entrepreneurial effort is not always towards the goal of achieving profit. More often, entrepreneurial effort is understood as 'the creation of newness' (Rindova, Barry and Ketchen Jr, 2009). Emancipation is explained to be

the primary motivation for effort by entrepreneurs, which is "the act of setting oneself free from another's control and changing one's environment in more than just economic terms" (Hudson, 2012, p. 15).

In conclusion, it is important to acknowledge that entrepreneurship is not a single event. Instead, it is an ongoing process which requires continuous entrepreneurial effort from the entrepreneurs.

1.3 Gap in the literature

Bateman and Barry (2012) request that further studies are required on sustaining one's effort while in the process of working towards long-term goals. Understanding what keeps entrepreneurs to persevere through building their venture is a fundamental phenomenon, and yet it is understudied (Hoang and Gimeno, 2010). Additionally, there is limited knowledge about how entrepreneurs sustain effort while they implement business opportunities (Shook, Priem and McGee, 2003). Thus, further studies are required for regulating effort while in the process of achieving long-term goals.

New venture growth is primarily through expanding enterprise scale; however, the most important goal is establishing a sustainable competitive advantage (Zhang, Sun and Lyu, 2018). New venture growth has been explained as a main issue in entrepreneurial process theory (Shane and Venkataraman, 2000); thus, it has resulted in several insightful studies. Sexton, Upton, Wacholtz and McDougall (1997) have explained that the foundation of entrepreneurship is to achieve growth of the venture, and entrepreneurial activity is highly related to venture growth.

Venture growth is a complex, uncertain, long-term goal and is a fundamental goal of most organisations (Baum, Locke and Smith, 2001). Thus far, there is an absence of extensive research on venture growth, and lack of theoretical explanations for how entrepreneurs manage entrepreneurial activities and the potential effect on venture growth (Mathias and Williams, 2018). A large amount of new venture growth literature in response to the high variance of venture growth rates has investigated the reasons why some new ventures grow more than others. However, this question disregards the importance of investigating how growth is attained (Gilbert, McDougall and Audretsch, 2006).

In the field of entrepreneurship, the empirical study of implementation intentions is relatively new; thus, there is a need to further advance understanding in this area

(van Gelderen, Kautonen, Wincent and Biniari, 2017). Implementation intention is defined as a type of intention (Adam and Fayolle, 2016), which is described as a link between an intended goal-directed behaviour and an anticipated behaviour (Brandstätter, Lengfelder and Gollwitzer, 2001; Gollwitzer, 1993; 1999).

Tasnim, Yahya and Zainuddin (2014) discuss despite commitment playing a significant role in the entrepreneurial process, there has been a lack of sufficient effort applying commitment theories into entrepreneurship research (Fayolle, 2007; Tasnim, Yahya, Mohd Nor, Said and Zainuddin, 2013). Although there have been studies showing an association between commitment and entrepreneurship, the majority of these have mainly focused on the early stages in the entrepreneurial process, at a point which individuals decide to become an entrepreneur (Carter, Gartner and Reynolds, 1996; Sinclair and Bruce, 2009).

1.4 Research aim

This study aims to contribute to the literature on new venture growth and to further our understanding of sustaining entrepreneurial effort towards long-term goals. Thus, investigating entrepreneurial effort towards venture growth tasks, which is referred to as entrepreneurial growth effort intensity (EGEI) in this study. To the best of the researcher's knowledge, this term is novel in the field of entrepreneurship.

Furthermore, it contributes to the limited number of studies which have applied implementation intention and the concept of commitment to entrepreneurship research. Through conducting a process-oriented research which acknowledges entrepreneurship as a process, this study aims to explain the variations in dynamic and fluctuating constructs, which previously have mainly been investigated as stable constructs (Dimotakis, Ilies and Judge, 2013).

To the best of the researcher's knowledge, this study is the first of its kind to measure entrepreneurial effort towards venture growth tasks and implementation intention through the application of experience sampling methodology (ESM). ESM is explained further in this chapter.

Through the implementation of ESM, this study aims to investigate the roles of implementation intention towards venture growth tasks and venture goal commitment towards venture growth on entrepreneurial growth effort intensity among early-stage entrepreneurs. It must be noted that the participants in this study have developed the intention to grow their ventures. Additionally, the effects of goal

intention towards venture growth tasks and venture growth intention have been measured to gain further insight into the relationship between intentions and entrepreneurial effort.

The research question for this study is: 'How do implementation intention and venture goal commitment affect entrepreneurial effort intensity towards venture growth tasks among early-stage entrepreneurs?' The developed conceptual framework is explained and demonstrated in Figure 2-5 as well as the study's hypotheses which are individually listed and discussed in detail in Chapter 2: Literature Review.

1.5 Research scope

The purpose of this study is to implement a process-oriented research and conduct within-individual analysis to explain within-person variations in entrepreneurial effort towards venture growth tasks over a three-month study period which consists of six waves of data collection. This type of research allows to investigate an individual's experienced states and dynamic and fluctuating factors (Dimotakis et al., 2013) such as entrepreneurial effort. Within-individual designs can provide further understanding of a phenomenon through unique insights, thus, providing a valuable contribution to the entrepreneurship literature.

The participants for this study are early-stage entrepreneurs who possess the intention towards venture growth tasks. Early-stage entrepreneurs are defined as individuals who either partly or fully own and manage a new business which is between four and 42 months old and have not paid any salaries for longer than this duration (Benyovszki et al., 2013). Ventures which are in the first 42 months are referred to as a new venture, after which they are considered to be set-up (Kelley, Bosma and Amorós, 2011). Thus, it is crucial to understand how these new ventures enter the growth phase of the venture process.

As previously mentioned, the main study variables are being measured for six waves over a three-month study period. The two intention variables which are goal intention and venture growth intention are being measured for three waves. ESM studies require significant time and commitment from the participants as they are required to respond to multiple questionnaires several times per day. In this research design, participants are required to respond to four questionnaires per day, for six consecutive days, which is then followed by three days of no questionnaires (rest

days). This process is repeated throughout the three-month study period for this research.

This study incorporates and builds on the implementation intention theory and the concept of commitment. Implementation intentions are described as if-then plans which provide details on the when, where, and how a particular behaviour will be performed (Gollwitzer, 1993; 1999; Gollwitzer and Sheeran, 2006). Implementation intentions support in initiating action, and protecting actions from other distractions (Gollwitzer, 1999), therefore, can be highly fundamental in the field of entrepreneurship (Fayolle and Liñán, 2014). The concept of commitment originates from social psychology (Becker, 1960), and is defined as an individual's willingness to strive for an explicit goal (Austin and Vancouver, 1996). It is explained as one of the most important factors to explore when investigating an individual's persistence towards their goals, as it acts as a binding force (Meyer and Herscovitch, 2001). Thus, the concept of commitment is linked to both goal intentions and actions (Adam and Fayolle, 2015).

The participants in this study consist of 19 early-stage entrepreneurs from Australia and Brazil. The participants have been recruited from various entrepreneurship events and programs, such as entrepreneurship community social events in Melbourne, entrepreneurship and innovation program (Insight Academy of Entrepreneurship & Innovation), not-for-profit organisation (Start-up VIC) and GVentures program at Fundação Getúlio Vargas (FGV) Business School in Brazil, where the researcher has spent time working on their study as a visiting scholar.

1.6 Justification of methodology

This study has implemented experience sampling methodology (ESM) using smartphone-based design, to send the notification prompts and receive the responses from the participants. Thus, the responses collected from the participants have been through an application installed on their mobile phone devices, which is called 'RealLife Exp', and is explicitly designed for ESM research by Life Data.

ESM (Delespaul, 1995; Larson and Csikszentmihalyi, 1983), is also referred to as ecological momentary assessment (EMA) (Stone and Shiffman, 1994). This methodology is a specialist diary-based questionnaire which collects responses from participants for multiple times throughout their day. Therefore, it differentiates from traditional surveys and interviews which are usually conducted at the beginning and

end of the study period. This method allows for innovative ways of conducting research, and provides more in-depth and significant contributions due to the further development in the ESM technology and concepts (Dimotakis et al., 2013).

The ESM research design used for this study was signal-based, which involved delivering the notification prompts to the participants at preselected random schedules, to measure the fluctuation of the study's dynamic constructs on multiple occasions. The signal-based design has allowed for the investigation of within-individual experiences among the early-stage entrepreneurs thoroughly and comprehensively.

It is fundamental to understand within-person variability, as dynamic variables display change patterns within the individual entrepreneur over time. Davidsson and Wiklund (2007) state that there is a lack of empirical studies focusing on within-individual relationships. Research focusing on entrepreneurial activity should not measure performance between entrepreneurs; rather, it should make comparisons of performance assessments of the same individual entrepreneur over time. Additionally, process-oriented research is crucial in contributing to the study of entrepreneurship (Shane and Venkataraman, 2000). However, this type of research is scarce due to methodology. Common methodological tools such as one-time surveys cannot thoroughly examine processes unfolding over time, as they measure relationships in a static manner (Uy, Foo and Aguinis, 2010).

Due to the multiple measures in ESM studies, the total sample size is the total number of data points, which makes it sufficient in statistical analyses that focus on modeling within-individual relationships (Uy et al., 2010). The total number of data points collected for this study is 1,955 (total number of valid responses received) from 19 early-stage entrepreneurs.

1.7 Reasoning for analysis technique

The ESM data collected is clustered data, as there are multiple observations nested within each participant. Accordingly, the unit of analysis are the individuals. Therefore, the analysis which is conducted is multilevel regression modeling using the statistical software Stata version 16.0. The first part consists of univariate multilevel regressions to investigate direct associations. The second part consists of multivariable multilevel regressions with all the study variables being adjusted for, thus, controlling for potential effects of all relevant variables on the dependent

variable which is entrepreneurial growth effort intensity (EGEI). Multilevel regression modeling has been used to analyse the nested structure of ESM data, as this analysis method is used for data which have hierarchical or clustered structure.

The application of interaction terms in the multilevel regressions is used to investigate the moderating effect of goal intention and strength on the impact of implementation intention towards venture growth tasks and venture goal commitment towards venture growth on entrepreneurial growth effort intensity. Multilevel structural equation modeling (MSEM) is used for estimating the mediation of implementation intention and venture goal commitment on the effects of goal intention and venture growth intention on entrepreneurial growth effort intensity. MSEM has accounted for measurement error and has managed missing data in the modeling process.

The analysis for this study was conducted with the guidance of a statistics expert, with experience in structural equation modeling and using the software Stata. Their guidance has assisted in an extensive and thorough analysis. As a result, the researcher has been able to significantly enhance knowledge and skills in statistical analysis and interpretation of results.

1.8 Contributions of this study

The findings of this study expect to provide further insight into sustaining entrepreneurial effort towards venture growth, which may assist in improving the rate of new ventures entering the venture growth stage. As previously mentioned, gaining a more thorough knowledge of entrepreneurial effort is crucial as without the actions performed by entrepreneurs, entrepreneurship would not exist.

The positive association between implementation intention in specific towards venture growth tasks on entrepreneurial effort towards venture growth, provides valuable knowledge for entrepreneurship educators and those training prospective entrepreneurs. Educators and trainers could assist entrepreneurs in developing more effective and strategic implementation intentions to promote entrepreneurial effort (Fayolle, Liñán and Moriano, 2014) towards venture growth tasks.

The findings have shown a negative association between venture goal commitment and entrepreneurial growth effort intensity. This finding also provides a valuable insight for entrepreneurship educators and incubator directors. The negative association may indicate that venture growth tasks are perceived as more complex

and overwhelming in comparison to venture creation tasks. Thus, this may lead to action uncertainty regardless of early-stage entrepreneurs possessing venture goal commitment.

This finding also highlights the importance of developing effective and clear implementation intentions focusing on venture growth tasks. Additionally, the findings also suggest that among early-stage entrepreneurs, venture goal commitment may be partial rather than total. Thus, educators, trainers and support providers must encourage these entrepreneurs to allocate more time, energy, and resources towards venture growth tasks.

1.9 Definitions of study's core constructs

Table 1-1 illustrates the definitions provided for each of the study's core constructs. The importance of defining these constructs clearly is discussed in Chapter 5: Discussion, Recommendations, and Conclusion.

Table 1-1: Definitions for the study's core constructs

Construct	Definition	Reference
Early-stage entrepreneurs	Individuals who either partly or fully own and manage a new business which is between four and 42 months old and have not paid any salaries for longer than this duration.	Benyovszki et al., 2013
Goal intention	Mental representations of desired outcomes, and individuals with goal intentions have a set of instructions to the self to act to realise those outcomes. The outcomes in this study are venture growth tasks.	Toli et al., 2016
Venture growth intention	Desire towards growth of the venture within the next coming month.	Researcher
Entrepreneurial effort intensity	Consists of the degree of hard work on both administrative and creative tasks relating to operating a venture.	Morris et al., 2009
Entrepreneurial growth effort intensity	Entrepreneurial effort intensity towards venture growth tasks which are performed to achieve the goal of new venture growth.	Researcher
Implementation intention	If-then plans which provide details on the when, where, and how a particular behaviour will be performed.	Gollwitzer, 1993; 1999; Gollwitzer and Sheeran, 2006
Venture goal commitment	Entrepreneurial commitment towards venture growth. Entrepreneurial commitment is "the moment when the individual starts devoting most of his or her time, energy, and financial, intellectual, relational and emotional resources to his or her project."	Fayolle et al., 2011, p. 161

1.10 Delimitations

There are four main delimitations in this study. The first delimitation is the inclusion of early-stage entrepreneurs only. It has been discussed that there is a relative scarcity of new venture growth, as only a small number of ventures grow (Gilbert et al., 2006). Thus, investigating entrepreneurial effort towards venture growth tasks in early-stage entrepreneurs would provide a valuable insight into sustaining entrepreneurial effort, planning, and commitment towards venture growth among entrepreneurs who possess the intention to grow though, they have not yet achieved growth.

The second delimitation is setting entrepreneurial growth effort intensity as the outcome variable. A determinant of venture progress is the effort invested by the entrepreneurs. Thus, the more the venture is acted on, the higher the probability of the achievement of a positive outcome such as growth (Edelman and Yli-Renko, 2010; Lichtenstein, Carter, Dooley and Gartner, 2007). Entrepreneurs are explained as individuals who act through engaging in persistent efforts to transform their ideas into ventures. This persistence and tendency to act is crucial to the entrepreneurial process, as, without action, entrepreneurship would not exist (Baron, 2007).

The third delimitation is the focus of the investigation on the mediation effects of implementation intention towards venture growth tasks and venture goal commitment towards venture growth. The focus on implementation intention is due to previous studies indicating that implementation intention can assist the transition from intention to action (Carraro and Gaudreau, 2013; Gollwitzer and Sheeran, 2006). Furthermore, implementation intention has positively impacted on fundamental challenges relating to goal attainment, such as getting started, not being distracted by competing goals, and sustaining energy and time for the pursuit of subsequent goals (Gollwitzer, 2014; Gollwitzer and Sheeran, 2006). The focus on venture goal commitment is due to commitment being recognised as a strong force which encourages entrepreneurs to continue being entrepreneurial. Furthermore, commitment binds the entrepreneurs to their goals, thus, resulting in behavioural acts which increase entrepreneurial performance (Tasnim and Singh, 2016).

Lastly, the fourth delimitation is the array in the geographic location of the participants in this study. The researcher has been based in Australia for the majority of time during the completion of this study; therefore, the majority of the participants are from Australia. Additionally, the researcher has had the opportunity to visit Fundação Getúlio Vargas (FGV) Business School in Brazil as a visiting scholar; therefore, the second-largest portion of the participants are from Brazil. These participants have been recruited from a program on developing ventures for entrepreneurs offered by FGV. Consequently, participants in this study are from Australia and Brazil.

1.11 Outline of the thesis

This thesis consists of five chapters as shown in Figure 1-2. These chapters include:

Chapter 1 – Introduction:

This is the opening chapter in this thesis and provides an overview and introduction to this study. The main discussions covered include background to the research, gap in the literature, research aim, research scope, justification of methodology and analysis technique. This chapter then continues with explaining the study's contributions, definitions for the core constructs, and delimitations.

Chapter 2 – Literature Review:

This chapter provides a systematic literature review focusing on research investigating entrepreneurial behaviour, sustaining entrepreneurial effort and new venture growth. This systematic literature review has ensured the inclusion of related, reliable, and objective studies and findings, thus, eliminating a subjective review of convenient studies. This chapter provides an in-depth review of the study's core constructs being investigated: entrepreneurial growth effort intensity, implementation intention, venture goal commitment, goal intention and strength, and venture growth intention. The two main contributing theories implementation intention theory and the concept of commitment are reviewed, and their application in this study is discussed. Lastly, this chapter discusses the conceptual framework developed for this study.

Chapter 3 – Methodology:

This chapter begins by explaining the research process for this study, as defined by Saunders (2012). This study holds the philosophy view of logical positivism and uses the deductive approach. Furthermore, the data collection techniques are discussed, which provides a thorough explanation of experience sampling methodology (ESM) and its implementation considerations. The validated scales for each of the study's variables are discussed, including the reliability and internal consistency of the measurements. This chapter concludes by discussing the analytical techniques used for the collected data using the statistical software Stata version 16.0.

Chapter 4 – Results and Analysis:

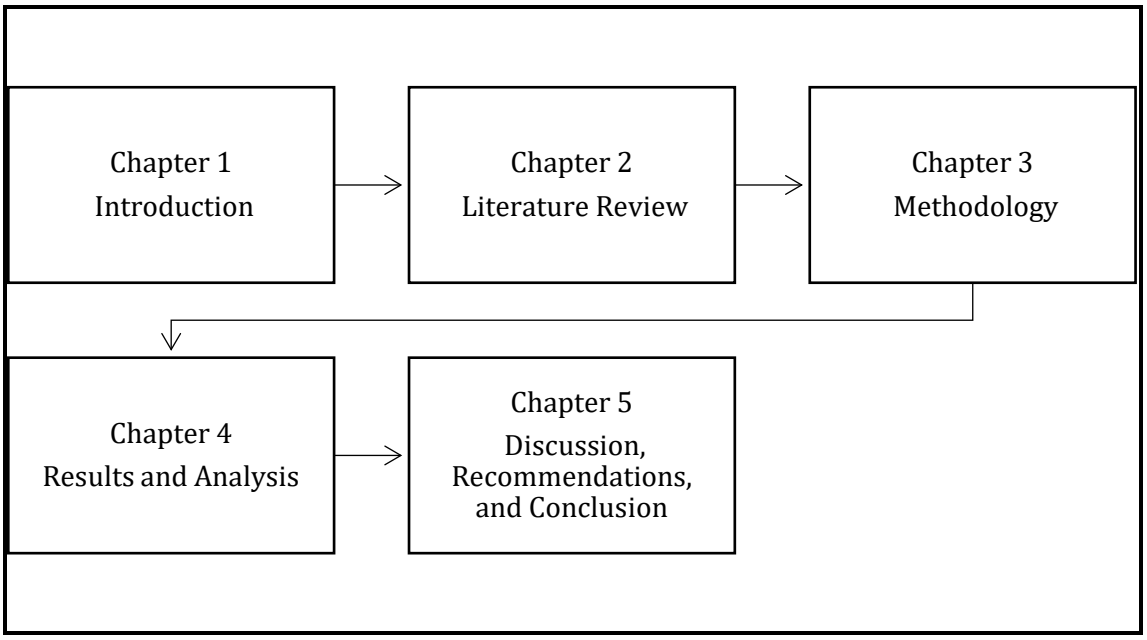
This chapter explains the results for each part of the analysis conducted for this study. The total data summary, which is an overview of the study's ESM statistics, is provided, followed by examining the missing data. The descriptive statistics of the continuous and categorical variables and the correlations are explained. Results of the multilevel regression models are provided which show all the study variables and

their associations with entrepreneurial growth effort intensity. Furthermore, the results of the moderating effects are presented through the application of interaction terms in the models. The final part of the analysis shows the results of the multilevel structural equation modeling (MSEM) for estimating mediation. The chapter concludes by revealing the results of the tests conducted for assumptions of linear regression.

Chapter 5 – Discussion, Recommendations and Conclusion:

This is the final chapter for this thesis which starts with a discussion on the missing data to provide further insight into ESM research and results. The control variables are reviewed, followed by a focus on the within-person and between-person effects and random coefficients which have been analysed in the regression models. Each of the hypotheses are discussed with a thorough explanation of the results. The results of the open-ended questions for the venture growth intension measurement are summarised and discussed. This chapter concludes by discussing the theoretical and practical implications, limitations and recommendations for future research.

Figure 1-2: Outline of the thesis



1.12 Chapter conclusion

This chapter has introduced the research background on the phenomenon of entrepreneurial actions, and the importance of sustaining entrepreneurial effort for the long-term and uncertain goal of venture growth. The relevant gaps in the

literature are identified and explained, which have driven the research aim and scope of this study.

Furthermore, this chapter has provided explanations for the justification of implementing experience sampling methodology (ESM) and conducting multilevel regression modeling for the analysis of the clustered data. The contributions of this study are discussed, followed by definitions for the study's core constructs. This chapter concludes with a thorough explanation of the study's delimitations and a summary outline of the thesis.

The following chapter is Chapter 2: Literature Review.

Chapter 2: Literature Review

2.1 Chapter introduction

This chapter provides the literature review for this study. Figure 2-1 illustrates the chapter structure. A comprehensive systematic review of the literature has been conducted to gain insightful knowledge on the research topic, and to ensure the studies and findings included from scholars are reliable and objective, eliminating a subjective review of convenient studies.

This chapter begins by providing a thorough explanation of entrepreneurship with a focus on the importance of entrepreneurs taking action as this leads to the creation and growth of new ventures. The term entrepreneuring is introduced to emphasise that entrepreneurship is a process which occurs through time, and entrepreneuring reflects this time dimension and demanding goal-directed behaviour performed by entrepreneurs. Early-stage entrepreneurs who are the participants in this study are clearly defined as per Benyovszki, Nagy and Petru (2013).

The first main concept, which is introduced and discussed is entrepreneurial intentions. The discussion on intentions includes goal intention and venture growth intention. The second main concept is entrepreneurial action, which includes discussion on activities and behaviour. Entrepreneurial growth effort intensity which is the outcome variable in this study, is explained as a dynamic and fluctuating variable. Many prominent scholars have investigated the link between entrepreneurial intention and behaviour to improve the understanding of both these concepts, and thus, this chapter provides a thorough review of past studies. The relationship between goal intention and venture growth intention with entrepreneurial growth effort intensity is investigated to provide further insight into this relationship.

Moreover, the literature review focuses on new venture growth and provides an in-depth review of the findings of prior studies investigating this phenomenon. Discussions are focused on resources and factors which have been found to contribute to the growth of new ventures.

The theoretical framework for this study is developed on the implementation intention theory and the concept of commitment, which have been applied to the research question and hypotheses. This chapter concludes by illustrating and

explaining the conceptual framework and a summary of the hypotheses for this study. The conceptual framework is divided into two parts: Part A investigates the moderating effect of goal intention and strength on the impact of implementation intention towards venture growth tasks and venture goal commitment towards venture growth on entrepreneurial growth effort intensity. Part B investigates the mediation of implementation intention and venture goal commitment on the effects of goal intention and strength and venture growth intention on entrepreneurial growth effort intensity. This part also investigates the direct effects between the variables and entrepreneurial growth effort intensity (please see Figure 2-5).

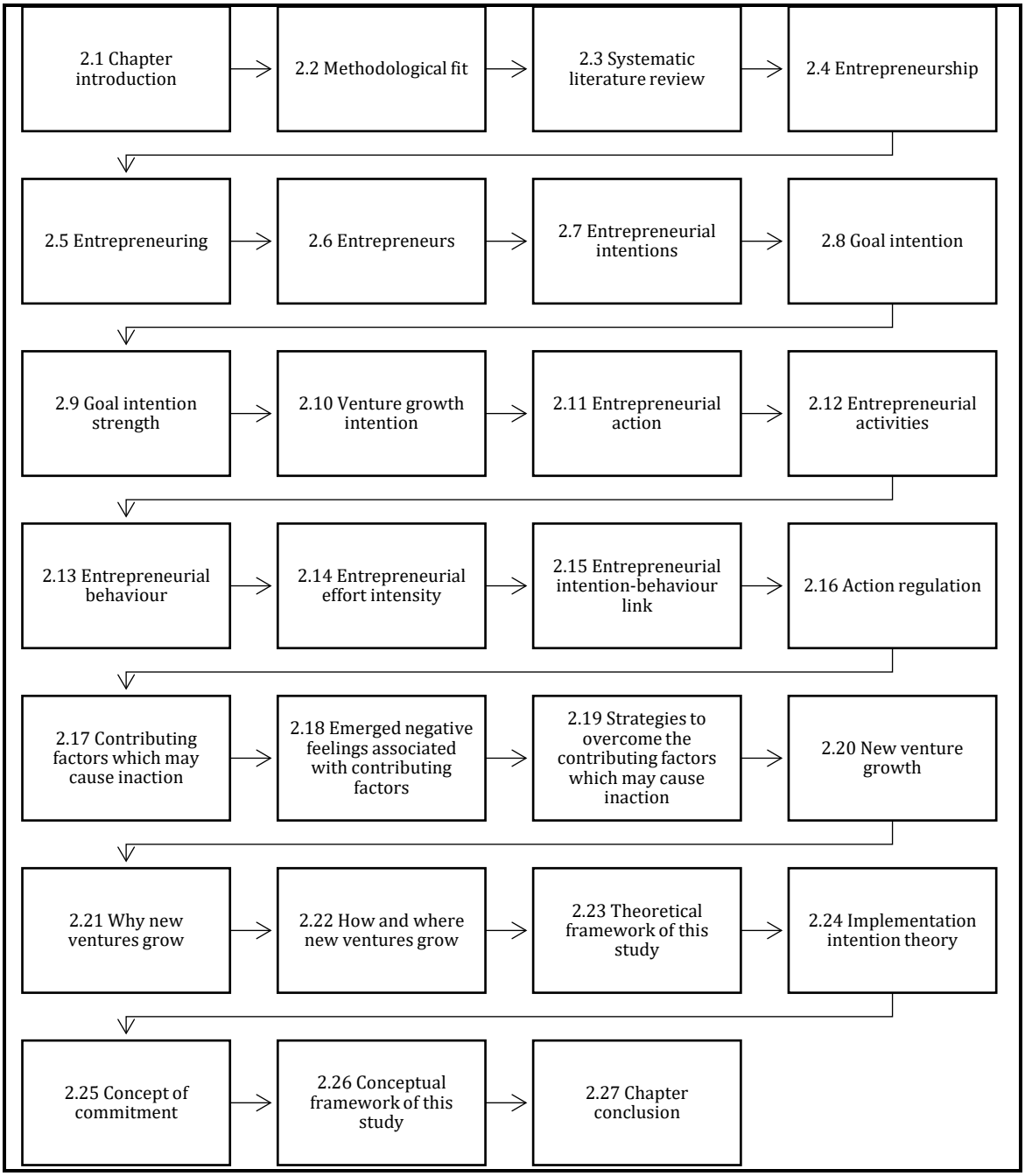
2.2 Methodological fit

It is fundamental for a study to establish and design a methodological fit which forms the foundation of the research. Methodological fit is defined by Edmondson and McManus (2007) as an internal consistency between the elements of a research project. There are four key elements: (1) research question, (2) prior work, (3) research design, and (4) contribution to literature.

The research question must be focused so that it centres the research topic in a significant and manageable size. Comprehensive knowledge of prior work is crucial to gain an understanding of current and existing theoretical and empirical studies which are highly relevant to the topic being investigated. This knowledge allows us to identify questions, areas, and constructs, which are underexplored, and require further insight. The research design is also a crucial element as effective decisions need to be made regarding the type of data which needs to be collected, the methodology and procedures, analytical techniques and sample type and characteristics. Lastly, contribution to literature could be achieved through developing new ideas which challenge conventional assumptions and conclusions. It can also be achieved through developing new models which contribute to the understanding of a phenomenon. Furthermore, practical insights and recommendations provided by researchers is a valuable aspect of exchanging the findings and knowledge gained through research.

In well-designed research, the above key elements are interrelated and mutually reinforcing. Edmondson and McManus (2007) discuss that despite the importance of a methodological fit in every study, it is at times neglected by researchers who do not realise the inconsistencies that occur between their research aims and methodology.

Figure 2-1: Literature review chapter structure



2.3 Systematic literature review

This study has conducted a systematic literature review, which is a method used to make sense and synthesise a large amount of information. A systematic literature review allows to map out areas which contain uncertainty, and therefore, in turn, allows to identify specific areas or topics which limited research has been conducted and where new studies are required (Petticrew and Roberts, 2008).

A systematic review provides a highly reliable and efficient method of evaluating a large amount of data (Hart, 1998). Petticrew and Roberts (2008) explain that traditional literature reviews often tend to summarise unrepresentative study samples in a highly unsystematic and uncritical way. As a result, literature reviewers tend to fail to practice scientific principles during the process of reviewing the research evidence, which could lead to conclusions which are bias.

A key difference between a traditional literature review and a systematic literature review is the process involved in gathering and analysing the available information (Tranfield, Denyer and Smart, 2003). In a traditional literature review, the implicit bias of researchers plays a fundamental role in the selection of the studies and publications. On the other hand, in a systematic literature review selection of publications follows a clear set of rules.

A second key difference is the transparency of the process as well as the analysis of the information. Traditional reviews provide a descriptive summary of contributions, while systematic reviews use a priori design to analyse the information and provide a critical valuation (Hart, 1998). In summary, a systematic review makes clear the values and assumptions put into place during the evaluation of the literature. As a result, the research provides a clear audit trail which allows the review to be replicated, with a close alignment of the systematic review with the scientific enquiry practice (Belitski and Heron, 2017).

Therefore, this study has provided a comprehensive systematic literature review to ensure that the inclusion of related literature on this research topic is thorough, objective, and reliable, rather than a subjective review of convenient studies.

2.3.1 Stage 1: Need, scope and aim of literature review

The literature and the research question for this study have guided the succeeding stages of this systematic review. The aim of this literature review has been to gain a thorough insight into the relevant and current studies which have investigated entrepreneurial action, behaviour, and effort towards the goal of new venture growth.

In specific looking at studies which have measured entrepreneurial behaviour from a dynamic perspective. Furthermore, this study has implemented process-oriented research to investigate the effects of implementation intention and venture goal commitment on entrepreneurial effort towards venture growth tasks.

2.3.2 Stage 2: Search strings and coarse-grained criteria

The second stage of a systematic review requires developing key search strings as illustrated in Table 2-1, and a set of coarse-grained criteria to establish which publications are eligible for inclusion within the list of potential publications to review (Belitski and Heron, 2017).

This study has initially conducted a general search of the literature available on this research topic using various electronic databases in order to develop an overall understanding of most related studies and publications. Following the general search, the publications have then been derived from the following two electronic databases: Web of Science (ISI) and Business Source Complete. Web of Science (ISI) has been selected as it provides access to Science Citation Expanded, Social Sciences Citation Index, and Arts & Humanities Citation Index. It allows users to search multidisciplinary information from approximately 8,500 of the most prestigious as well as high impact research journals worldwide. Furthermore, Web of Science (ISI) provides a unique method for searching, which is cited reference searching. This allows researchers to navigate backward and forward through the literature, to search through all related disciplines and time spans to access all the information relevant to the research area (La Trobe University, 2019c).

Business Source Complete is the second electronic database selected for this research as it provides top peer-reviewed business-related journals, indexing and abstracts from highly significant scholarly business journals, dating back to 1886 (La Trobe University, 2019b).

The key search strings have been developed by identifying highly cited publications in highly ranked journals and detecting keywords provided by authors, as well as using the thesaurus option within both electronic databases.

Table 2-1: Key search strings

Key Search Strings	
1 - Entrepreneurial effort	**6 -** Implementation intentions
2 - Entrepreneurial behaviour	**7 -** Commitment
3 - Entrepreneurial intentions	**8 -** Entrepreneurial commitment
4 - Goal intention	**9 -** Venture goal commitment
5 - Growth intention	**10 -** Venture growth

The next step in the second stage, has defined the coarse eligibility criteria, which includes; subject areas, publication type and the timeline for the reviews, as illustrated in Table 2-2.

As mentioned previously, the search has been restricted in terms of subject area, which include entrepreneurship, general management, psychology, innovation, strategy, business and economics, economic development, organisational behaviour, venture capital and start-ups. These subject areas are key areas which provide rich insight relating to entrepreneur and human behaviour in specific towards achieving desired goals and outcomes.

Furthermore, the search was restricted by publication type, which includes only; peer-referred journals, books, conference papers, theses, book chapters, and special edition issues. This restriction has been placed as per recommendations made by Tranfield et al. (2003), thus, excluding conference proceedings, unpublished studies and internet publications which are beyond the journals of the practitioners. Armstrong and Wilkinson (2007), explain that journals which aim to publish authoritative reviews in the disciplines of entrepreneurship and general management encourage contributors to draw on highly rigorous empirical research, which is likely to be published in peer-reviewed journals. Therefore, the majority of the empirical studies included in this systematic review have been obtained from peer-reviewed journals.

The timeline specified for this study contains sources published between the year 2000 to 2019. Search alerts have been set up in Web of Science (ISI) and Business

Source Complete, which have allowed this research to include most recent published studies.

Table 2-2: Coarse-grained inclusion/exclusion criteria

Decision variables	Inclusion criteria	Exclusion criteria
Subject areas	Entrepreneurship, general management, psychology, innovation, strategy, business and economics, economic development, organisational behaviour, venture capital, start-ups	Corporate entrepreneurship, finance, small business
Publication type	Peer-referred journals, books, conference papers, theses, book chapters, special edition issues	All internet publications, non-peer-refereed journals, unpublished studies, conference proceedings (exception is 2009 ICSB World Conference Proceedings)
Period of coverage	2000-2019	N/A
Electronic databases	Web of Science (ISI), Business Source Complete	N/A

2.3.3 Stage 3: Fine-grained criteria

The fine-grained criteria have been slightly different in each of the two selected electronic databases, due to the advanced search options available within each of the database platforms.

2.3.3.1 Fine-grained criteria: Web of Science (ISI)

The first option selected in the Web of Science (ISI) platform is the Web of Science Core Collection in order to ensure that the search results ran within the complete collection available in this database. Within the 'Advanced Search' tab, the following have been selected; English as language, article as document type and timespan (2000-2019) for all initial searches as illustrated in Table 2-3.

Table 2-3: Fine-grained results for key search strings in Web of Science (ISI)

Key search strings	Search terms	Field tags	No. publications (initial search)	No. relevant publications
Entrepreneurial effort	(TS=(entrepreneurial effort* OR entrepreneurial effort intensity* OR sustained entrepreneurial effort*))	TS=Topic	818	2
Entrepreneurial behaviour	(TS=(entrepreneurial behaviour* OR entrepreneurial action* OR entrepreneurial activity*))	TS=Topic	3,228	12
Entrepreneurial intentions	(TS=(entrepreneurial intentions* OR intentions* OR intentional behaviour* OR theory of planned behaviour*))	TS=Topic	42,822	15
Goal intention	(TS=(goal intention* OR entrepreneurial goal intention*))	TS=Topic	6,862	10
Growth intention	(TS=(growth intention* OR entrepreneurial growth intention*))	TS=Topic	4,354	7
Implementation intentions	(TS=(implementation intentions* OR theory of implementation intentions* OR entrepreneurial implementation intentions*))	TS=Topic	5,681	7
Commitment	(TS=(commitment* OR concept of commitment*))	TS=Topic	76,449	2
Entrepreneurial commitment	(TS=(entrepreneurial commitment* OR committed to entrepreneurial performance*))	TS=Topic	419	5
Venture goal commitment	(TS=(venture goal commitment* OR venture goal* OR goal commitment*))	TS=Topic	6,053	3
Venture growth	(TS=(venture growth* OR new venture growth* OR growing ventures*))	TS=Topic	2,861	7

The second stage of the fine-grained criteria has involved sorting the publications in each of the key search strings by relevance to ensure that the studies which have been reviewed are most relevant and aligned with the research aims of this study. The top 30 relevant publications in each key search string were then evaluated through reading the abstract and introduction of each paper, after which the most relevant have been selected, as shown in Table 2-3. The initial process yielded 149,547 publications; only 70 publications met all the specified criteria.

2.3.3.2 Fine-grained criteria: Business Source Complete

The initial stage of search in Business Source Complete involved selecting search mode as Boolean/Phrase. Boolean logic defines logical relationships between search terms. The search operators 'OR' and 'AND' are available, depending on the logic of the search terms. The search operator 'OR' has been selected as it combines search terms so that each search result contains at least one of the search terms, therefore, providing a more extensive search outcome. The search operator 'AND' combines search terms so that each search result contains each of the terms included in the search.

Furthermore, the following criteria have been selected; scholarly (peer-reviewed) journals, English language, document type as article, and published date (2000-2019). These criteria generated results for the initial search, which is illustrated in Table 2-4.

Table 2-4: Fine grained results for key search strings in Business Source Complete

Key search strings	Search terms	No. publications (initial search)	No. relevant publications
Entrepreneurial effort	entrepreneurial effort* OR entrepreneurial effort intensity* OR sustained entrepreneurial effort*	141	10
Entrepreneurial behaviour	entrepreneurial behaviour* OR entrepreneurial action* OR entrepreneurial activity*	1,466	11
Entrepreneurial intentions	entrepreneurial intentions* OR intention* OR intentional behaviour* OR theory of planned behaviour*	28,065	13
Goal intention	goal intention* OR entrepreneurial goal intention*	229	4
Growth intention	growth intention* OR entrepreneurial growth intention*	62	12
Implementation intentions	implementation intentions* OR theory of implementation intentions* OR entrepreneurial implementation intentions*	110	3
Commitment	commitment* OR concept of commitment*	25,462	3
Entrepreneurial commitment	entrepreneurial commitment* OR committed to entrepreneurial performance*	52	8
Venture goal commitment	venture goal commitment* OR venture goal* OR goal commitment*	444	6
Venture growth	venture growth* OR new venture growth* OR growing ventures*	432	14

The second stage of the fine-grained criteria has involved sorting the publications by relevance in each of the key search strings, to ensure highly relevant material is reviewed. Following this, the top 30 relevant publications in each key search string were evaluated through reading the abstract and introduction for each journal paper and once again the most relevant have been selected as shown in Table 2-4. The initial process yielded 56,463 publications; 84 publications met all the specified criteria.

2.3.4 Stage 4: Data extraction

In the final stage, a total of 47 highly relevant publications have been selected from the electronic databases of Web of Science (ISI) and Business Source Complete. Data has been extracted from these publications following Hart (1998) and Tranfield et al. (2003) suggestions on extracting reliable and valid reviews which are driven from standardised pre-determined criteria for data abstraction which for this study include; significant findings, theoretical frameworks, success factors and challenges.

The next section of this chapter begins with a discussion of the literature on the field of entrepreneurship, then focuses on the constructs and theories applied in this study.

2.4 Entrepreneurship

Entrepreneurship is described to be one of the fastest-growing fields in management research, and is now increasingly referred to in economics, sociology, finance, anthropology and law. Entrepreneurship became a Division (specialised interest group) within the Academy of Management in 1987; furthermore, it now has its own subject code (L26) in the *Journal of Economic Literature* classification scheme (Foss and Klein, 2012).

Furthermore, under the Australian Research Council (ARC), Excellence in Research for Australia (ERA) has recognised and ranked the journals in the field of entrepreneurship under section 1503 (Business and Management) (Lamp, 2010).

Entrepreneurship or the individual entrepreneur has over the years been defined with various elements of focus: generating and utilising new information about how to satisfy consumers more efficiently (Schumpeter, 1942); the creation of a new business (Shapero, 1972); the recognition of pure profit opportunities (Kirzner, 1978); pursuing opportunities (Stevenson and Jarillo, 1990); entering self-employment (Katz, 1992); the recognition and exploitation of entrepreneurial

opportunities (Venkataraman, 1997; Shane and Venkataraman, 2000); the undertaking an enterprise and acting as an intermediary between labour and capital (Jean Baptiste in Hébert and Link, 2009); and the undertaking of business risk and initiative toward the generating of profit (Cantillon in Hébert and Link, 2009). Moreover, Shane and Venkataraman (2000, p. 218) define the field of entrepreneurship as "the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited".

Each of the above definitions demonstrate a common understanding which is entrepreneurship occurs when a specific action relating to venture creation is performed by the individual. However, despite this fundamental common ground, the regular practice in the field of entrepreneurship, is to study people or firms rather than the specific actions and processes of entrepreneurship itself (Corbett and Katz, 2012). Thus, it is important to emphasise that entrepreneurship in all its various forms, which may include; an individual in a garage, a manager in a corporation, a scientist in a university, a benefactor starting a social venture, and may other possible expressions, begins with performing entrepreneurial action. Although thought and some planning may be necessary, they are not sufficient. To achieve sufficiency, entrepreneurship requires action (Corbett and Katz, 2012).

2.4.1 Concepts of entrepreneurship

Entrepreneurship theories can be divided into occupational, structural, and functional perspectives (Klein, 2008a). Occupational theories define entrepreneurship as self-employment, thus, with a focus on treating the individual as the unit of analysis, describing the entrepreneurial characteristics of individuals who start their own ventures and explaining the choice existing between employment and self-employment (Parker, 2004; Shaver and Scott, 1991). Occupational choice within the labour economics literature and personal characteristics of individuals who chose to become self-employed within the psychological literature fit in this category. For example, McGrath and MacMillan (2000) explain that some individuals possess an 'entrepreneurial mindset' which allows and encourages them to identify opportunities which are overlooked or ignored by others, furthermore, that this mindset is developed through experience, rather than through formal training. In this sense, being an entrepreneur means having a particular job title. Thus, in empirical

research, self-employment is a common measure of entrepreneurship, as it is easy to measure.

Structural approaches view the firm or industry as the unit of analysis and define the 'entrepreneurial firm' as a new or small firm. The literature existing on industry dynamics, growth of firms, clusters, and networks are based on a structural concept of entrepreneurship (Acs and Audretsch, 1990; Audretsch, Keilbach and Lehmann, 2005). The concept that one firm, industry, or economy can become more 'entrepreneurial' suggests that entrepreneurship is related to a specific market structure. As this view is similar to occupational concepts, the popular use of structural concepts of entrepreneurship within the research literature may be dependent on data availability such as information on new ventures, venture funding, IPOs, firm size and age, which are mainly provided by statistical agencies (Foss and Klein, 2012).

By contrast, the contributions made to the economic theory of entrepreneurship from scholars such as Schumpeter, Knight, Kirzner, Mises and others model entrepreneurship as a function, behaviour, or activity rather than an employment category or market structure. Therefore, they are usually focused on behaviours within the context of a process. On the other hand, occupational and structural concepts mainly focus on outcomes while not considering processes. Although, outcomes are most often used within the entrepreneurship research literature, self-employment and start-ups do not fit easily into these more general functional concepts. Entrepreneurial thinking can be developed in large and small firms, in old and new firms, by individuals or groups, across a large variety of occupational categories.

2.4.2 Entrepreneurial functions

The seven main entrepreneurial functions, as illustrated in Table 2-5, are discussed in this section.

Table 2-5: Summary of entrepreneurial functions

Entrepreneurial functions
1. Entrepreneurship as small-business management **2.** Entrepreneurship as imagination or creativity **3.** Entrepreneurship as innovation **4.** Entrepreneurship as alertness to opportunities **5.** Entrepreneurship as the ability to adjust **6.** Entrepreneurship as charismatic leadership **7.** Entrepreneurship as judgment

2.4.2.1 Entrepreneurship as small-business management

In many business schools, the entrepreneurship curricula consider this phenomenon as small-business management. Thus, entrepreneurs are viewed as managers of small, family-owned businesses or start-up companies. Entrepreneurship involves management tasks, building relationships with venture capitalists and external sources of finance, product development, marketing, and so on. Thus, in this sense entrepreneurship and the theory of the firm are inextricably related. In this approach, the theory of entrepreneurship is the theory of how small business owners manage their assets. Most entrepreneurship programs focus on writing business plans and making elevator pitches to investors (Foss and Klein, 2012).

While these are all fundamental activities, limiting the entrepreneurship phenomenon to small-business management results in a narrow as well as a broad perspective of entrepreneurship. It limits 'entrepreneurial' to all aspects of small or new business management and excludes all the tasks performed within large or established organisations. Although much of the literature has progressed on from this initial conception more than two decades ago, it still holds true within universities. The reason is that entrepreneurship courses are designed for students who intend to start or have started a venture, and they need to comprehend the related management issues which develop as a result.

Entrepreneurial behaviour within the context of established firms is covered in other courses in the business curriculum which most often do not have the word 'entrepreneurship' in their titles, for example, 'innovation management' or 'corporate renewal'.

2.4.2.2 Entrepreneurship as imagination or creativity

Often within the management research literature, entrepreneurship is associated with daring, boldness, imagination, or creativity (Aldrich and Wiedenmayer, 1993; Lumpkin and Dess, 1996). These descriptions emphasise both the personal and psychological characteristics of entrepreneurs. This perspective holds that entrepreneurship is not a necessary component of decision-making among all humans, but a specialised activity which some individuals are better equipped to perform.

If these characteristics are the fundamental elements of entrepreneurship, then this phenomenon has no direct link to the theory of the firm. Thus, the required personal characteristics may be attained on the market through contracts purchasing project management, consulting services and so on. An owner or manager who is 'non-entrepreneurial', can, therefore, perform daily operations of the firm, and purchase 'entrepreneurship' on the market as required. In conclusion, the literature does not thoroughly explain whether imagination and creativity are necessary fundamental elements for entrepreneurship (Foss and Klein, 2012).

2.4.2.3 Entrepreneurship as innovation

One of the most well-known entrepreneurship concepts among economists is Joseph Schumpeter's explanation of viewing the entrepreneur as the innovator. Schumpeter focuses on 'new combinations' – new products, markets, methods of production, supply sources, or industrial combinations – disrupting the economy out of its current equilibrium through a process termed as 'creative destruction'. Thus, viewing the entrepreneur as the core source of economic change, which may include, but not limited to, the creation of new ventures.

The modern literature mainly focuses on modeling small, continuous changes, while Schumpeter attempts to explain fundamental, discontinuous changes in both technologies and markets. Furthermore, Schumpeter gave little attention to natural selection, considering the successful innovation as the unit of analysis (Foss and Klein, 2012).

Additionally, Schumpeter clearly distinguished the entrepreneur from the capitalist. Explaining that the entrepreneur does not require to own capital, or even operate within the confines of a firm. While it is possible for the entrepreneur to be a manager or owner of a firm, he/she is more likely to act as an independent contractor or craftsman. Schumpeter's conception states: "people act as entrepreneurs only when they actually carry out new combinations, and lose the character of entrepreneurs as soon as they have built up their business, after which they settle down to running it as other people run their businesses" (Ekelund Jr and Hebert, 1990, p. 569).

This proposes a problematic relationship between the entrepreneur and the firm for which they own, manage, or contract. Entrepreneurship is practiced within the firm as new products, services, processes, or strategies are introduced. The daily operations of the firm do not require to involve entrepreneurship. Furthermore, as Schumpeterian entrepreneurship is *sui generis*, which is independent of its environment, the structure and composition of the firm does not have an impact on the level of entrepreneurship.

2.4.2.4 Entrepreneurship as alertness to opportunities

Over the years, a new conception of entrepreneurial function has developed – alertness to profit opportunities – which has become a dominant view in the management literature on entrepreneurship (Shane, 2003; Shane and Venkataraman, 2000). The critical aspect of this perspective is 'opportunities' which is defined as situations in which resources are redeployed to create value through different types of arbitrage. Recent management literature explains opportunity recognition, evaluation, and exploitation, however, Israel Kirzner emphasises that the notion of recognition is the fundamental entrepreneurial act, and the remaining are considered as management.

Kirzner's perspective emphasizes the nature of competition which Hayek (1968) has labelled as a 'discovery process'. The foundation of entrepreneurial profit is superior foresight, which is the discovery of an unknown element within the market. Therefore, the entrepreneur is alert to discover a new product or process to introduce to the market before others. In this perspective, success does not come from following a maximisation problem, but from gaining knowledge and insight which no one else has – thus, something beyond the 'given means-end framework'.

Kirzner explains that entrepreneurs do not own capital; instead, they require to be alert to recognise profit opportunities. As they own no assets, they tolerate no uncertainty. This perspective has been criticised, explaining that simply alertness to a profit opportunity is not sufficient for gaining profits. To achieve financial gain, the entrepreneur must invest resources to fulfil the recognised profit opportunity. As Rothbard (1985, p. 283) explains "entrepreneurial ideas without money are mere parlour games until the monkey is obtained and committed to the projects".

Klein (2008b) provides a more general argument of the opportunity discovery perspective, stating that under uncertainty, 'opportunities' can only be explained as *e post*, and that actions (not opportunities), should become the unit of analysis within entrepreneurship studies. The notion of 'opportunity' is metaphorical, and not literal, and thus, emphasis on opportunities can be misleading.

2.4.2.5 Entrepreneurship as the ability to adjust

Nobel Prize-winning economist Theodore Schultz's perspective on the entrepreneurial function is similar to Kirzner's in certain key elements, notably the conceptualisation of the entrepreneur's purpose of adjusting the equilibrium. Schultz explains that markets do not automatically return to equilibrium after an exogenous event. "Regaining equilibrium takes time, and how people proceed over time depends on their efficiency in responding to any given disequilibrium and on the costs and returns of the sequence of adjustments available to them" (Schultz, 1975, p. 829).

According to Schultz, entrepreneurship is an individual's ability to adjust or reallocate the necessary resources to overcome changing circumstances. Thus, entrepreneurship is an element of all human behaviour, instead of a unique function which is practiced by specialists.

The degree to which entrepreneurship is grown in a society is determined by supply and demand. The demand for entrepreneurial services is developed by the expected benefits from reallocating resources in the event of the disequilibrium. The supply of entrepreneurial capacities is given by the individuals' ability to recognise and exploit opportunities. Similar to any economic good, entrepreneurship is both valuable and scarce (Schultz, 1979). Furthermore, Schultz views entrepreneurial ability as a type of human capital. Thus, similar to other types of human capital, this ability can be improved through training, education, and experience.

2.4.2.6 Entrepreneurship as charismatic leadership

An additional strand of literature, which incorporates insights from economics, sociology, and psychology and contributing highly from Max Weber, links entrepreneurship with charismatic leadership. In this view, entrepreneurs excel in communication skills – the ability to articulate a goal, a plan, or a broader vision, and execute it with others. Casson (2000) names these plans 'mental models' of reality. Successful entrepreneurs effectively communicate these models to others, who learn to share the entrepreneurs' vision, thus, become the followers. Such entrepreneurs are also typically self-confident, optimistic, and enthusiastic.

Witt (1998) explains entrepreneurship as 'cognitive leadership'. He describes an entrepreneurial theory of the firm which combines recent literature on cognitive psychology with Kirzner's concept of alertness. He argues that entrepreneurs need complementary factors of production, which are synchronised within the firm. For the firm to become successful, entrepreneurs must establish an implicit, shared framework of goals, which builds the relationships among the team members. As explained by Langlois (1998), it is often easier and less costly for individuals to commit to a specific leader than a large set of complex rules on the firm's operations. The practice of charismatic authority reduces coordination costs within the firms.

2.4.2.7 Entrepreneurship as judgement

An alternative perspective is that entrepreneurship involves judgmental decision-making under situations of uncertainty. Judgement is defined as a "decisive action about the deployment of economic resources when outcomes cannot be predicted according to known probabilities" (Foss and Klein, 2012, p. 38). In a judgment-based approach, overcoming uncertainty which is making decisions without having certain knowledge of the consequences – is the entrepreneurs' *raison d'être*.

Alertness is explained to be passive, while judgement is active. Alertness is described as the ability to recognise and to react to current opportunities while judgement is the ability to create new opportunities. Entrepreneurs are individuals "who seek to profit by actively promoting adjustment to change. They are not content to passively adjust their… activities to readily foreseeable changes or changes that have already occurred in their circumstances; rather, they regard change itself as an opportunity to meliorate their own conditions and aggressively attempt to anticipate and exploit it" (Salerno, 1993, p. 123). Making decisions under uncertain

circumstances is entrepreneurial, whether it involves creativity, leadership, imagination, and other related factors or not.

Judgment is viewed as a service which improves the quality of decisions in novel situations that require an urgent decision. This service can be learnt and involves a large tacit component. Entrepreneurship is explained as a judgement about the most uncertain events, which consists of starting a new venture, creating a new market and so on (Foss and Klein, 2012).

2.5 Entrepreneuring

"We are born to action…" (Charles Horton Cooley, 1902)

In the past, the theorisation of entrepreneurial processes have been mainly dominated by assumptions of determinism, viewing the entrepreneurial process as involving venture creation through intentionally planned activities – a linear path (Steyaert, 2007). Such conceptualisations make the assumption that the creation of a new venture occurs through identifiable sequences of steps or stages – towards achieving a pre-defined goal (Carter et al., 1996). However, in many contemporary studies, such perspectives are being questioned, thus, focusing more on the process.

Regularly developing on effectuation logic (Nayak and Chia, 2011; Sarasvathy, 2001), the perspective of entrepreneuring explained as a complex and non-linear phenomenon is becoming widespread (Johannisson, 2011; Sorenson, 2006; Steyaert, 2007; Wright and Marlow, 2011). Such contributions assist in conceptualising the entrepreneurial life as unfinishable. Emphasising that it does not follow a clear and neat path, but instead a messy one where initial goals continue to change and evolve over time, mainly through action and challenges, which is guided by coincidence and by what is available at hand (Baker and Nelson, 2005). In this sense, entrepreneuring means 'wayfinding' (Nayak and Chia, 2011), which consists of all the small steps of everyday life (Boutaiba, 2004). Thus, such contributions place less emphasis on the entrepreneur, but conceptualise entrepreneuring as a group of transindividual practices (Johannisson, 2011), as well as performative and always in the process of further becoming (Verduyn, 2015).

It is crucial to acknowledge that entrepreneurship is not a single event; instead, it is a process which extends through time. To avoid this confusion, Steyaert (2007), argues that entrepreneurship scholars should explain the action of entrepreneurship as 'entrepreneuring', to demonstrate its time dimension and rigorous goal-directed

character. This perspective is in line with Drucker (1985), who states that entrepreneurship is neither art nor science; instead, it is an ongoing practice.

The term entrepreneuring follows Weick (1979) idea that the use of verbs draws attention to both actions and processes which are performed to achieve change creation. Thus, the term 'entrepreneuring' has been developed to encourage entrepreneurship researchers to study a more extensive set of actions, such as activities and processes (Rindova et al., 2009).

A research study running over a quarter of a century conducted by Johannisson (2011) has been focusing on investigating on how successful family-business entrepreneurs in Sweden use the time they spend running their ventures. The three major findings of this research include; (1) successful entrepreneurs spend more of their time on both concrete action and vision than on planning, (2) over the years (1976-2002) repeated empirical research demonstrates that an increasingly larger portion of the time is spent on concrete action, than on planning and vision. This is explained due to an ever-increasing complex world, where dreams might be put on hold to overcome challenges cf. Stacey (1996). And (3) owner-managers can maintain their awareness for vision as more feasible than professional leaders. Thus, these findings are in contrast with the typical image of entrepreneurship which is mainly viewed as an intentionally planned and staged activity that represents rationalistic approaches to entrepreneurship.

Johannisson (2011, p. 137) explains that there are three main reasons why entrepreneurship should be approached as an "ongoing practice of creatively organising people and resources according to opportunity." First, entrepreneurship studies are now internationally institutionalised and recognised as a standalone discipline and comprising of subjects such as entrepreneurial marketing and entrepreneurial strategy, thus, provides a great opportunity to take on new challenges. Second, having the development of more complex realities due to digitalisation have resulted in academic concern for ontologies of becoming cf. Chia and Holt (2006). Additionally, process perspectives in the field of entrepreneurship (Steyaert, 2007) have attracted attention. After a review of alternative process approaches to entrepreneurship, Steyaert proposes the term 'entrepreneuring' for the entrepreneurial phenomenon as it is associated with both movement and process (Johannisson, 2011). Third, there is a practice turn occurring in the social sciences,

which recognises knowledge as embodied (Schatzki, 2001), therefore, incorporating emotional components such as affect and intuition within a framework for inquiry into entrepreneurship.

2.6 Entrepreneurs

The origin of the word 'entrepreneurs' is important as it is an indicator of the process. It originates from the French words *entre,* which means 'between' and *prendre,* which is the verb 'to take'. Therefore, this implies that it was another term used for a merchant who acts as a go-between for entities within the trading process. However, the French economist Richard Cantillon (1680-1734), who is known to have first used the term, used it concerning those who took the risk in the economy, so it may have been the individuals who took the risk between customer and supplier. The modern use of the word 'entrepreneur' in English is now more general and has a focus on results, although the original description of the risk-taker is still associated (Thompson, 2007).

The French verb *entreprendre* translates 'to undertake', thus, when undertaking a venture, however, it can also be used in the context of starting a new venture, and this is fundamental to the use of the word 'entrepreneur' in English. In French, the word *entrepreneur* means a contractor, such as a building contractor; however, it is now also used in the context as it is in English. The entrepreneur, and the practice of entrepreneurship, goes much further back than the word used today, to the merchants and traders who recognised a commercial opportunity and turned it into profit.

Thompson (2007, p. 16) defines an entrepreneur as "a person who habitually creates and innovates to build something of recognised value around perceived opportunities." 'A person' also refers to a group of people, as it also describes teams and organisations that are entrepreneurial. The word 'person' refers to the involvement of a personality rather than a system. 'Habitually' is a distinct characteristic of entrepreneurs as it separates them from business owner-managers or individuals who establish a business to create a comfortable lifestyle.

The word 'creates' places emphasis on the fact that entrepreneurs begin from scratch and build something which did not exist prior. However, entrepreneurs are not magicians; they build as they create and develop their ventures. Therefore, they

are initially creators, then builders; thus, both are involved in the entrepreneurial process.

True entrepreneurs 'innovate' along with create. They build their ideas through to completion and delivery. During the process, they practice their creative talents to overcome challenges which would prevent most individuals from continuing. As for entrepreneurs, every challenge is viewed as a new opportunity.

'To build something' refers to the outcome. The words 'habitually creates and innovates' refers to the process. Therefore, to build something is the aim of the process and for successful entrepreneurs is the goal that they achieve. The word 'something' refers to building an entity which can be recognised and is no longer just an idea or concept, which is where the process begins.

'Of recognised value' expands the definition from only the perspective of commercial. The traditional view of entrepreneurs is that they only achieve financial capital. While this is a fundamental achievement of entrepreneurs, it should also recognise the achievement of social capital and aesthetic capital.

'Perceived opportunities' are essential in providing direction and focus. The idea which drives the opportunity may or may not be original; however, recognising the opportunity to evaluate the idea is a distinct characteristic of the entrepreneur. Entrepreneurs recognise opportunities others miss or only see in retrospect – the good idea viewed with the benefit of hindsight (Thompson, 2007).

To gain further insight into entrepreneurs and the process of entrepreneurship, Thompson (2007) categorises the main findings of prior research into the following three main sections:

- What entrepreneurs are like – evaluating the personality factors;
- Where entrepreneurs come from – evaluating the environmental factors; and
- What entrepreneurs do – the action factors

The above factors are summarised in Table 2-6.

Table 2-6: Factors explaining entrepreneurs and entrepreneurship

	Factors	Description
Personality	Motivation and emotion	Motivation and emotion of entrepreneurs provides a unique type of drive and purpose which distinguishes them from others. It is how they continue to push through and overcome challenges when most others would give up.
	Born or made debate	The concept of personality is discussed as something distinct and individual, which guides an individual's behaviour. Furthermore, personality is explained as having an inborn component and an environmental component. As the entrepreneur is a function of personality, thus, they are both born and made.
	Behavioural characteristics	Main behavioural characteristics include perseverance and determination, ability to take calculated risks, desire to achieve, initiative and taking responsibility, orientation to clear goals, creativity, honesty and integrity, and independence.
	Personality attributes	Each individual has their own unique personality. The question is whether there exists such a thing as the entrepreneur personality, consisting of a group of personality attributes which distinguish the entrepreneur. One of the most popular tests is the Myers-Briggs Type Indicator (MBTI) which is based on four dimensions of personality: extroversion (E)/introversion (I), sensation (S)/intuition (N), thinking (T)/feeling (F) and judging (J)/perceiving (P). Combinations of the letters from each of the four dimensions result in the personality indicator. Goldsmith and Wharton (1993) explain that ESTP types can be good innovators and entrepreneurs.
Environmental	Family background	Roberts (1991) developed the idea of 'the entrepreneurial heritage' to explain the importance of family background for the entrepreneur. The idea of 'heritage' refers to factors such as the father's occupation, the family work ethic, family size and growing up experiences. His research demonstrated that the most substantial influence was the father's career, as the majority of the entrepreneurs' fathers were self-employed. Other researchers, such as Hisrich (1990) have reported similar results where the majority of entrepreneurs have a self-employed father. However, it must be noted that while family factors are important, they should not be viewed as deciding factors.
	Education and age	Evidence from UK entrepreneur programmes for undergraduates has demonstrated that too much education may discourage entrepreneurs and limit the use of their talents. The exception to this discussion is entrepreneurs who are involved in high technology and technical fields. As they mainly require the expertise which are related to the product rather than entrepreneurial activities. Age is an interesting factor in entrepreneurs. Individuals create their ventures at all ages; however, real entrepreneurs cannot wait and therefore, often start building their ventures in their late teens or early twenties. In principle, age is not a determining factor for

		entrepreneurs, except that the true entrepreneur is more likely to start the venture sooner rather than later (Thompson, 2007).
Action	Work experience	Prior research has shown that entrepreneurs initially gain some work experience in a similar line of business which they later start-up (Vesper, 1980). Furthermore, studies have shown that almost 90 per cent of entrepreneurs create their venture in the same market and industry as they were working in (Brockhaus, 1982). Some entrepreneurs start several ventures which may not grow and even fail. Through this experience, they learn many valuable lessons. Others may decide to work for someone else and view that individual as their 'role model', to learn what makes a successful business, before creating their own venture.
	Make a significant difference	Entrepreneurs translate 'what is possible' into reality (Kao, 1989), or in other words, they transform an idea into something that works (Kets de Vries, 1996). Thus, they have their own methods of dealing with opportunities, challenges, and uncertainties to create new products, services, and organisations. Entrepreneurs disturb the status quo through initiating change and overcoming challenges and obstacles which would hinder most individuals. The remaining attributes in this section all contribute to an entrepreneur's ability to make a significant difference.
	Create and innovate	Creativity and innovation allow entrepreneurs to disrupt markets and challenge existing, well-established organisations. For entrepreneurs, creativity is a continuous activity, which involves creating new ways of operating a business regardless of how difficult it may be or whether the resources are readily available. Creativity is combined with the entrepreneur's ability to innovate to transform an idea into something that works. For most entrepreneurs, creativity and innovation are habitual, something which they must keep doing.
	Spot and exploit opportunities	Individual's perceptions on opportunities vary. Entrepreneurs have the ability to create opportunities which others miss, even though the information which generates the idea is usually available for everyone to view. Thus, they can synthesize the available information while being comfortable with ambiguity and uncertainty and connecting previously unrelated signals (McGrath, 1997). Therefore, entrepreneurs can recognise opportunities which are worth pursuing.
	Find the required resources	Entrepreneurs' success is achieved through exploitation of resources which at the time they need it may or may not be readily available. They view acquiring resources as a positive challenge. They can exploit their contacts and resources to achieve their vision.

		Action continued
	Good networkers	Entrepreneurs can quickly build up a network of individuals who can assist them in achieving their goals. They have what has been described as 'expertise orientation' (Clifton and Harding, 1986) - which means that they know when they require experts as well as how to use them effectively.
	Determined in the face of adversity	Entrepreneurs have the motivation to succeed; additionally, they possess determination and self-belief. These qualities have a significant contribution to their success, as they refuse to give up and persevere through all the hardship. Furthermore, successful entrepreneurs can overcome unexpected challenges, most of which are difficult to predict. Thus, they turn challenges into opportunities (Thompson, 2007).
	Manage risk	Entrepreneurs are associated with risk; however, it must be explained that entrepreneurs take calculated risks, which means that they take risks which they believe and understand can manage. Therefore, most successful entrepreneurs exploit manageable risks and opportunities (Churchill, 1997). They can carefully screen an idea through limited analysis to evaluate its quality. They then succeed through learning and being flexible with change during the implementation phase (Bhide, 1994).
	Control of the business	It is common for a business to get out of control and for the managers to be overwhelmed and feel they have lost control. Entrepreneurs try to avoid this by paying attention to detail and developing customised key performance indicators which they monitor carefully. Entrepreneurs work towards knowing the exact state of their business through practicing strategic control (Thompson, 2007).
	Put the customer first	It may seem evident that entrepreneurs put the customer first; however, most studies do not discuss it directly; instead, they mainly focus on the need for market knowledge. Entrepreneurs create successful products or services through listening to and understanding the needs of their customers. Also, they react quickly into understanding why they have made a sale as well as to why they have lost a sale. Most entrepreneurs are willing to respond promptly to their customer's feedback (Thompson, 2007).
	Create capital	Resource acquisition, networking, creativity and innovation, control of the business and other action factors mentioned above are part of the entrepreneur's intellectual and emotional capital. They use these factors to create external wealth which are financial capital, social capital, and aesthetic capital (Thompson, 2007).

Source: Summarised from Thompson (2007)

As explained in Table 2-6, entrepreneurs are individuals who act; additionally, they engage in vigorous and persistent efforts to transform their visions and ideas into profitable, operating ventures. This tendency to act, is fundamental to the entrepreneurial process, as, in the absence of action by individual entrepreneurs, entrepreneurship and new ventures would not exist. Entrepreneurship occurs because entrepreneurs design new products or services and then develop through the creation and operation of new ventures. Thus, "entrepreneurs truly are the active element in new venture creation" (Baron, 2007, p. 167).

Schumpeter (1934) describes the entrepreneur as a special actor who is determined to break down traditional structures and to challenge the accepted methods of completing things. The Schumpeter-type entrepreneur is described as individualistic, self-directed, an inner drive for innovation. Also, as explained by Leskinen (2011, p. 5), there is a quest for autonomy, therefore, "independence from other people" so that they can be "in control of one's own destiny." In a study on entrepreneurial career intentions by Krueger, Reilly and Carsrud (2000, p. 424), it was found that the prototypical entrepreneur is an "iconoclastic individualist" who has a strong "tendency toward inner-directedness."

Since Schumpeter's early description of entrepreneurs, there has been the development of a rich literature which goes beyond economic determinants of entrepreneurial activities, and thus considering and incorporating psychological and sociological dimensions (Hogg and Abrams, 1988; Rauch and Frese, 2007; Schmitt-Rodermund, 2007). Cantner, Goethner and Silbereisen (2017) discuss that the consideration of psychological and sociological determinants of entrepreneurial activities encourages the opportunity for policy-oriented discussion moving beyond the single focus of economic incentives. Additionally, measures can be developed influencing mindsets, competencies and social context. Lundström and Stevenson (2005) recommend that entrepreneurship policies should develop an entrepreneurial climate which would be conducive to successful entrepreneurial activity. Furthermore, they explain that entrepreneurship policy should focus on all phases of the entrepreneurial process, including the early stages of the development of entrepreneurial intentions.

Frese (2009) stated that psychology defines itself to develop an understanding of individuals' perceptions, cognitions, emotions, motivation as well as behaviour,

therefore, it is wise to turn to psychology to investigate such important components of entrepreneurship research such as decisive actions (behaviours), perceptions, and implementation of opportunities which includes: perception, cognition, emotions, and motivation. The main view which has developed in the socio-psychological literature is that intention is a good and reliable predictor of behaviour. As a result, intention models have been developed based on the fact that intention is the most immediate and crucial predictor of an individual's behaviour (Sheeran, 2002), and focus on defining the determinants of intention to be able to predict behaviour (Adam and Fayolle, 2015).

2.6.1 Early-stage entrepreneurs

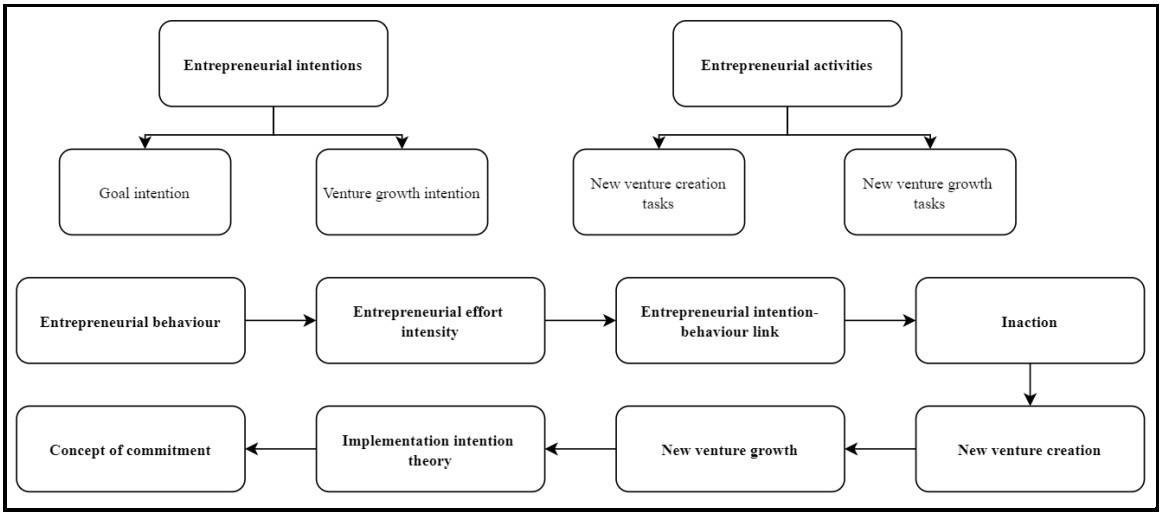
The Global Entrepreneurship Monitor (GEM) 2013 defines early-stage entrepreneurs by referring to the adult population aged between 18-64 years, who are identified as either nascent or young business entrepreneurs (Benyovszki et al., 2013). Nascent entrepreneurs are defined as those individuals who are actively involved in planning a new venture. These individuals have performed some entrepreneurial activities during the past 12 months to help start a new venture, that the individual will at least partly have ownership of (Benyovszki et al., 2013). Some of the entrepreneurial activities may include organising the start-up team, searching for equipment, writing up a business plan, saving money for the start-up. All these activities are considered as active commitments to starting a new venture. This business has not yet paid salaries, wages or other payments to the owners for more than three months (Benyovszki et al., 2013).

Young business entrepreneurs who are also referred to as new business owners are entrepreneurs who either partly or fully own and manage a new business which is between four and 42 months old, during which they have not paid any salaries for longer than this duration (Benyovszki et al., 2013). Furthermore, a new venture is referred to ventures which are in the first 42 months, after which the new venture is considered to be set-up (Kelley et al., 2011).

This research focuses on investigating early-stage entrepreneurs, and therefore, participants included in this study are in line with the definition provided above by GEM for young business entrepreneurs at the time they have started their participation in this study.

The next section of this chapter starts the discussion of the literature on the study's constructs and the theories applied. Figure 2-2 illustrates the sequence of the discussion topics.

Figure 2-2: Sequence of discussion topics



2.7 Entrepreneurial intentions

Based on the literature from social psychology and the philosophy of the mind, Shaver (1985) has explained that the definition of intention should be independent of psychological processes used to identify the presence of the intention. The definition of intention should also be independent of the valence of the act itself (positive effects cannot be considered any more or less intentional than negative effects). Lastly, the definition of intention should not focus on the result of the activity of interest, as success could be a result of luck, and failure may still occur despite the individual's best efforts.

Entrepreneurial intention from the perspective of an individual's plan or willingness to create a new venture, is generating increased attention, in specific from a social psychological perspective (Edelman and Yli-Renko, 2010; Shook et al., 2003).

Katz and Gartner (1988, p. 431) define entrepreneurial intentionality as "an agent's seeking information that can be applied toward achieving the goal of creation of a new organisation." As a result, organisations are created through individual actors who act purposefully. Therefore, it is the individual's intentions which lead to the performance of activities involved in creating a new organisation (Shook et al., 2003).

Bird (1988) conducted an analysis of the elements of entrepreneurial intentions (EI), which focuses more on the psychological signs of the action rather than on the

action itself. Furthermore, Bird (1988) explains that EI is sustained through both rational, cause-effect thought processes and intuitive and contextual thought processes. In the model which she developed, there are three intrapsychic activities, which all help to support EI development. These activities are: (1) temporal tension (developing and maintaining a link between the present and the desired future), (2) developing a strategic focus on the desired goals to be accomplished, and (3) making sure that all the elements in one's life are moving towards the same direction.

2.7.1 Intention models

There are two fundamental models which have become dominant in the EI literature. The first is the theory of planned behaviour (TPB) developed by Ajzen (1988) which explains intentions through the means of personal attitude toward the outcome of a specific behaviour, perceived social norms, and perceived behaviour control. The former two explain the attitude of the individual as well as the relevant environment (family, peers, society) toward the behaviours, while the third factor, demonstrates the individual's own judgements on the feasibility of the behaviour based on their knowledge, resources and contacts (Davidsson, 2005). The second, is a model developed by Shapero and Sokol (1982), which is an intentional model in specific about entrepreneurship. This model explains EI through perceived desirability, perceived feasibility and the tendency to act.

Both above models explain that intentions are more accurately predicted through an individual's willingness as well as capability. Furthermore, both models have received consistent empirical support, and both have been confirmed to provide satisfactory prediction in a comparison study conducted by Krueger et al. (2000).

Relatively current empirical tests demonstrate inconsistency in the predictive role of the above social-psychological variables (Quan, 2012). For example, the empirical test conducted by Brush, Manolova and Edelman (2008) demonstrates that intention does not necessarily precede the creation of a new venture. Even if intention is identified as a fundamental independent variable which can predict entrepreneurial behaviour (Shook et al., 2003; Krueger et al., 2000; Bird, 1988), it still raises the question of why some entrepreneurial intentions do not translate into subsequent behaviour. This is further demonstrated by Krueger et al. (2000),

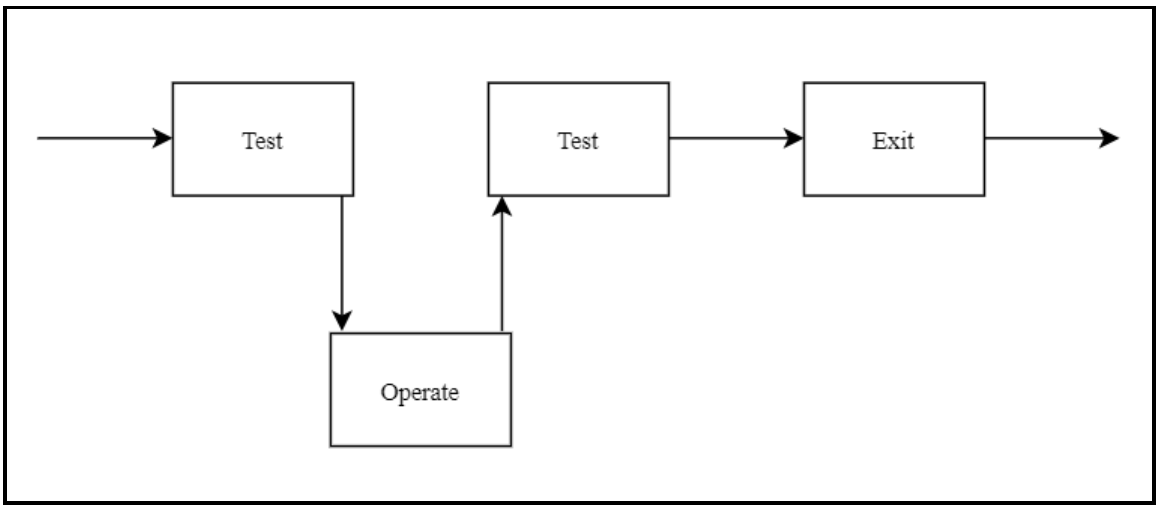
which identify that entrepreneurial intention explains only 30 per cent of the variance in behaviour.

van Gelderen (2009) discusses that there is a difference between the intention of pursuing an opportunity, and the intention of pursuing an entrepreneurial action, as on the action level, an individual may be unclear about the action plan which outlines the when, where and how of a specific action.

From the perspective of entrepreneurial action, it is explained that the majority of the intentions models tend to focus only on intentions, and therefore, fail to consider the link between intentions and action. Shaver (2012b) explains that among entrepreneurship scholars, there is almost a universal agreement that entrepreneurial action requires intention, which is a conscious process that cannot be directly observed. In recent years, there has been a growing interest in 'automatic' processes which might be occurring in entrepreneurial behaviour. However, automaticity, as explained by Bargh (1992), refers to the fact which states "the presumed cognitive antecedents of behaviour were not always available to conscious awareness," (Shaver, 2012b, p. 285). In entrepreneurship, this might occur in recognising opportunities; however, no one would argue that for example, an entrepreneur's idea pitch to potential investors would be an automatic process (Shaver, 2012b).

The feedback-loop model of intentional action uses a cognitive approach in describing the human action. In specific the 'test-operate-test-exit' (TOTE) model which was developed by Miller, Galanter and Pribram (1960) as illustrated in Figure 2-3. This model explains that for behaviour to occur, the following elements must be present: (1) perception of the external environment, (2) an internal standard, against which the perceived environment is compared to, (3) performance of a behaviour which aligns the external environment with the internal standard, (4) a repeated test to make sure that there has been a sufficient change, and (5) a judgement that the sequence can come to an end.

Figure 2-3: The TOTE model



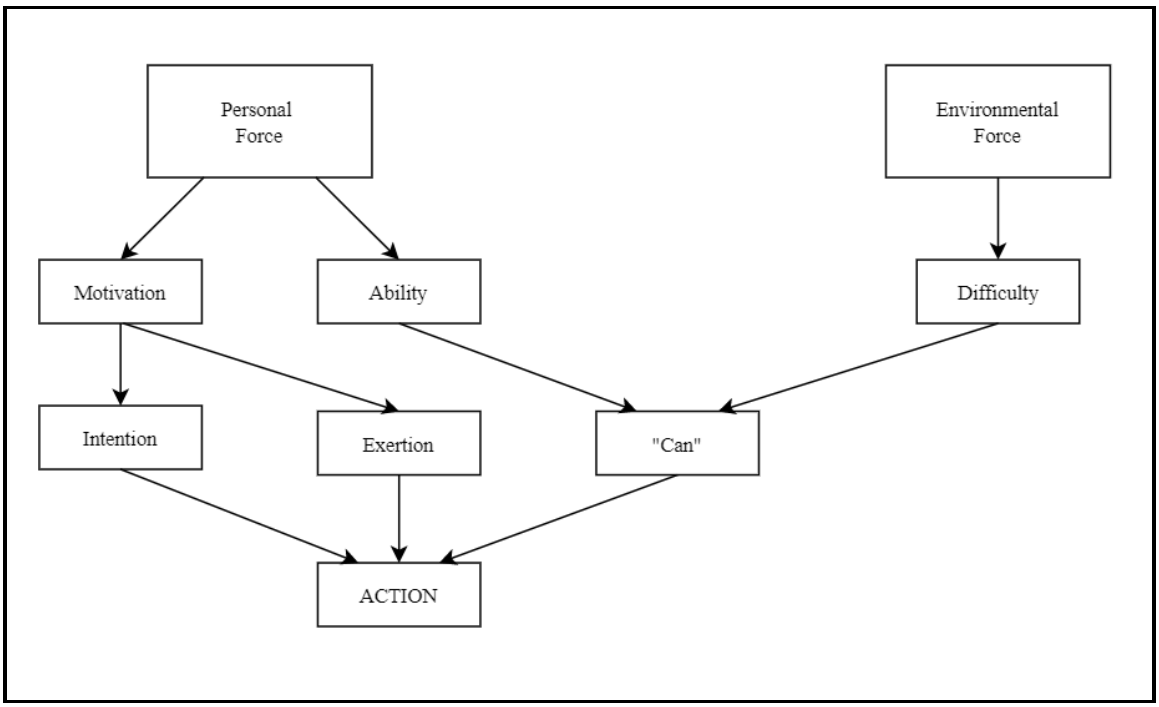
Source: Developed by Miller et al. (1960)

A fundamental element of the TOTE model is the negative feedback loop, which since has been included in a variety of 'control' theories related to the field of entrepreneurship (Shaver, 2012a). There are three principles which are common in all these theories, these include: (1) the idea that there are internal representations of desired outcomes such as goals, (2) some provision exists for consciously directed effort which is toward achieving the desired outcome, and (3) there must be a way to determine when to exit.

Heider (1958) approached the topic of human action, from a different perspective, as it might be described by a 'naïve psychologist', who is inexpert in scientific methods. Heider's model, as illustrated in

Figure 2-4, assumes that the task has already been performed, and therefore, questions what has been necessary for the completion of the task. To read this diagram, one must begin at the bottom, with a specific action which then needs to be analysed. Heider considers both intention and exertion to form a personal force named 'trying'. Furthermore, the state of 'can' is achieved if the individual's personal force is higher than the task's level of difficulty. Task difficulty and ability are both considered to remain relatively stable, as changes may occur over long periods. On the other hand, exertion may change more frequently (Shaver, 2012a).

Figure 2-4: 'Naïve Analysis' of Action



Source: Developed by Heider (1958)

Quan (2012) states that the understanding of entrepreneurial intention is incomplete, and should not be viewed as homogenous, as some entrepreneurial intentions never translate into entrepreneurial behaviour. Therefore, to gain a more thorough understanding of the entrepreneurial intention-action link, it is important to distinguish between two levels of entrepreneurial intentions: deliberate entrepreneurial intentions (DEI) and impulsive entrepreneurial intentions (IEI). IEI and DEI are further explained in the next section.

2.7.2 Impulsive entrepreneurial intentions

Impulsive entrepreneurial intentions (IEI) is defined as the willingness to start a new business without being able to realistically manage the required resources for specific activities relating to the new business. IEI can be impacted by the individuals' personal attitudes toward entrepreneurship, culture, as well as age or gender. Therefore, when surveying students on their intentions to start a new venture, their responses are highly likely to correspond to an impulsive intention, mainly due to the lack of established resources which are necessary to turn their ideas into action (Quan, 2012). Thus, it is important to understand that strong personal desire is likely to lead to impulsive intent.

2.7.3 Deliberate entrepreneurial intentions

Deliberate entrepreneurial intentions (DEI) is explained to develop due to deliberate thinking on the feasibility of required entrepreneurial behaviours. Therefore, individuals demonstrate a certain level of control of the resources required. Deliberate intention not only requires personal desire, but it also relies on the individuals' prior experiences such as their types of jobs, network contacts as well as the information collected to assist with their entrepreneurial actions. Quan (2012) explains that by being able to differentiate between these two levels of entrepreneurial intention, scholars will be able to gain a better understanding of why intention contributes inconsistently to entrepreneurial behaviour.

Prior research demonstrates that there are several predictors for entrepreneurship, these include personality traits, culture, beliefs, demographics, education, values, psychological factors, past experiences, and social networks (Quan, 2012). A review of previous studies conducted by Shook et al. (2003) revealed that there is a lack of theoretical thrust in the impact of all the individual factors in venture creation. The two main contributing factors as per Quan (2012) are prior experience and social network, which are explained in the next section.

2.7.3.1 Prior experience

It is widely accepted that an individual's prior experience may facilitate entrepreneurship (Ardichvili, Cardozo and Ray, 2003; Shane, 2000). However, there is a lack of empirical research on examining how different types of experiences impact on entrepreneurial intention (Shane, 2000; Sigrist, 1999). Study conducted by Quan (2012) shows that these two types have a positive influence on DEI; job/management experience, and previous venture founding experience.

Prior knowledge about customer problems, markets and how to serve markets will impact on individuals' opportunity discovery capacity, which in turn will influence entrepreneurial behaviours. These types of knowledge usually can be gained from an individual's job experience (Shane, 2000). Therefore, the type of jobs that an individual has been involved in may influence their entrepreneurial intention. In specific profound job experiences may provide easier access to resources, and therefore, in turn, influence an individual's judgement regarding the feasibility of starting a new venture. As a result, the experience is more likely to contribute to deliberate intention rather than impulsive intention (Quan, 2012). For example, a CEO

of an established organisation is more likely to get funding for a new venture they want to start, due to their proven results of previous business operations.

The venturing environment is highly uncertain and ambiguous; thus, lack of entrepreneurial experience may lead to higher probability of mistakes in decision making (Li and Dutta, 2018). When individuals are faced with complex decisions in the venturing process, experienced founders are likely to theorise from their own past experiences to be able to extend on the information provided to them in a challenge (Dew, Read, Sarasvathy and Wiltbank, 2009). Prior venture founding experience is explained as a factor which influences the sourcing and valuation of venture capital funding. Furthermore, prior venture founding experience is also a relatively strong predictor of starting subsequent ventures (Davidsson and Honig, 2003; Wright, Robbie and Ennew, 1997). Prior venture founding experience has a positive influence on DEI as prior experience can provide a good source of entrepreneurial confidence and resources.

2.7.3.2 Social network

Social networking has been considered as a fundamental catalyst for entrepreneurship (Aldrich, Zimmer, Sexton and Smilor, 1986; Burt, 1992). The social network approach, which focuses on relationships between entrepreneurs and other actors, has added substantial value in interpreting the entrepreneurial process. Firstly, entrepreneurs can identify opportunities through their social networks, such as new business opportunities (Elfring and Hulsink, 2003; Shane and Venkataraman, 2000). Secondly, networks can provide access to a wide variety of resources (Garnsey, 1998), which at times are only available to a known circle (Starr and MacMillan, 1990). Examples of these resources may include; financial capital, skilled team, market information and tacit knowledge (Kaplan, 1996; Stuart and Sorenson, 2005).

Quan (2012) argues DEI highly reflects the feasibility that an entrepreneur perceives for performing potential entrepreneurial behaviours. Therefore, to operationalise DEI and IEI, an entrepreneur's 'plan to create a new venture within the next 12 months' is used as a proxy for DEI. An entrepreneur's 'plan to create a new venture sometime in the future' is used as a proxy for IEI. This operationalisation is used as an individual's plan to create a new venture within the next 12 months usually demonstrates the founder has been preparing and in turn has been performing

entrepreneurial actions. On the other hand, individuals who do not yet have in place a clear timeline on venture creation illustrate IEI.

2.8 Goal intention

Goals are described as mental representations of desired outcomes, and individuals are thought to develop goal intentions, which are a set of instructions to the self to act to realise those outcomes (Toli, Webb and Hardy, 2016). Furthermore, the strength of an individual's intention determines whether he or she achieves that goal. Goal intention strength is further discussed in the next section.

Gollwitzer differentiates between two types of intention: (1) goal intention and (2) implementation intention (Gollwitzer, 1999; 1993; Gollwitzer and Brandstätter, 1997). Goal intention connects individuals to their goals and develops a sense of commitment to achieving them, whereas, implementation intention refers to action (Adam and Fayolle, 2016). Goal intention links to 'I intend to reach X', but it does not guarantee the completion of the goal, as individuals may not be able to effectively deal with self-regulatory problems during goal-striving (Gollwitzer and Sheeran, 2006). Furthermore, goal intention is usually considered as a necessary initial step, after which an individual may or may not develop an implementation intention (Dholakia and Pbagozzi, 2003).

Therefore, it can be concluded that acting on an intention comprises of two phases. The current intention models tend to mainly focus on a motivational phase, which is when individuals set goals based on their attitudes, subjective norms, and perceived behavioural control. However, carrying out a behaviour requires a second phase which is referred to as the volitional phase (Gollwitzer and Brandstätter, 1997). This phase refers to implementation intention, which is when individuals plan how they are going to act on their intentions. This second phase is not focused on in the intention models but is part of the process of carrying out a behaviour. Therefore, it can be concluded that the term 'entrepreneurial intention' used in the intention models refers specifically to 'goal intention', thus, through bringing in implementation intention may further increase insight and understanding of the entrepreneurial process (Adam and Fayolle, 2016).

Acting on an intention is less difficult when the action to carry out is a routine and is, therefore, automatized (Adam and Fayolle, 2016). However, this is not always the case, and various reasons can either lead to delay or stop the intention realisation

process (Gollwitzer and Brandstätter, 1997). Rutter, Steadman and Quine (2006, p. 128) explain "forming a goal intention does not guarantee goal realisation", especially at times when one or more of the following four elements are not well defined: the action, target, time, and context. Furthermore, unforeseen challenges may also arise (Martijn, Alberts, Sheeran, Peters, Mikolajczak and De Vries, 2008). It is during this scenario that forming an implementation intention can have a positive impact. It can be a significant self-regulatory strategy which assists to enact goal intention (Gollwitzer, 1993).

As it is impossible to develop implementation intention without the formation of a goal intention (Gollwitzer and Brandstätter, 1997), individuals are considered to have at least developed a goal-driven intention, even if at the time they are not aware of it (Ajzen, Czasch and Flood, 2009). Therefore, Adam and Fayolle (2015) suggest that intention should be replaced with 'goal intention' within the intention-behaviour process. Goal intention operates at the strategy level, while implementation intention operates at the planning level (Gollwitzer and Schaal, 1998).

Implementation intentions are explained to be effective only if the individual who formed them is motivated to reach their goals (Gollwitzer, 1993; Wiedemann, Schüz, Sniehotta, Scholz and Schwarzer, 2009). Therefore, the formation of implementation intention without a strong goal intention will not increase the probability to act. This explanation is supported by Sheeran et al. (2005). They conclude that the probability of goal attainment stimulated by implementation intentions relies on the strength and activation of the individual's goal intentions. Therefore, implementation intentions do not increase goal attainment rate when goal intentions are weak (Adam and Fayolle, 2015).

Gollwitzer (1993) explains implementation intention formation promotes goal achievement, due to eliminating common issues associated with the control of goal-directed action. Goal intentions are pursued more successfully when in combination with implementation intentions (Gollwitzer and Brandstätter, 1997). This is explained to be due to the strong link created between cues and behaviours in memory, as implementation intention promotes a mental accessibility which then triggers an action (Aarts, Dijksterhuis and Midden, 1999; Gollwitzer, 1993). Cues can be identified even in difficult situations (Webb and Sheeran, 2004). Once the anticipated situation takes place, the intended behaviour is then initiated immediately

and efficiently (Brandstätter et al., 2001). Therefore, implementation intentions assist in facilitating the initiation of intended behaviours (Gollwitzer and Sheeran, 2006; Orbeil, Hodgldns and Sheeran, 1997; Sniehotta, Scholz and Schwarzer, 2005; Webb and Sheeran, 2007).

Entrepreneurial goals are explained to consist of hierarchies of single acts which are performed in specific situational contexts which involve deadlines or an opportunity. The findings of the study by van Gelderen et al. (2017) demonstrated how crucial it is to recognise both the means (responses) and the context (internal or external cues) which allow intentions to be realised.

Ajzen et al. (2009) explain that implementation intentions are effective due to the reason that they build a sense of commitment to the intended behaviour. There are several reasons which explain why implementation intention formation may increase the strength of (commitment to) respective goal intentions. First reason is to the extent which individuals perceive implementation intention formation to be a free choice. It is then possible that the individual may experience cognitive dissonance (Festinger, 1957), if they plan how to achieve a goal to which they have no commitment. Therefore, a desire for cognitive consistency could explain that planning improves the strength of goal intentions. Second reason is detailed planning on how to achieve a goal may increase one's commitment through a self-perception process, such as 'If I have decided to act in this particular way, then I must really want this goal', (cf. Bem, 1972). Third reason is planning could have an impact on intention strength via perceived behavioural control (Ajzen, 1991). Thus, making a plan on goal striving could make striving less difficult, and in turn, strengthen respective goal intentions (Webb and Sheeran, 2008).

Prior research demonstrates that implementation intentions can assist the transition from goal intention to action (Carraro and Gaudreau, 2013; Gollwitzer and Sheeran, 2006). The meta-analysis conducted by Gollwitzer and Sheeran (2006) which included over 8000 participants in 94 independent studies, demonstrated a medium-to-large effect size (d=0.65) of implementation intentions on goal attainment which extended beyond goal intention strength. Implementation intentions have been applied to what Gollwitzer (2014) considers the most fundamental challenges which affect goal attainment. These challenges are; getting started (initiating action); protecting the ongoing goal pursuit by remaining on track in the face of competing

goals, distractions and temptations; putting a stop to unsuccessful efforts in reaching a desired goal; and conserving energy for the pursuit of subsequent goals (Gollwitzer, 2014).

In summary, implementation intentions are always within the service of goal intentions, and therefore, do not exist in and of themselves. It is possible that an individual takes certain actions which eventually lead to starting a new venture, and in the process uses implementation intentions. However, these implementation intentions can then not be entrepreneurial implementation intentions to the individual (although they could develop as such at a later stage), because the initial goal that the actions served was not a goal that was entrepreneurial in nature. van Gelderen et al. (2017) explain the formation of implementation intentions are a consequence of goal intentions and implementation intention due to its planning characteristic increases the probability for goal intention to be translated into action (Gollwitzer, 1993).

2.9 Goal intention strength

As previously explained, an individual's intention strength determines whether he or she achieves that goal. This finding has been supported by substantial empirical research. In a meta-analysis of meta-analyses investigating the link between intention and subsequent behaviour, found that intention strength explained 28% of the variance in behaviour and demonstrated a sample weighted average correlation of 0.53, which demonstrates a strong substantive effect (Sheeran, 2002).

However, there is strong opposing evidence which suggests that goal intention strength alone is not always sufficient to realise the desired goals (Gollwitzer and Oettingen, 2015; Gollwitzer and Sheeran, 2006; Sheeran, 2002). Firstly, the correlation of 0.53 mentioned earlier is driven to a high level of non-intenders extent by taking no action. Sheeran (2002) explains only 47% of individuals who have intentions subsequently take any action. Secondly, past behaviour influences current behaviour to a considerable extent. The results for factoring in goal intentions in the second step of the model estimation after controlling for past behaviour showed just a 7% increment in the variance explained (Gollwitzer and Sheeran, 2006). Thirdly, a meta-analysis conducted on studies of intentions and behaviour change in experimental settings, therefore, ruling out contextual variables impacting on the observed associations, demonstrated that the effect of manipulating goal intention

strength only had a small-to-medium effect size (d = 0.36, which equates to R-squared = 0.03) (Webb and Sheeran, 2006). In conclusion, goal intention strength appears less strongly related to performing an action to achieve the goal than has been discussed and theorised (van Gelderen et al., 2017).

The study conducted by Sheeran, Webb and Gollwitzer (2005) which investigated the interplay between goal intentions and implementation intentions, revealed that when individuals had weak levels of goal intentions, implementation intentions did not affect behavioural performance. Prestwich, Sheeran, Webb and Gollwitzer (2015) and Gollwitzer and Sheeran (2006) have concluded that implementation intentions have a positive impact on goal achievement only when if-then plans are supported by strong goal intentions.

Studies which adopt a broader conception of action planning rather than implementation intentions in the Gollwitzer tradition reveal that such action plans can be effective when there is relatively low goal intention strength (Carraro and Gaudreau, 2013; Schüz, Sniehotta, Mallach, Wiedemann and Schwarzer, 2008). It is, therefore, possible to differentiate between an augmentation effect and a substitution effect. With an augmentation effect, goal intentions moderate the impact of implementation intentions on goal attainment such that strong effects of implementation intentions form when individuals have strong goal intentions. With a substitution effect, implementation intentions assist the aspiring entrepreneur to act, even if there is a moderate level of motivation for the goal. Due to the automaticity created by the coupling of the what, when, and where components of action, actions may be performed even with relatively low intention strength (van Gelderen et al., 2017).

Consistent with the above discussions on the positive moderating effect of goal intentions, this study expects that goal intention and strength will have a positive moderating effect on the impact of implementation intention on entrepreneurial effort towards venture growth tasks.

> **Hypothesis 1:** Among early-stage entrepreneurs, goal intention and strength moderates the positive relationship between implementation intention and subsequent entrepreneurial growth effort intensity, such that the relationship is stronger when goal intention strength is high.

The finding that implementation intentions encourage action even when entrepreneurial goal intentions are at moderate levels is crucial because activities performed by nascent entrepreneurs can be viewed as experimenting, finding information, and developing opportunities. Therefore, taking action can in turn increase motivation, or lead to a justified discovery that it is a better decision not to start the new venture (Davidsson, 2006; Gartner, Carter and Hills, 2003). van Gelderen et al. (2017) explain without action, it would be challenging to discover this conclusion, and reaching a conclusion is more beneficial than remaining within the intention mode.

Edelman, Brush, Manolova and Greene (2010) suggest the level of intensity of the desired goals could be used to explain the decision to take action, and Dholakia and Pbagozzi (2003) argue that the better developed the goal intention, the higher is the individual's level of commitment to achieve it. Therefore, Adam and Fayolle (2015) suggest that to understand the relationship between intention and action better, researchers should assess the level of intensity of goal intention.

Consistent with the above discussions, this study hypothesises that goal intention and strength will have a positive effect on entrepreneurial effort towards venture growth tasks.

> **Hypothesis 2:** Goal intention and strength has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.

2.10 Venture growth intention

Doern (2011) explains to grow; growth must be desirable. Several studies have demonstrated that the desire to grow impacts on actual firm growth (Baum and Locke, 2004; Delmar and Wiklund, 2003). However, because not all owners/managers have the desire to grow (Davidsson, 1991; Morrison, Breen and Ali, 2003; Walker and Brown, 2004), and because most empirical research on barriers assumes this, but does not always investigate further whether growth desire is present (Doern, 2009), it is difficult to understand whether the lack of firm growth is due to barriers, to the absence of desire to grow, to a combination of the two, or another factor.

Implementation intentions may also assist the transition from growth intention to action, which in this study is measured as entrepreneurial growth effort intensity. Prior studies have investigated the relationship between growth intentions and behaviour, to be able to identify specific characteristics which predict growth in small businesses (Dutta and Thornhill, 2008; Lebrasseur, Zanibbi and Zinger, 2003; Wiklund and Shepherd, 2003; 2001).

Venture growth intentions in this study refers to the desire towards the growth of the venture within the next coming month. Therefore, to contribute further to our understanding on venture growth intentions, first, this study aims to investigate whether venture growth intentions are present within early-stage entrepreneurs, second, if venture growth intentions are present what effect (if any) does it have on entrepreneurial growth effort intensity.

Consistent with previous research and the above discussions, this study expects that venture growth intention will have a positive effect on entrepreneurial effort towards venture growth tasks.

> **Hypothesis 3:** Venture growth intention has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.

2.11 Entrepreneurial action

Entrepreneurial action requires an individual's effort under uncertainty to be involved in the processes which identify, develop, and perform various activities (Chen, Mitchell, Brigham, Howell and Steinbauer, 2018) to create and grow new ventures. Since these activities are ongoing, entrepreneurial action cannot be explained as a single act, but rather a process which involves many actions taking place over time (Shepherd, 2015). Shaver (1985, p. 121-122) has defined an intentional action as one that is "performed by an agent who (a) believes the action will generate a higher-level act, (b) believes he or she has sufficient ability to bring out this higher-level act, and (c) wants that act to occur." Therefore, an intentional action is one that is performed for some purpose, or to achieve some goal, and not one that is just an end in itself.

An individual's belief in one's ability could be mistaken; however, such a belief should exist realistically. The act to be achieved does not require to be desirable to other people, only to the individual who intends to perform it (Shaver, 2012a). Furthermore, Shaver (2012a) explains that entrepreneurial action is not only limited to new venture creation, as there are other features of entrepreneurial action which may include dreams, innovation and growth.

It has been identified that the majority of articles published in highly ranked journals such as *Entrepreneurship and Regional Development,* the *Journal of Business Venturing,* the *Journal of Developmental Entrepreneurship,* and *Entrepreneurship Theory and Practice,* do not extensively discuss entrepreneurial action (Bird and Schjoedt, 2009; Shaver, 2012a).

When investigating entrepreneurial action, a focus on intentions alone is not sufficient as effort is also crucial in gaining an in-depth understanding of action. A thorough conceptual understanding of entrepreneurial action can be achieved through recognising that this phenomenon comprises of multiple antecedents, which include the internal motivation, intention, effort, and the external limitations and opportunities. Furthermore, entrepreneurial action may involve an existing firm, may involve specific activities, and may lead to the creation of new wealth (Shaver, 2012a).

The action part of entrepreneurial action originates from philosophy and psychology. The discipline of psychology is often labelled as 'the science of behaviour', which some textbooks also provide 'thought' as an additional target of the study (Shaver and Tarpy, 1993). The philosophical foundations of psychology explain two primary relationships existing between the body (observable behaviour) and the mind (thought processes). The most well-known of these is likely to be Cartesian dualism, which explains the idea that the body and the mind are separate. This view explains that the mind has two fundamental functions: understanding and will. Understanding occurs from the examination of ideas (some are developed from the senses, and some are not developed from sensory experience). Will directs the movements and activity of the body. Descartes explained that the mind influenced the body through a specific brain structure, known as the pineal gland (Shaver, 2012a).

Monism is the alternative view to Cartesian dualism, which explains that the body and the mind are one. There have been two predominant versions in the roots of modern psychology. The first version is known as materialist identity theory,

developed by Thomas Hobbes, which explains that simply the mind is the body. The second version is known as functional materialism. This view explains that the operation of computers is an analogue to the operations performed by the mind (Shaver, 2012a).

It is explained that the entrepreneurial actions performed by entrepreneurs are steered by their perceptions of the external environment, rather than the external environment as it might be viewed by other individuals. Heider (1958) explains action is a product of both person and environment:

$$B = f(P,E)$$

B represents behaviour, *P* represents personal force, and *E* represents environmental force. Shaver (2012a), explains that it is important to consider both the internal motivations of the individual as well as the environment in which the behaviour occurs, which is too often disregarded in entrepreneurship research. Luck and opportunity are considered as dispositional elements of the external environment, while ability and intention are dispositional elements of the person.

2.12 Entrepreneurial activities

Robert Bresson (1975), who is a well-known French film director, described the creative process as: *'Make visible what, without you, might perhaps never have been seen.'* Baron (2007, p. 168) explains that this description applies to entrepreneurship and new venture creation, as it consists of bringing into existence "something that might, without an entrepreneur, never have existed."

Mathias and Williams (2018, p. 263) define an entrepreneurial activity "as a singular task in which entrepreneurs engage". One such example of an entrepreneurial activity is explained to be as simple as taking out the rubbish as it reflects a task which is potentially performed while being an entrepreneur.

Shaver (2012a) explains entrepreneurial action may be found in various settings; however, entrepreneurial activities are identifiable parts of entrepreneurial behaviour which lead to the creation of a new venture. Some of these activities (also known as tasks) may be completed in a relatively short duration such as registering for a business license, whereas other activities may be completed in a much longer duration such as researching a target market.

Most often the performance of these activities acts as a proxy for entrepreneurial behaviour, mainly due to being discrete and being able to be more easily measurable.

A task such as writing a business plan, is therefore, presumed to involve a long series of intentional entrepreneurial behaviours. Thus, when explaining what entrepreneurs do, it is crucial to distinguish entrepreneurial behaviours from entrepreneurial activities. Shaver (2012a) emphasises the importance of understanding that entrepreneurial action is not limited to the activities which are required to create a new venture.

In order to provide a more in-depth insight into entrepreneurial activities involved at different stages of the entrepreneurial process, the following section has divided entrepreneurial activities into two main stages: new venture creation tasks and new venture growth tasks.

2.12.1 New venture creation tasks

Describing the specific role and activities that entrepreneurs perform in new venture creation is explained to be difficult and complex because entrepreneurs, unlike individuals in other occupations, do not have clearly defined roles, duties, responsibilities, and activities. Some of these tasks may include implementing new processes, hiring and training staff and ensuring all the procedures run adequately, in order for the venture to continue to operate and survive (Bygrave, 2020).

However, models of the entrepreneurial process provide frameworks for identifying several key tasks that are highly fundamental (Ardichvili et al., 2003; Baron, 2006a; Shane, 2003). Collectively, these frameworks demonstrate that even though entrepreneurs perform a variety of different tasks, the following are considered to be the most fundamental: (1) generating ideas and vision for new products or services, (2) recognising and exploring opportunities related to these ideas, (3) gathering the resources required for developing these ideas through the creation of a new venture.

As previously mentioned, these are not the only activities performed by entrepreneurs (e.g., they also make decisions and develop business strategies), but these tasks are viewed as fundamental to early stages of new venture creation (Baron, 2007). These fundamental tasks are discussed further below.

2.12.1.1 Generating new ideas

There have been many definitions provided for creativity, however, most acknowledge that it involves the development of: (1) something innovative, which did not exist previously, and (2) something merely innovative and new but also useful and

relevant. Creativity in its strongest state, is easy to recognise such as: Einstein, de Vinci, and Shakespeare- their ideas, theories, and products which they introduced to the world, were new and certainly useful. Although, identifying the cognitive foundations of creativity is a much more complex task.

All individuals obtain a large amount of information in the long-term memory. Research explains that the information is not stored at random, rather, it is grouped into various cognitive structures or frameworks. Among these, concepts are fundamentally relevant to creativity and the development of new ideas. Concepts are explained as categories for objects or events that contain similarities. One such example is the fields of geology, physics, chemistry, and biology which are different in many ways, however, they are all considered as part of the concept science. Concepts provide crucial benefits with respect to creativity as they provide "ready access to vast amounts of previously stored information that can facilitate processing such information in various ways" (Baron, 2007, p. 169). It is important to note that on the other hand, concepts may result in a 'mental rut," resulting in preventing individuals from relating information between different concepts.

To overcome the constraining effects of concepts, cognitive research (e.g., Ward, 2004) suggests that this can be achieved by stretching or expanding concepts in various ways. For example, concepts can be combined, to develop something which is both new and useful. The combination of the concepts 'telephone' and 'camera' have resulted in the idea for mobile phones with built-in cameras. An example of concept expansion is originally the concept 'service station' was used to be a place where only fuel could be purchased, however, now it has been expanded to into a place where wide variety of products are offered, including food and clothing. Concepts can also be expanded by analogy – which is by observing similarities between objects or events which are often considered as dissimilar. For instance, one scientist observed how plant seeds and burrs clung into clothing through small hooks, he then recognised that this system would also work in other contexts, and that is how the idea of Velcro was developed.

Thus, it seems that creativity develops from the operation of basic cognitive processes which allow individuals to operate and use information in new ways. Research evidence suggests that concepts and related cognitive processes are crucial

in generating new ideas and promoting creativity (e.g., Cianciolo, Matthew, Sternberg and Wagner, 2006; Sternberg, 2004).

2.12.1.2 Recognising opportunities

Opportunity recognition requires active, conscious, and endogenous agency from the individual, who plays an active role in recognising opportunities, based on their distinctive and subjective experiences and interpretation of the information that is available to them. While some aspects of opportunities presented may be viewed as objective, individuals need to navigate and process this information, using their mental prototypes and unique experiences, knowledge, feelings, and affective states (Costa, Santos, Wach and Caetano, 2018).

Ideas for new products and services, are considered as the raw material for entrepreneurship, as it is often from these ideas that the emergence of business opportunities occurs. It is important to recognise that in the field of entrepreneurship there has been a continuing discussion addressing the question of whether opportunities are recognised (they are present in the external world and are identified by specific individuals), or instead they are created (they develop in the minds of specific individuals who create them from their own cognitive resources and knowledge) (e.g., Alvarez and Barney, 2005).

Despite the specific origins of opportunities, they are considered as the starting point for entrepreneurial action, for efforts performed by entrepreneurs to create new ventures which will exploit these opportunities. The decision to perform such activities comes from the entrepreneur's belief that they have identified an opportunity which is yet to be recognised by others, therefore, can gain benefits from being the first to introduce it to the marketplace (Durand and Coeruderoy, 2001).

Traditionally opportunity recognition was not recognised as a process. However, most scholars now view opportunity recognition as an active process which involves human cognition. Furthermore, understanding how it happens may result in developing ways of improving its occurrence – techniques for encouraging and assisting current and future entrepreneurs to identify opportunities which will have individual benefits but also be beneficial for the larger community.

Research on the issue of understanding why only certain individuals recognise opportunities demonstrates that a crucial part relates to the central role of information. It seems that some individuals are more likely than others to recognise

opportunities for several reasons which include better and more convenient access to information and superior ability to effectively use available information. One particular process which is suggested to provide the cognitive foundations to recognise opportunities is pattern recognition (Matlin, 2004). However, it should be noted that access to and effective use of information are not the only behavioural and cognitive factors which contribute to opportunity recognition. Four additional factors have also received wide attention: (1) actively search for opportunities, (2) alertness to opportunities (the ability to recognise them when they occur), (3) prior knowledge of the market, industry, or customers, and (4) the extent and quality of the individuals' social networks – their connection and relations with others (Fiet, Clouse and Norton Jr, 2004; Ozgen and Baron, 2007). The achievement of entrepreneurial performance depends on the entrepreneurial process (An, Zhang, You and Guo, 2018) and the key in the entrepreneurial process lies in entrepreneurial opportunities recognition (Garud and Giuliani, 2013). Thus, entrepreneurial performance indicates whether the recognised opportunity corresponds to the expectation or whether the entrepreneur receives the expected benefits (Chen, Chan, Hung and Lin, 2020).

As previously mentioned, the process of pattern recognition has been found to be closely related to opportunity recognition in the field of entrepreneurship (Baron, 2006b). This process involves recognising meaningful patterns in complex events, including trends or changes. Therefore, it requires: (1) recognising links between trends, changes, and events which at first appear to be unconnected, and (2) noticing that these connections make an identifiable pattern. Both steps are strongly affected by the cognitive frameworks which individuals possess – frameworks which have been developed due to experience. The more developed these frameworks, the more likely are individuals who possess them to recognise opportunities in a specific field, as these cognitive frameworks act as guides, which assist these individuals to recognise links between various events or trends (Baron, 2007).

There is additional evidence through research findings for the role of pattern recognition in identifying new business opportunities. For example, Baron and Ensley (2006) discovered that the cognitive frameworks for 'business opportunity' possessed by highly experienced entrepreneurs were significantly richer and clearer (e.g., demonstrated more focus) in comparison to less experienced entrepreneurs.

Pattern recognition may also play a key part in entrepreneurial alertness. Specific individuals may be more or less 'alert' to various business opportunities as they possess cognitive frameworks that allow them to recognise emerging opportunities even during times when they are not actively in search for them. These frameworks act as guides which help such individuals to recognise emerging patterns and related opportunities.

2.12.1.3 Acquiring essential resources

Another crucial new venture creation activity for entrepreneurs is acquiring essential resources – human, financial, and informational. These resources are considered as assets necessary to transform ideas into actual operating ventures, therefore, entrepreneurs devote a large amount of time and energy to acquiring them (Baron, 2007). It must be noted that not all entrepreneurs are equally able to successfully obtain essential resources, and differences in their proficiency can have major implications for their new ventures. Bygrave and Zacharakis (2007) explain that lack of sufficient resources is one of the major contributing factors to new venture failure.

The two man behavioural and cognitive factors which contribute to successfully obtaining essential resources are entrepreneurs' social skills – their ability to effectively interact with others (e.g., Baron and Markman, 2000), and entrepreneurs' social networks – the networks of relationships with others, which assist them to acquire the resources they require (e.g., Aldrich, 1999). These two factors are discussed in further detail below.

The role of social skills in resource acquisition

Specific social skills which have been demonstrated to have significant effects on outcomes individuals experience include: social perception (the ability to accurately perceive others), impression management (skills in making positive first impressions on others), expressiveness (the ability to express emotions openly and clearly), and social adaptability (proficiency in adapting actions to current social contexts) (e.g., Ferris, Witt and Hochwarter, 2001).

Individuals with high level of social skills can more effectively interact with others in comparison to individuals with low level of social skills across a variety of settings and contexts. Thus, this ability often contributes to entrepreneurs' success in acquiring essential resources – both human and financial. The specific social skills

discussed above have been found to play an important part for entrepreneurs in persuasion, and effectiveness in influencing others such as venture capitalists, potential customers and prospective staff (e.g., Baron and Markman, 2000).

Prior studies have shown that social skills are related to the success of new ventures as the higher the entrepreneurs' social skills the greater the financial success achieved through their ventures (Baron and Markman, 2003; Baron and Tang, 2007). Furthermore, the impact of social skills on new venture performance is mediated by entrepreneurs' effectiveness in acquiring relevant information and in obtaining required financial and human resources. Thus, the higher the entrepreneurs' are in several social skill, the more effective they are in acquiring essential resources (Baron and Tang, 2007).

In conclusion, it seems that entrepreneurs who have well-developed social skills face advantages in comparison to those with less developed skills – advantages which significantly contribute to the success of new ventures. Therefore, such skills should be considered to further understand the process of new venture creation.

Social networks, social capital, and acquiring resources

A crucial behavioural component in the new venture process is the social networks of entrepreneurs, which consists of the number and quality of their social ties to others. These networks are explained to be a reflection of the entrepreneur's social skills (Baron, 2007). Prior research demonstrates that individuals high in social skills usually develop larger and higher quality social networks than individuals low in social skills (e.g., Diener and Seligman, 2002). However, social skills are not the only factor which impacts on entrepreneurs' social networks. An entrepreneur's social networks are also strongly influenced by their social capital, which is defined as either (1) individuals' ability to extract benefits from their social structures and networks, or (2) these benefits themselves – the benefits individuals gain due to their relationships with others (Nahapiet and Ghoshal, 1998).

Social capital arises from knowing others (either directly or indirectly through other networks), developing a good reputation, and building established and continuing relationships. These contacts provide entrepreneurs access to a wide variety of tangible and intangible resources. Some of the tangible benefits may include financial resources and exclusive access to valuable information. The intangible

benefits may include support, advice, and encouragement, as well as trust and collaboration.

Research findings demonstrate that entrepreneurs often use their social networks as a source of information which contributes to assisting them in recognising opportunities and gathering resources (e.g., Ozgen and Baron, 2007). Entrepreneurs not only use information provided by their personal contacts, but also information gathered from professional forums (meetings, seminars), and from mentors – more experienced individuals who share their knowledge and provide guidance to them. Entrepreneurs' use of such information is closely related to the cognitive frameworks they have developed as a result of their experiences, such that the more developed these frameworks, the more they benefit from information gained through network. This illustrates close and continuous interactions between cognitive variables and those relating to social networks.

A large body of research evidence shows that both social networks and social capital have a fundamental role in the creation of new ventures as well as in the success of such ventures once they launched and operating (e.g. Kannadhasan, Charan, Singh and Sivasankaran, 2018; Zane and Decarolis, 2016). In conclusion, previous findings demonstrate that entrepreneurs' social skills contribute to their social capital, which in turn helps them to acquire resources, and contributes in many important ways to new venture success.

2.12.2 New venture growth tasks

New venture growth can occur in different parts of a firm's operations, for example its cash flow, net income, sales, customer base, market share, and employment (Murphy, Trailer and Hill, 1996). Although there is no single holistic measure of new venture growth, the literature suggests that the most fundamental measures of new venture growth are related to sales, employment, and market share. Empirical studies demonstrate that strong correlations exist between these three different size-based growth measures (Baysinger, Meiners and Zeithaml, 1982). Therefore, new venture growth tasks must be directed towards these three main operations.

Sales growth demonstrates how revenues of a venture vary over time. It shows the extent to which the firm's customers are increasingly approving the products or services which are offered (Robinson, 1998). Therefore, sales are the most frequently used measure of new venture growth (Murphy et al., 1996). Due to sales growth, a

venture gains revenue which can be reinvested into expanding resources or developing capability. However, sales growth is directly dependent on the firm providing a product or service which is available to sell, which for some firms it may takes years for developing their product for the target market. Therefore, for such ventures a more relevant indicator of growth performance may be a growth in employment (Gilbert et al., 2006).

Employment growth shows a change has occurred in the organisational composition or strategy of the firm (Hanks, Watson, Jansen and Chandler, 1994), which leads to an increase in the number of individuals working in the firm. This change is often as a result of an expansion in the scope of firm operations or a sudden increase in business. Employment growth means a venture acquires new human capital through which it can execute its strategies. The venture is also better equipped to evaluate the external environment to ensure it can compete more effectively (Box, White and Barr, 1994). In addition to signalling internal changes occurring within the firm, employment growth also shows the contribution the new venture is making within the community it operates in (Kirchhoff and Phillips, 1988; Venkataraman, Van de Ven, Buckeye and Hudson, 1990).

Market share growth, similar to sales growth, provides an indication of the approval of the venture's products or services in the market. However, unlike sales growth, market share growth is an external measure of growth which depends partly on the state of competition in the venture's industry. A firm's market share can increase due to intensive efforts of the firm to increase its share, or from industry dynamics, such as the retraction of a competitor, which result in the firm being awarded. Market share growth can be assessed based on the industry or at the level of a specific product category (Kerin, Varadarajan and Peterson, 1992).

2.13 Entrepreneurial behaviour

One of the major challenges for researching behaviour is to determine as accurately as possible, what might be happening in a respondent's head (Shaver, 2012a). Furthermore, behaviour is considered as a broad concept. The Merriam-Webster dictionary, defines behaviour as "anything that an organism does involving action and response to stimulation" (Merriam-Webster.com, 2017). This broad understanding is also present in existing definitions of the construct of 'entrepreneurial behaviour' (Gruber and MacMillan, 2017). For example, the definition of entrepreneurial

behaviour provided by Gartner, Bird and Starr (1992) is the various behaviours and activities which individuals engage in when creating new ventures – and compare these to the behaviours and activities of individuals who are involved in an established organisation.

In a similar way, Bird, Schjoedt and Baum (2012, p. 890) define entrepreneurial behaviour as "the concrete enactment by individuals (or teams) of tasks or activities such as those named by Carter et al. (1996) (e.g., prepare a business plan, look for facilities, organise a team, hire employees, form a legal entity, and enter a market), which are required in some combination to start and grow most new organisations."

Entrepreneurs' behaviour is an individual-level behaviour, it is not a firm-level behaviour such as entrepreneurial orientation (Lumpkin, Cogliser and Schneider, 2009; Wiklund and Shepherd, 2001). Furthermore, at the individual level of analysis, there is often a lack of differentiation between behavioural terms. Behaviours, actions, and activities are often interchangeable terms.

Entrepreneurial behaviour is explained as being intentional, which is usually performed over time. As individuals do not create a new venture by accident. Furthermore, opportunity favours individuals who are prepared, as solutions may come into mind, however, the mind must be ready to receive them.

It has been discussed that it is important for future empirical studies to distinguish entrepreneurial behaviour from entrepreneurial activities, and to carry out research methods which allow to resolve issues arising from reflective self-reports gathered from convenience sample of participants (Shaver, 2012a).

As explained by Sheeran and Silverman (2003), Gollwitzer differentiates between two phases in behaviour achievement: (1) a motivational phase which is when the individual decides to act, and (2) a volitional phase during which the individual plans how they are going to make the decision become an actual reality. Adam and Fayolle (2015) explain that the theory of planned behaviour is concerned with the motivational phase while implementation intention is concerned with the volitional phase.

Entrepreneurial activities are explained to be deliberate and intended (Bird, 1988), and actions are defined as intentional behaviour (Greve, 2001).

The following section is a discussion on the behaviour of start-up entrepreneurs and growth entrepreneurs.

2.13.1 Start-up entrepreneurs' behaviour

A number of studies have investigated the start-up activities performed by entrepreneurs (Carter et al., 1996; Reynolds and Miller, 1992). Common start-up behaviours include organising a team, writing a business plan, deciding on a location, and so on. Among these studies, the Panel Study of Entrepreneurial Dynamics (PSED) is almost the only one which examines entrepreneurs' actions during the running of their businesses through collection of large random samples (Reynolds and Curtin, 2010). Furthermore, the PSED project measures entrepreneurial behaviour with a collection of potential activities (26 activities in PSED I and 34 activities in PSED III) which entrepreneurs might carry out during the start-up process (Mueller, Volery and Von Siemens, 2012).

Among the activities the most frequent ones reported were "serious thought given to the start-up," "actually invested own money in the start-up," and "began saving money to invest in the start-up" (Gartner, Carter and Reynolds, 2010). Through using the PSED data, Delmar and Shane (2004) concluded that completing a business plan and setting up a legal entity both enhance the legitimacy of new ventures, therefore, increasing the probability that the venture will initiate certain activities such as marketing and promotion, and talking to customers.

In another longitudinal study, Lichtenstein, Dooley and Lumpkin (2006) used a case study to investigate how venture creation activities are performed over the venture creation process. This study explored when start-up activities are performed, meaning their temporal dynamics. The authors used the list from PSED to identify nine start-up behaviours relating to the 'tactical organising' during the launch of the venture. Common start-up behaviours included defining an opportunity, investing capital, developing a prototype, forming a legal team, purchasing equipment, organising a founding team, installing a business phone, opening a bank account, and requesting funding.

Other scholars have investigated entrepreneurs' allocation of time to various activities, mainly through self-reports. Making use of the National Federation of Independent Businesses data and taking the preceding 12 months as a reference point, McCarthy, Krueger and Schoenecker (1991) and Cooper, Ramachandran and Schoorman (1998) measured behaviour through the question "Approximately how much of your time is allocated to the following activities?" The survey had listed the

following eight activities: dealing with employees, selling/ customer contacts, record keeping, producing products or services, maintenance, dealing with suppliers, arranging finances, and planning.

2.13.2 Growth entrepreneurs' behaviour

The behaviours of entrepreneurs usually evolve as the venture becomes more established. Hambrick and Crozier (1985) have discussed that as venture grow beyond the founding team, and evolve into a systematic organisation, founders can expect changes in both their responsibilities and in what they expect form others. Similarly, Hanks and Chandler (1994) have suggested most entrepreneurs focus on product development during the start-up phase, with a shift in priority towards sales during the growth stage.

Van de Ven, Hudson and Schroeder (1984) investigated chief executives' allocation of their time and making comparisons between six companies in their early stages with six in their growth stages. The results revealed that entrepreneurs in growth stages had a significantly higher level of education, more experience, worked harder, and had more involvement in the strategic planning and the operational decision-making process. Furthermore, growth stage entrepreneurs also maintained broader networks of ongoing relationships both internal and external to the firm.

During the start-up stage, entrepreneurs focus on the business opportunity they would like to capitalise on, as well as on start-up activities such as organising a founding team (Lichtenstein et al., 2006). Within this stage, the greatest challenges are acquiring customers and delivering product (Churchill and Lewis, 1983). Thereafter, the initial product or service may face some issues which would require the entrepreneurs' attention (Kazanjian and Drazin, 1990).

Often entrepreneurs take the roles of technical innovators and/or market controllers. Because the firm size remains small, the organisational structure is simple, as the entrepreneur takes central stage. Communication proceeds are on a face-to-face basis and therefore, there are few rules and regulations, and decisions are made quickly and informally by entrepreneurs (Mueller et al., 2012). As the number of staff is minimal, most often communication partners are external, and the entrepreneur works directly with the suppliers and early adopters to refine their products (Hanks and Chandler, 1994).

As the business grows, the issues relate to managing and financing growth (Scott and Bruce, 1987). The production, sale, and volume distribution demand for additional specialisation in areas such as marketing and manufacturing roles (Hanks and Chandler, 1994). Therefore, specialisation is a by-product of the entrepreneur's delegation of tasks to staff. The responsibility transfer and control to others follows along with the establishment of organisational structure and processes (Churchill and Lewis, 1983). Thus, the process of decision making becomes more formal, and involves a clear process. Therefore, the entrepreneur is more likely to perform organisational tasks, coordinate activities, and to create an efficient system (Scott and Bruce, 1994). McCarthy et al. (1991) showed that entrepreneurs redistribute their efforts as the venture becomes more established. For example, growth stage entrepreneurs allocate more time dealing with employees, planning future activities, and managing finances, and thus, spend less time with customers.

In conclusion, prior research shows that as ventures move beyond the challenges relating to the start-up phase and begin expanding, entrepreneurs tend to replace 'first-hand direct' activities with managerial ones, whereas the time allocated to other activities such as managing finances and dealing with suppliers do not change significantly (e.g., McCarthy et al., 1991). Furthermore, among start-up entrepreneurs it appears that most of the actions performed are open-ended (e.g., defining an opportunity and developing a business plan), and these require significant amount of time and an ability to search the environment for resources. As the new venture expands, it is likely that the pace of work increases as entrepreneurs have to manage an increasing number of staff and activities in order to produce and distribute in volume (Mueller et al., 2012).

Mueller et al. (2012) discuss that most empirical studies fail to conduct inductive analysis to gain insight into what constitutes entrepreneurs' behaviour in a more holistic manner. In order to advance research and understand the complex phenomenon of entrepreneurial behaviour, Bird and Schjoedt (2009) have suggested to clearly define the behaviour, and to avoid using self-reports and single items.

2.14 Entrepreneurial effort intensity

What keeps entrepreneurs engaged and persevere through their new ventures is a crucial and yet an understudied phenomenon (Hoang and Gimeno, 2010). Shook et al. (2003) explain that there is little knowledge about how entrepreneurs sustain their

effort while implementing business opportunities. Furthermore, Bateman and Barry (2012) have asked for more studies on regulating effort in the process of trying to achieve long-term goals. Carter et al. (1996, pp. 151-152) found in their study that "individuals who started firms and put themselves into the day-to-day process of running an ongoing business… resulted in starting firms that generated sales and positive cash flow". Therefore, understanding the process of sustaining entrepreneurial effort is crucial as it can provide greater insight into the critical phenomenon of what happens after setting long-term venture goals (Bateman and Barry, 2012).

Yeo and Neal (2004, p. 231) define effort as "a limited-capacity resource that can be allocated to a range of different activities", and such allocation varies in intensity (Brown and Leigh, 1996; Yeo and Neal, 2004).

Morris, van Vuuren, Cornwall and Scheepers (2009) and Reynolds and White (1997) explain entrepreneurial effort intensity consists of the degree of hard work on both administrative and creative tasks since entrepreneurs must complete both task types. Examples of creative tasks may include strategising to grow the product line, entering into new partnerships, and developing new revenue streams. Examples of administrative tasks may include maintaining supplies and equipment, generating reports, and daily operation (Gartner, Starr and Bhat, 1999). Therefore, venture growth tasks are considered as creative tasks performed by entrepreneurs.

Shook et al. (2003, p. 390) state that understanding the activities performed by entrepreneurs, which is what they actually do, when starting a new venture is "perhaps the most under-researched aspect of the individual and venture creation".

Trevelyan (2011) discusses that there is lack of research on entrepreneurial effort and motivation. Entrepreneurs are required to perform multiple tasks; thus, they are required to make decisions about how to most effectively allocate their time and resources (effort). Multiple goal perspective has been implemented in the study conducted by Trevelyan (2011) in order to investigate how entrepreneurs allocate effort across these multiple tasks. "Multiple goal pursuit often requires a dynamic balance between opposing demands for the limited pool of personal resources, such as energy, time, and attention" (Louro, Pieters and Zeelenberg, 2007, p. 174). The findings of this research suggested to achieve a balanced effort across the various tasks required for new venture creation and successful establishment of the venture.

Thus, entrepreneurs must identify the tasks they are likely to put more or less effort into and compensate accordingly (Trevelyan, 2011).

The study conducted by Gielnik et al. (2015) investigated the relationship between entrepreneurial effort and entrepreneurial passion. Entrepreneurial passion has been explained as an intense positive emotion towards entrepreneurial tasks. Their findings indicated that new venture progress mediates the effect of entrepreneurial effort on passion. Furthermore, they concluded that entrepreneurs' passion increases when they make significant progress in their venture and when they invest effort.

High levels of effort are often rewarding for entrepreneurs and help them to achieve the success they desire, such as increased sales and profits (Bitler, Moskowitz and Vissing-Jørgensen, 2005). And especially for ventures that are at early stages, Foo, Sin and Yiong (2006) have emphasised the need for entrepreneurs to persevere to increase the chance of success for their venture.

This study has investigated entrepreneurial effort towards venture growth (entrepreneurial growth effort intensity) which is discussed in the next section.

2.14.1 Entrepreneurial growth effort intensity

In this study entrepreneurial effort intensity is referred to as entrepreneurial growth effort intensity (EGEI). This term has been created for this research to indicate the focus of entrepreneurial effort intensity towards venture growth tasks which are performed to achieve the goal of new venture growth. To the best of the researcher's knowledge this term is novel within the field of entrepreneurship.

Even in the literature of work motivation, scholars have come to the realisation that "the motivational psychology behind long-term pursuits is markedly understudied" (Bateman and Barry, 2012, p. 985), and have requested for more studies to provide insight on regulating one's effort while in the process of striving for long-term goals. Achieving new venture growth is described as a complex long-term goal thus, this study aims to contribute to the knowledge gap on exerting effort towards long-term goals.

Achievement is described as the result of talent and effort, and effort as "a function of the intensity, direction, and duration of one's exertions toward a goal" (Duckworth, Peterson, Matthews and Kelly, 2007, p. 1098). The consistency of effort towards long-term goals is difficult to observe as it is less obvious in comparison to the amount of energy an individual invests in a task at a given moment in time. A similar view is that

capturing the importance of working harder is much easier than capturing the importance of working longer without changing objectives which may be less noticeable.

2.14.2 Perceived progress and entrepreneurial effort intensity

Uy, Foo and Ilies (2015) discuss experiencing a sense of progress can have a positive impact on motivation during work. Momentary experiences of making progress, even if it is just small and ordinary, can have a significant impact on an individual's day-to-day motivation. These experiences of making progress referred to as "small wins", are described as brief and plausible experiences which can promote moderate levels of arousal which can then result in confidence and empowerment to persist and keep moving forward (Weick, 1984).

"Big wins" refer to ultimate breakthroughs and long-term goal achievement which are very important, though they do not occur often. Amabile and Kramer (2011) explain that even small steps of experiencing daily incremental progress could have a profound impact on an individual's motivation, as these ordinary experiences add up into critical steps which can lead to sustained performance over time. Their study demonstrated that experiencing making progress at work increased workers' motivation on that specific workday.

Expectancy models (Klein, 1991; Lewin, 1935) demonstrate that perceptions of moving towards reaching a goal could increase persistence towards that goal (Atkinson and Birch, 1974). Furthermore, individuals tend to exert more effort on goals which they expect to achieve (Olson, Roese and Zanna, 1996). Regulatory focus studies suggest that individuals high in promotion pride tend to increase effort after experiencing wins and decrease effort after experiencing losses, while individuals high in prevention pride tend to decrease effort after experiencing wins and increase effort after experiencing losses (Higgins, Friedman, Harlow, Idson, Ayduk and Taylor, 2001). Entrepreneurs on average tend to regulate their actions through a promotion focus rather than a prevention focus (Corbett and Hmieleski, 2007; McMullen and Shepherd, 2002).

Examining individuals' perceived progress over time while pursuing goal-relevant tasks contributes to understanding the mechanisms which influence subsequent effort intensity (Uy et al., 2015). Wanberg, Zhu and Van Hooft (2010) study on examining goal progress and effort, demonstrated that among the unemployed,

progress towards getting a job predicted decreased job search effort. Therefore, in their study progress negatively predicts effort intensity. Uy et al. (2015) explain there are two unique characteristics in Wanberg et al. (2010) study which explains their findings. The first characteristic is that finding a job is directed towards making a situation better. Therefore, stress experienced due to being unemployed and pressure experienced relating to finding work may impact job seekers in a unique way than entrepreneurs who are at the growth stage of their ventures.

Entrepreneurs have a job as well as a business, which they try to keep it financially viable, which is different to trying to find employment. Unemployed individuals may reward themselves by having a break, hence exert less effort, when they perceive that they have made some progress. The second characteristic is that finding a job has a clear goal, which is getting a job offer. Gaining employment is a short-term goal which has a clear end point of getting a job, after which job search effort is no longer required. Therefore, it can be considered as a static goal such as buying a new house (Uy et al., 2015).

On the other hand, the goal of maintaining and growing a financially viable business venture requires continuous effort. This entrepreneurial journey is not as straightforward, and progress is at times uncertain and occurs less often (Uy et al., 2015). Entrepreneurial venture goal is dynamic in nature and can be compared to work goals such as continuous improvement in productivity among workers (as in Amabile and Kramer, 2011 study).

Huang, Zhang and Broniarczyk (2012) study showed that individual's mental representations of their goal progress assisted in sustaining their efforts and remaining engaged in their goal striving. Individual's mental representation of goal progress might act as an indicator that the goal is achievable and therefore, remain motivated to pursue (Uy et al., 2015). Goal striving theories suggest that individuals are motivated to pursue a particular goal if they perceive that they are moving towards that goal (Liberman and Förster, 2008). This mental representation of goal progress is discussed to be a fundamental mechanism that will increase effort towards long-term goal pursuits within the presence of two conditions; (1) if the individual's effort is required for the eventual goal attainment and (2) gaining accurate progress is difficult to measure (Huang et al., 2012).

2.14.3 Perceived progress variability and entrepreneurial effort intensity

Examining experiences can provide a deeper insight into motivational processes (Kanfer, 2009). Although goal progress has been explained to matter in motivation, there is a lack of research on progress variability.

It is expected that when entrepreneurs experience consistent favourable progress over time, it should lead to the exertion of increased effort. The motivational principle in progress mastery (Bandura and Jourden, 1991) or mastery modelling (Bandura, 1997) explain that individuals must experience progressive success to be able to achieve high levels of performance outcomes. Uy et al. (2015) argue that perceived progress variability over time will have a have a direct impact on effort intensity.

If entrepreneurs experience steady progress over time which is equivalent to low levels of perceived progress variability, they can then build stronger links between current effort and the likelihood of achieving desired goals (Uy et al., 2015). Weiner (1985) explains individual's causal attribution for achievement impacts on subsequent goal striving, and the stability element impacts on individual's success expectancies (Eccles and Wigfield, 2002). Therefore, experiencing consistent levels of progress over time would signal the entrepreneur to make direct connections to their effort (Weiner, 1985). This in turn results in improving the entrepreneurs' self-esteem which then often leads to exerting more effort in the goal striving process (Baumeister, Campbell, Krueger and Vohs, 2003; Graham and Weiner, 1996).

High levels of progress variability over time such as the entrepreneur experiencing very high progress levels one day and then low progress levels the other day, would have a negative impact on entrepreneurial effort intensity as it would affect the entrepreneur's self-confidence in their ability to sustain progress levels. Furthermore, a high level of variability in perceived progress would very likely make the entrepreneur doubt that progress is directly related to effort, and could therefore, reduce their motivation to exert more effort (Uy et al., 2015).

Experiencing progress over time can result in freeing up cognitive resources, which is then left available to enable effective strategies which could increase an individual's attention directed towards a particular goal (Sweller, 1988). Thus, achieving progress means that an individual is not required to think too much about the latest goal relevant tasks and will therefore, be able to move towards the next required goal relevant tasks.

The next section discusses the link between entrepreneurial intention and behaviour.

2.15 Entrepreneurial intention-behaviour link

The questions of why, when, and how some individuals but not others realise and exploit opportunities in order to create goods and services has long been a main interest among entrepreneurship scholars (Shane and Venkataraman, 2000). There was a surge in studies in the 1990s and the 2000s focusing on investigating what predicts and explains the differences between those possessing an intention to act and those lacking the intention (Schlaegel and Koenig, 2014). Majority of these studies thus far have mainly focused on predicting and explaining intentions, therefore, there remains a lack of understanding as creating and growing ventures only occurs if intentions are followed by actions.

Only recently, entrepreneurship researchers have started to empirically investigate the link between entrepreneurial intention and subsequent actions (Gielnik, Barabas, Frese, Namatovu-Dawa, Scholz, Metzger and Walter, 2014; 2015; Kautonen, Hatak, Kibler and Wainwright, 2015; Obschonka, Silbereisen, Cantner and Goethner, 2015; Rauch and Hulsink, 2015; Reuel Johnmark, Munene and Balunywa, 2016; Van Gelderen, Kautonen and Fink, 2015). These studies consistently discover that a large proportion of individuals who express an intention to perform start-up activity do not follow through their intention with concrete actions.

Thus, there is a clear indication of the need to understand what factors determine whether intentions translate successfully into subsequent actions. To address this issue, recent studies have further investigated action regulation. Gielnik et al. (2014) discovered that action planning (the degree of detail in the planning of future actions) positively moderates the relationship between entrepreneurial goal intentions and new venture creation for a period of up to 18 months post the formation of intentions. A further example is the study conducted by Van Gelderen et al. (2015) who discovered that self-control positively moderates the relationship between intention and action. Both studies demonstrate the importance of distinguishing goal setting (formation of intention) from goal striving (implementation of intention). In implementation intention variables involved in regulating actions play a distinct and vital role.

Dholakia and Pbagozzi (2003, p. 890) discuss "there is often a wide chasm between the formation of an intention and the performance of actions necessary for intention realisation". As a result, not all intended entrepreneurs enact on their intentions. Furthermore, it has been debated that the link between intention and behaviour is not systematic (Adam and Fayolle, 2016). Thus far, intention models fail to "address the processes by which intentions are translated into action (Sheeran and Silverman, 2003, p. 2154). Therefore, there is still much to discover from the entrepreneurial intention-behaviour link, and as a result exits a gap in the literature (Adam and Fayolle, 2016).

While the current literature acknowledges the important role that intentions play as a first step toward carrying out behaviour, there is no direct link between intentions and action (Adam and Fayolle, 2015). The study conducted by Ajzen (1987) reveals that intentions only explain about 30% of the variance in behaviour. This result was confirmed by a meta-analytic review of 185 studies conducted by Armitage and Conner (2001) which found that on average only 27% of the variance in behaviour could be explained by behavioural intentions. Furthermore, meta-analyses on exercise behaviour revealed that about a quarter of the variance of actual exercise behaviour, can be predicted by individuals' intentions to exercise (Mohiyeddini, Pauli and Bauer, 2009).

The intention-behaviour link is researched in many different disciplines, mostly in health psychology (van Gelderen, 2009), however, thus far has not been researched in great depth in the field of entrepreneurship. In the entrepreneurial context, Schlaegel and Koenig (2014) found that 37% of entrepreneurial behaviours can be explained by entrepreneurial intentions.

A meta-analysis of meta-analyses conducted by Sheeran (2002) performed across a variety of fields revealed that intentions predict on average 28% of variance in subsequent behaviour, which also demonstrates that a substantial variation in behaviour is unpredicted. There is evidence which suggests that the intention-behaviour link is mainly as a result of inclined abstainers, and not disinclined actors (Sheeran, 2002). However, these findings may not apply to the specific intention of growing a venture, as currently there is little data available on the relation between entrepreneurial intention and behaviour (van Gelderen, 2009).

The lack of studies on the relation between entrepreneurial intention and behaviour is explained to be mainly due to the characteristics of entrepreneurship, which is one of complexity, uncertainty, change, risk as well as facing both resource and financial constraints (Baron, 1998; Gibb, 1993).

In a Ugandan sample, of those individuals with intentions to perform a set of five start-up activities, 55% had started their venture after a 30-month period, furthermore, the study demonstrated a zero correlation between entrepreneurial goal intention strength and new venture creation (Gielnik et al., 2014).

Findings such as the above study demonstrate the importance of researchers not only focusing on intentions when investigating how entrepreneurial goals translate into subsequent actions (van Gelderen et al., 2017). Furthermore, there are strong arguments that in the entrepreneurial context the relationship between intention and action will be even lower than the average relationship found in other fields (Sheeran, 2002). Majority of the research on goals and subsequent behaviour has investigated simple goals and short-term tasks. When starting and growing a new venture, the path from intention to action is a complex mid-to-long term goal, which involves uncertainty, which can be influenced by and depend on a number of intrapersonal and contextual factors (Carter et al., 1996; Lichtenstein et al., 2007).

2.16 Action regulation

It is important to understand that not all actions are conscious, and therefore individuals do not have rational control over them. Chaiken and Trope (1999) distinguish between two processing systems, which Griffin, Kahneman, Aspinwall and Staudinger (2002) label these two processing systems as system 1 and system 2. The processing of information as well as the control of actions in system 1 is completely automatic. As a result, processes do not require an individual's conscious attention. On the other hand, in system 2 processes are controlled and require effort by the individual, which includes rational analysis (van Gelderen, 2009). Research demonstrates that most of the human behaviour relies on system 1 processing, as most behaviour is automatic and requires minimal effort. As a consequence, system 1 processing, limits individuals' capacity to exercise conscious attention, which is the reason behind humans' continuous quest to automise behaviour as much as possible (Bargh and Chartrand, 1999).

System 2 processing occurs less regularly, as it requires effort by the individual, and consumes resources such as processing capacity and attention (van Gelderen, 2009). As a result, human's information processing capacity is highly limited and readily exceeded. Therefore, humans tend to try to minimize cognitive effort, and as a result try to use short-cuts in way of thinking (Baron, 1998). Cognitive psychologists distinguish between two processing modes: systematic processing which is a careful and analytical processing, and heuristic processing, which is a fast and effortless processing using various short heuristics and short-cuts, which can be applied either consciously or unconsciously (Baron, 2004). Conscious processes are triggered when the automatic and effortless heuristics are disrupted. It is important to emphasise that both system 1 and system 2 are necessary as they complement each other, and neither can be favoured or labelled as the more effective or efficient (Frese, 2007).

Entrepreneurs are often required to regulate actions on the conscious level, as a result of operating in situations which are uncertain, complex, and constantly changing, therefore, are continuously expected to make various important decisions. System 2 processing capacity has limitations, and as a result can lead to cognitive overload. This occurs when change, uncertainty and complexity meet various time pressures and if there is too little or too much information available for the entrepreneur. Once system 2 processing capacity reaches its limit, habits and routines take over, and therefore, return to system 1 processing. Thus, successful entrepreneurs must develop the correct habits and routines, as well as the ability to make the right decision of when to change to systematic processing (van Gelderen, 2009).

Self-regulatory strength studies, in specific looking at self-control (Baumeister, Gailliot, Dewall and Oaten, 2006; Baumeister and Heatherton, 1996), have demonstrated that in action regulation, one's ability to use systematic and conscious processing can be depleted. Therefore, self-regulatory strength is a resource, which becomes depleted once being used. Furthermore, research shows that when an individual has used self-control on an initial task, they are less successful at other subsequent tasks which also require self-control (Schmeichel and Baumeister, 2004). However, through various methods such as, sleeping or distractions, self-regulatory strength can be replenished (van Gelderen, 2009).

Action theory (Frese, 2007; Frese and Zapf, 1994), is a process theory which explains how individuals regulate their actions in order to achieve goals in both routine and novel states. This theory recognises the various levels of consciousness and automaticity within action regulation, and furthermore, it explains several phases which exist within the action process; goal setting, mapping of the environment, planning, executing, monitoring, and feedback (van Gelderen, 2009). Action theory has been developed to apply to long term goals such as starting a new venture, as well as to apply to short term goals, such as making a phone call by picking up the phone. Frese (2007) explains that from the perspective of an action regulation, there can be uncertainty within each phase in the action process, which may lead to inaction as a result of action uncertainty.

2.17 Contributing factors which may cause inaction

van Gelderen (2009) has identified a list of factors which can act as inputs, which may result in lack of action, which he also labels as 'inaction', despite having persistent entrepreneurial intention. In order to gain a more thorough understanding of these contributing factors, it is recommended that future research should measure the relative strength, and interrelationships of these factors. Below is an explanation of each of these contributing factors and how they may cause inaction.

2.17.1 Intention strength instability

An intention towards a risky goal such as starting a new venture, may be continuously present, however, the level of intention strength may vary. This change in strength level may become problematic for action control, especially when strength level is low. Starting a new venture, requires conscious and systematic behaviour often in an uncertain and risky environment. Therefore, for intentions to drive the action, intentions require a certain level of strength (van Gelderen, 2009).

2.17.2 Lack of intention elaboration

Sheeran (2002) explains that intention instability may be as a result of a lack of intention elaboration. Some individuals have thought about starting a new venture for a long period of time; therefore, this may cause inaction if they have developed their entrepreneurial intentions on the basis of a 'superficial analysis'. As a result, they may experience feelings of task aversion and/or anxiety, when they attempt to perform a

task. Action control problems may arise due to a lack of direction and detail on when, where, and how to take specific actions.

2.17.3 Competing goals

Most individuals have multiple goals which they organise in a goal hierarchy (Austin and Vancouver, 1996). Starting a new venture may fulfil multiple goals such as wealth, challenge, autonomy, and identity. However, these goals may be achieved through other various means and not just through starting a new venture. Therefore, the position as well as the strength of entrepreneurial intention in the goal hierarchy may contribute to individuals not taking any action. It is also important to understand that intentions continuously compete for various resources required to fulfil them such as time and attention (van Gelderen, 2009).

Negative feelings may develop due to goal selection becoming a difficult decision. Research demonstrates that when individuals are in a situation where they must choose between multiple attractive options, there is an increased tendency to postpone action (Anderson, 2003). Goals also compete on both level of urgency and time frame. Creating a new venture which may be a medium-term goal, might be serving to fulfil a long-term goal such as financial freedom. Therefore, this may put the fulfilment of the entrepreneurial intention at risk, as there may be other short-term goals which may possess higher priority. Goals of higher level, although may be considered important, are not always at the forefront of attention (van Gelderen, 2009).

2.17.4 Action uncertainty

Even if all the above mindset factors are absent or addressed, procrastination and inaction can still occur if the individual faces action uncertainty. Even when the entrepreneurial intention is developed and present, the individual may not necessarily know what to perform on the action level (van Gelderen, 2009). This lack of action certainty could be a result of the entrepreneurial goals not being in line with the SMART formula (specific, measurable, attainable, realistic, and time-bound) developed by Doran (1981). Furthermore, plans could be poorly developed, therefore, lacking detailed description of where, when, and how specific actions need to be performed.

Action uncertainty could also be as a result of lack of entrepreneurial experience. Mitchell, Smith, Morse, Seawright, Peredo and McKenzie (2002) explain that experienced entrepreneurs may have both entrepreneurial action scripts and ability scripts. Action scripts refer to the resources and relationships required to perform entrepreneurial activity. Ability scripts refer to the thoughts relating to the skills, knowledge and ability required to create a new venture. Therefore, it is explained that individuals who have developed entrepreneurial action scripts can take action at a much faster pace, at times may even be without much cognitive processing, on the other hand, inexperienced entrepreneurs require practicing cognitive processing at each step of the new venture creation process.

Inexperienced entrepreneurs are also more likely to associate incorrect actions with feelings of regret, which can lead to procrastination and avoidance of experimentation. Lack of skills and knowledge requires conscious action control, which in turn requires time, energy, and cognitive capacity. Therefore, when this process becomes too difficult, goals other than starting or growing a new venture may take priority, or past habits and routines may take over (van Gelderen, 2009).

Carver, Sutton and Scheier (2000) explain that in some circumstances, inaction may lead to feelings of relief rather than dejection. This could occur if inaction is as a result of the activation of the avoidance system due to risk, uncertainty, and aversive aspects. This scenario would be preferred in comparison to experiencing distress, as a result of failure due to the averting of the avoidance goal.

2.18 Emerged negative feelings associated with contributing factors

The contributing factors discussed above, may lead to the development of the following feelings, which van Gelderen (2009) explains can result in inaction, even if the individual has high levels of entrepreneurial intention strength:

2.18.1 Fear

It is explained that fear is developed between the time intention is formed and when intention is realised. Furthermore, fear increases as the prospect of a risky and complex event approaches (Loewenstein, Hsee, Weber and Welsh, 2001). If fear is an automatic process, then it may activate the automatic avoidance response system, which most likely will cause inaction (Gable, Reis and Elliot, 2000). On the other hand, if fear is a conscious emotion, it will have an impact on cognition, which in turn may

lead to reflection (Baumeister, Vohs, Dewall and Zhang, 2007). In some individuals, fear can drive action, such as being afraid of missing out on an opportunity (Baron, 2004). However, when the time comes to implement intentions, most individuals become afraid of loss or failure, and therefore, become more cautious (van Gelderen, 2009).

Furthermore, if there is an increase in attention for immediate negative consequences of risky action such as loss, it is likely that inaction will be preferred over taking action. In the short term, most individuals associate regret with the actions they have performed. However, when looking back over longer periods of time, it is then that inaction is regretted most (Baron, 1998), and therefore, individuals who do take action, may be driven by anticipated regret of missed opportunities (Baron, 2004).

2.18.2 Lack of excitement

Individuals who feel a lack of excitement and enthusiasm, may find it difficult to start a new venture, despite having developed entrepreneurial intentions. The idea of creating and owning a new venture may seem attractive, but at times this may not translate into a state of excitement. Therefore, in order to perform an entrepreneurial task, a conscious effort must be applied, which as discussed previously requires self-regulatory strength. Intentions is required to drive the action, however, if there is a lack of excitement, the goal is likely to remain a wish. One main explanation for the lack of excitement, is that it may be possible that the intention of starting a new venture is competing with other intentions and goals which generate higher levels of excitement (van Gelderen, 2009).

2.18.3 Aversive feelings

Starting a new venture requires an individual to perform many diverse activities and tasks, and therefore, there is a high chance that one or more of these activities are averse to the entrepreneurial intention. Some of these activities may include; managing finances, learning about and complying with governmental regulations and policies and raising capital. Van Eerde (2000) and Steel (2007) explain that procrastination can occur in order to avoid the aversive feelings associated with these activities.

2.19 Strategies to overcome the contributing factors which may cause inaction

The problem lies in situations where there are high levels of entrepreneurial intention strength to start a new venture, however, individuals continue to postpone taking action. van Gelderen (2009) emphasises that personality factors are often not considered, as focus is on the strategies and behaviours that can be adopted in order to prevent and overcome procrastination and lack of action.

Starting a new venture, requires commitment and resources, and if it is only desired occasionally or not enough excitement is generated, then the individual may wish to assess the validity of their intention. In some situations, current inactive entrepreneurial intentions may become activated in the future, one such example is losing a job.

The following strategies have been recommended to overcome the contributing factors which may cause inaction (van Gelderen, 2009):

2.19.1 Dealing with competing goals

Starting a new venture is highly ambitious and challenging goal, therefore, it requires to be protected from distractions and other competing goals, for the goal to be realised. One strategy for dealing with competing goals is to prioritise, in order to ensure that the entrepreneurial intention is on top of the list of goals to achieve. Following this, time management techniques are required, in order to effectively allocate time, resources and energy for realising the goal. Entrepreneurship can be a long-term goal and is therefore, likely to be overpowered by more short-term, urgent goals (Frese, 2007). It has been discussed that effective time management techniques assist in the achievement of long-term, important goals (Covey, 1990).

2.19.2 Reducing action uncertainty

Skills and knowledge both assist in reducing action uncertainty. Once these become routine, then they can be processed automatically, therefore, the conscious capacity is then left available for other tasks. Implementation intentions can assist, through making plans which are detailed from an action regulation perspective, with specified environmental cues, which trigger the required action. The main aim here is to shift from conscious to unconscious processing. Experimentation can also assist in reducing action uncertainty, through gaining experience which leads to learning by doing (van Gelderen, 2009).

2.19.3 Overcoming fear and developing courage

Rachman (2004) defines courage as taking action, even when being afraid, therefore, it is distinct from taking uncalculated risks or not feeling fear at all. Courage is determined by three factors which include: exposure, skills and knowledge, and situational demands. Exposure refers to taking action and performing the required tasks, which then assists in reducing fear, as long as no negative events occur. Experimentation behaviours is highly important for entrepreneurship, especially when the individual is uncertain, or when much learning is required.

Skills and knowledge lead to confidence which in turn reduces feelings of fear and doubt. Situational demands refer to factors in the environment which force individuals to act in a courageous way, such as one's performance affecting another person's performance in a team setting. It is discussed that role models can also assist individuals to perform courageously. In the context of starting a new venture, situational demands can be formed in a team setting through assigning tasks in a way which other members would depend on and/or be affected by (van Gelderen, 2009).

2.19.4 Dealing with aversive aspects

Starting a new venture requires performing a variety of tasks, which either can be performed by the individual or they can be delegated. One strategy to deal with aversive aspects is to make the tasks more attractive, through the practice of rewards. Another strategy is to delegate the tasks to other people, who either do not find the tasks to be aversive or they are paid for completing the tasks (van Gelderen, 2009).

2.19.5 Improving self-regulatory strength

As explained previously, the capacity for conscious processing can be improved. Baumeister et al. (2006) research demonstrates that through exercising self-regulatory strength, it can lead to improvements in self-control, extending to fields unrelated to the practice. Therefore, van Gelderen (2009) concludes this research suggests that an individual can improve at performing entrepreneurial actions through the practice of completely unrelated activities.

2.20 New venture growth

New venture creation has been statistically associated with both job creation and regional development (Acs and Armington, 2006). Yet it is said that only 3.5% of new ventures grow sufficiently to evolve into large organisations (Barringer, Jones and

Neubaum, 2005). The relative scarcity of new venture growth in combination with its importance for both job creation has resulted in large number of studies aiming to explain why only a small number of new ventures grow (Gilbert et al., 2006).

Literature focusing specifically on new venture growth has developed for several reasons. First, attaining growth for new ventures has different implications than for established organisations. Unlike established organisations, which have already attained a certain level of viability and survival, new ventures are exposed to a liability of newness, which in the absence of growth, their rate of survival may be significantly decreased (Buederal, Preisendoerfer and Ziegler, 1992). Without growth, both new and small ventures are faced with a lower likelihood of survival (Freeman and Hannan, 1983), though as the size and age of the ventures increase, the adverse effect of lack of growth on firm survival is decreased.

Therefore, while the growth of established organisations is related to sustaining viability, new venture growth is about achieving viability. Second, the variance of growth rates across organisations reduces with both organisation size and organisation age, therefore, making the variance of growth rates for new ventures substantially greater than that for established organisations.

The economics literature confirms that for large and established organisations, growth rates conform to what is called Gibrat's Law, where growth rate is independent of size and age (Sutton, 1997). Although, Gibrat's Law has not been found to hold systematically for new ventures, which are described by a greater variance in growth rates. Thus, with this distinct difference from established organisations, explaining growth for new ventures is fundamental.

Majority of the new venture growth literature investigates the question implied by the high variance of growth rates among new ventures: e.g. 'Why do some new ventures grow more than others?'. However, this question as explained earlier primarily disregards how growth has actually been attained (Gilbert et al., 2006).

Venture growth is described as a fundamental goal of most organisations (Baum et al., 2001), it creates pressures on entrepreneurs and challenges them to adapt the roles they carry out (Whetten, Kimberly and Miles, 1980). When entrepreneurs experience venture growth they often struggle to remain involved in every aspect of the venture process, and as a result experience facing important decisions regarding

which roles to give up, which roles to retain, and which new roles to take on (Boeker and Wiltbank, 2005; Rubenson and Gupta, 1997).

Prior research shows that the roles entrepreneurs accept influence both their growth pursuits and motivations (Cardon, Wincent, Singh and Drnovsek, 2009; Powell and Baker, 2014). Thus far, there is a lack of extensive research on venture growth, in specific Mathias and Williams (2018) discuss the *how* and *why* entrepreneurs' role transitions impact the process of venture growth is understudied. Furthermore, prior research "largely disregards the manner by which growth has been obtained" (Gilbert et al., 2006, p. 928) and fails to understand "potentially qualitative differences in how firms achieve growth" (McKelvie and Wiklund, 2010, p. 261). Therefore, there is lack of theoretical explanations for how and why entrepreneurs manage activities and the potential impact on venture growth (Mathias and Williams, 2018).

Mai and Zheng (2013) explain only about half of nascent entrepreneurs found new ventures. Among these founders, less than 10 percent will experience growth (Reynolds and White, 1997). According to the resource-based view, entrepreneurship is viewed as a process by which entrepreneurs identify, attain, and accumulate resources in order to pursue perceived opportunities (Ireland, Hitt, Camp and Sexton, 2001; Roberts, Stevenson, Sahlman, Marshall and Hamermesh, 2006). New ventures which are able to develop, acquire, or exploit required resources which are inimitable, valuable and cannot be substituted, are more likely to gain sustainable competitive advantage which leads to improved performance in the market (Alvarez and Barney, 2007; Barney, 2001; Barney and Hesterly, 1996; Capelleras, Greene, Kantis and Rabetino, 2010).

The three resources which are most often investigated and found to be positively related to new venture growth are financial capital, human capital, and social capital (Baum et al., 2001; Liao and Welsch, 2003; Samuelsson and Davidsson, 2009). These resources are explained in the next section.

2.20.1 Financial capital and new venture growth

The financial capital a venture holds is known to impact on the sales and employment growth performance of new ventures (Cooper, Gimeno-Gascon and Woo, 1994; Lee, Lee and Pennings, 2001). Increased level of financial capitalisation is crucial as it provides entrepreneurs time to successfully implement strategic

objectives, allows entrepreneurs to either carry out more ambitious strategies or change their current course of action, thus, empowers the entrepreneurs to overcome the financial demands which are required to sustain the growth being experienced (Mai and Zheng, 2013).

Financial capital offers the flexibility required to support the venture's strategic endeavours (Zahra and Bogner, 2000). Additionally, apart from personal savings and angel investors, financial capital is usually sourced from external sources such as banks or venture capitalists (Mai and Zheng, 2013).

2.20.2 Human capital and new venture growth

Human capital such as educational background (Sapienza and Grimm, 1997), prior related industry experience (Cooper et al., 1994; Eisenhardt and Martin, 2000; Siegel, Siegel and Macmillan, 1993), and prior entrepreneurial experience (Baum et al., 2001; Box et al., 1994) have been demonstrated to have direct effects on the sales and employment growth of new ventures. Prior experience in growing other ventures has also been shown to be an important catalyst for higher levels of venture growth (Wasilczuk, 2000).

Past empirical studies have reported that human capital variables have positive significant effects on the development of nascent entrepreneurs and subsequent success of ventures (Davidsson and Honig, 2003; Samuelsson and Davidsson, 2009). The educational and professional backgrounds of entrepreneurs should be good predictors of their capabilities. Specific human capital consists of work experience and industry specific experience, which improves the productivity of entrepreneurs. Mai and Zheng (2013) state entrepreneurs with greater human capital will have less uncertainty regarding their efficiency and will understand the market conditions faster than those who possess less human capital; hence, they are more likely to experience venture growth.

2.20.3 Social capital and new venture growth

Social capital also impacts growth aspirations among entrepreneurs (Liao and Welsch, 2003), which is considered an antecedent of subsequent venture growth (Baum et al., 2001). Samuelsson and Davidsson (2009) study demonstrated that among nascent entrepreneurs, projects which extensively use social capital make significant progress in the venture creation process. Social capital allows

entrepreneurs to access resources (Florin, Lubatkin and Schulze, 2003) or novel information (Uzzi, 1999) in order to produce opportunities (Baker and Nelson, 2005). Based on a sample of 1,700 new ventures, Brüderl, Preisendörfer and Ziegler (1992) found that network support assists with the growth of new enterprises. Therefore, it is argued that it is fundamental for entrepreneurs to network in order to survive (Huggins, 2000).

These networks incorporate individual sets of relationships which may be with suppliers, competitors, customers, or other various entities. The structure of the individual network as well as the location of their contacts within the social structure often create a competitive advantage in the growth process (Mai and Zheng, 2013).

2.21 Why new ventures grow

Gilbert et al. (2006) literature review revealed several key factors on why some new ventures experience higher growth rates in comparison to others. These factors and the way in which each effect whether the new venture will be capable of attaining growth are discussed below.

2.21.1 Entrepreneur characteristics

The wide belief that the entrepreneurial firm is an extension of the entrepreneur has resulted in many researchers examining the entrepreneur's character traits which are most likely to impact on the growth of the venture. A large number of personality traits have been considered, most of which are explained to have indirect rather than direct effects on new venture growth (Baum and Locke, 2004; Baum et al., 2001). Some of these characteristics include educational background (Sapienza and Grimm, 1997), prior related industry experience (Baum et al., 2001; Cooper et al., 1994; Siegel et al., 1993), or prior entrepreneurial or start-up experience (Box et al., 1994; Baum et al., 2001). Although, these characteristics have demonstrated well-established direct effects on both sale and employment growth of new ventures. Prior experience in growing other ventures has been supported as an important catalyst for higher levels of growth in small firms (Wasilczuk, 2000).

Prior experience is crucial as the knowledge required for making business decisions is strategic and therefore, requires time spent learning and practising a specific activity before tacit knowledge of the activity is formed (Cooper et al., 1994). Education and background experiences are discussed as fundamental as they allow

entrepreneurs to know where to go to collect information which is relevant to the venture as well as how to allocate the resources (Kirzner, 1983). Thus, an entrepreneur's prior experiences will result in competencies that influence the decisions made relating to a given activity (Buchele, 1967; Scherer, Adams and Wiebe, 1989; Susbauer, 1979). Seemingly, an entrepreneur who has related experience makes better informed decisions in comparison to an entrepreneur who lacks similar experience.

2.21.2 Resources

As previously mentioned, resources are positively related to new venture growth. For an entrepreneur to implement a strategic decision, he/she is required to allocate resources to the project (Arthurs and Busenitz, 2006). Although, being able to attract resources into a new venture might be the most difficult challenge entrepreneurs face, as the lack of reputation and a strong track record creates a perception of high risk by potential resource providers (Brush, Greene and Hart, 2001).

To successfully execute a decision firms are required to acquire the right fit of resources (Chandler and Hanks, 1994b). Various types of resources allow firms to effectively reach growth objectives through quality (Chandler and Hanks, 1994a), strength (Brush and Chaganti, 1998), as well as the competencies they create for the firm (Chandler and Hanks, 1994b, 1994b). However, the two resources which are investigated most often and have shown to be highly related to new venture growth (discussed in detail previously) are the financial (Cooper et al., 1994; Lee et al., 2001) and human capital (Birley, 1987; Cooper et al., 1994) resources the firms acquire.

Gilbert et al. (2006) literature review demonstrates a strong agreement among scholars that a venture's connections to external competencies are beneficial for its growth. Cooper (1985) found that growth oriented ventures tend to be created out of other established organisations and also engage in activities that are related to those of the 'incubator' organisation. Chrisman, McMullan and Hall (2005) discovered that using the assistance of counsellors from a Small Business Development Centre significantly impacted on the sales and employment growth to a point, after which too much assistance showed a hindrance for sustaining high levels of growth. Furthermore, Bamford, Dean and Douglas (2004) found that an organisation's board of directors is positively influential for its sales growth.

2.21.3 Geographic location

Increasingly, the geographic location of a venture has become a frequently recognised factor responsible for differences in survival rates in both new and small firms (Lechner and Dowling, 2003). Folta, Cooper and Baik (2006) found that when a venture's geographic location had more than 65 competing firms in it, a new firm operating from such a location had higher chances of failing than firms starting their operations from other regions. The competition which firms face for resources in high clustering locations effects their ability to attain resources required to sustain operations. As new ventures are highly dependent on the local environment for resources required to sustain operations (Romanelli and Schoonhoven, 2001), any challenges to attain resources locally will result in substantial implications for growth levels the firms will achieve. Due to inequality of resources available in various locations, a venture's geographic location involves strong implications for the growth it may be able to achieve.

For example, Silicon Valley is regularly acknowledged for the extensiveness of financial capital which is available within the region (Saxenian, 1990; 1994). However, inner cities are found to be deficient of high levels of financial capital (Porter, 1995; Taub, 1988). Furthermore, rural areas have also been found to be incapable of providing financial capital to its firms (Green and McNamara, 1987). Thus, greater access to financial capital may make it simpler for a venture which is in cluster regions such as Silicon Valley to finance growth, however, it is much more challenging for an inner city or rural firm to obtain. Ventures in such locations are likely to grow at a slower rate than ventures in cluster locations.

Similar challenges exist with human capital. It has been reported that the human capital of inner cities is incapable of supporting highly skilled industries (Porter, 1995). On the other hand, the human capital of cluster areas is widely recognised for its abundance (Hanson, 2000; Saxenian, 1994). Ventures experiencing growth require a supply of workers with specific skills (Baum et al., 2001; Chandler and Hanks, 1994a). As cluster locations may provide a larger supply of workers with relevant skill sets (Feldman and Florida, 1994; Saxenian, 1990), new ventures operating in such locations may have a greater capability of attracting workers with the right expertise that would assist the venture in pursuing growth objectives.

2.21.4 Strategy

Many studies on new venture growth have investigated the importance of a venture's strategy for the performance of its growth. These studies have shown mixed results regarding the strategies which lead to growth for new ventures. For example, Siegel et al. (1993) discovered that ventures which had in place focused strategies, operationalised as more revenue being created with a single product, had higher sales growth rates. On the other hand, Baum et al. (2001) discovered that low-cost and focus strategies associated negatively with their aggregate measure of both venture sales and employment growth, while differentiation through quality and innovation demonstrated positive relationships with venture sales, employment, and profit growth. These differences in results may be because of the fact that Siegel et al. (1993) implemented a 3-year measure of sales growth only, whereas Baum et al. (2001) implemented a combined annual measure of sales and employment growth. In the short term, focus strategies may need employees with specialised skills which may be challenging to acquire short term. Therefore, it might result in a negative relationship with employment growth.

Alternatively, the differences in results may be due to the reason that there is a contingency or 'fit' perspective which better represents the nature of the relationship between a venture's strategy and its growth (Eisenhardt and Schoonhoven, 1990). Chandler and Hanks (1994b) reported support for a fit hypothesis, discovering that ventures which pursue a quality differentiation strategy had higher levels of aggregate market share, sales, and cash flow growth when they also had in place resource supportive of a quality strategy. Additionally, McGee, Dowling and Megginson (1995) observed that ventures which enter into marketing cooperatives with emphasised marketing differentiation strategies showed higher levels of sales growth.

The impact of a venture's strategy on sales, employment, and market share growth may also be dependent on the offered product line's scope and the order of entry into the market by the venture. The study conducted by Sandberg and Hofer (1987) demonstrated that general differentiation strategies seem to be slightly more effective than focused strategies for ventures that are early entrants, however, focused strategies seem to be more effective for late entrants. Gilbert et al. (2006) discussed as industry characteristics seem to be partly responsible for determining how a new

venture's strategy influences its growth, it is startling that only few studies have used market share growth as the measure of growth the new ventures achieved.

Most studies use sales growth over a three- or five-year period, which demonstrates the extent to which the implementation of the venture's strategy is allowing it to achieve growth, however, does not reflect the benefit the strategy may be providing the venture in the wider competitive environment. Sales and employment growth are more relevant to the daily operations of the new venture, whereas, market share growth represents the extent to which the venture remains viable in its competitive environment and thus, may be a more accurate indicator of the effectiveness of a venture's strategy.

2.21.5 Industry context

New venture founding conditions are realised to have implications far beyond founding (Bamford, Dean and McDougall, 2000; Eisenhardt and Schoonhoven, 1990), therefore, making it crucial to understand the industry's characteristics in which the venture operates to better comprehend its growth patterns. In many studies, the industry stage, in specific emerging or growing markets, has been demonstrated to have a significant impact on new venture growth (Brush and Chaganti, 1998; Park, Chen and Gallagher, 2002; Robinson and Phillips McDougall, 2001). In growing or emerging markets, the environment consists of widely available resources, and thus, mistakes are not as costly (Castrogiovanni, 1991). Therefore, it is more likely that high growth will be achieved by ventures in growing markets. Though, even in growing markets, the attainment of growth that is possible may be dependent on the venture's implementation of the strategies (Park et al., 2002).

The industry's life cycle stage may also provide opportunities for a venture's products and services to be adapted to cater for new markets (Koberg, Uhlenbruck and Sarason, 1996). Ventures operating and competing in growth industries may be faced with greater opportunities than ventures in emerging or mature markets when it comes to providing new products or services which serve niches in the market. A sustained ability to introduce products to the market has been determined to be important for the sales growth of new ventures in growing industries (Siegel et al., 1993).

Other characteristics of the industry environment which are considered to have a significant impact on the sales and market share growth of new ventures include the

capital requirements (Robinson and Phillips McDougall, 2001), level of competition (Baum et al., 2001), dynamism, heterogeneity, and lack of price hostility (Zahra and Bogner, 1999).

2.21.6 Organisational structures and systems

In order to sustain the growth which occurs, it is necessary for entrepreneurs to adapt the internal structure of the firm to manage the growth being experienced. Kazanjian and Drazin (1990) study investigated the relationship with organisational structure and systems focusing on the effect of functional organisation and decision making on sales growth outcomes for new ventures. Functional specialisation is discussed to be important as it enables individuals holding functional positions to gain specialisation within those areas (Gilbert et al., 2006). When a venture is small, the operations may not be sufficient to sustain functional specialisation to the required extent. As the new ventures grows in size and faces new challenges, specific functional expertise is required to perform new roles within the firm (Kazanjian and Drazin, 1990).

Functional specialisation allows ventures to carry out higher levels of environmental scanning. Thus, individuals with functional positions can monitor the environment in their respective areas. High level of scanning allows the venture to recognise opportunities which in turn may lead to sales growth (Box et al., 1994). It may also lead to ventures becoming more innovative with their products and services, thus, to engage in higher level of formal internal planning, and to attain higher levels of growth (Olson and Bokor, 1995). Ultimately, the decision-making structure must allow the venture to remain adaptable if they experience continued sales growth. As ventures continue through stages of conception and development, commercialisation, growth, and stability, the decision making must become increasingly decentralised. However, at the same time, the decision-making structure must allow entrepreneurs to maintain a certain level of control which will allow growth to be attained (Gilbert et al., 2006).

In addition, Barringer et al. (2005) found that ventures which provided training, financial incentives, stock options, and practiced an overall development of their employees were characteristics of ventures experiencing rapid sales growth. Therefore, it is evident that ventures must appropriately compensate their employees for assisting the firm to successfully manage growth.

In summary, the review of the new venture growth literature conducted by Gilbert et al. (2006) shows that majority of the studies have been intrigued with understanding why some new venture grow more than others. The existing models commonly reflect that the entrepreneur must choose to grow their ventures and that growth most likely will occur when the entrepreneur attains the resources necessary to achieve growth, has a strategy which promotes growth, operates in an industry which supports growth, and develops appropriate structures and systems which accommodate growth (Baum et al., 2001; Box et al., 1994; Chrisman, Bauerschmidt and Hofer, 1998; Thakur, 1999). Furthermore, a venture's strategy impacts its growth especially when certain resources and industry characteristics are set in place. Constraints relating to resources or industry will influence the entrepreneurs' decisions regarding how they choose to grow and structure the venture.

2.22 How and where new ventures grow

Gilbert et al. (2006) have emphasised that there are two key decisions relating to new venture growth which have not been extensively investigated through empirical research and will assist in advancing knowledge on new venture growth. These strategic decisions are: 1) how to grow (internal or external growth) and 2) where the growth will occur (domestically or internationally).

In the next section, these two key strategic decisions are further discussed. The how decision is investigated through a comparison of internal (organic) and external (acquisition) growth, and the where decision is investigated through a market focus comparison of domestic and international.

2.22.1 Internal or external growth

Growth due to mechanisms internal to the venture refers to strategies such as innovative product development or marketing practices in order to identify and develop products which serve the targeted markets. The innovation created will either be highly novel, which means a new product/service is offered, or incremental, which means an existing product/service is improved or advanced (Amason, Shrader and Tompson, 2006). Both novel and incremental innovation are vital to the venture, though, each has different implications for the performance of growth. For new ventures, novel product entries have the strongest potential to improve the venture's market share (Banbury and Mitchell, 1995; Robinson, 1990). Once a firm establishes

itself, incremental introductions, and more specifically rapid introductions, become vital to achieve sustained growth (Banbury and Mitchell, 1995). Furthermore, research suggests that new products, frequency of product advancements, use of external technology sources, patents, and copyrights (Zahra and Bogner, 1999), and implementation of advanced technologies (Siegel et al., 1993) contribute positively to new venture growth.

Ventures which aim to pursue external growth focus on acquiring firms operating in the same or complementary markets. Acquisitions allow firms to improve their product or service offerings (Penrose, 1959), or be able to reach to new markets without having to develop their own required competencies. By acquiring an existing business, a firm receives benefits from the reputation of the business already established in the market (Banbury and Mitchell, 1995), and thus, also results in increasing its market share. Delmar, Davidsson and Gartner (2003) study examined the growth patterns of high growth ventures, in order to understand how ventures, grow. This study revealed that 10% of the ventures in the sample grew mainly through acquisition. Furthermore, the results showed that the acquisition activity was the main factor for only employment growth for the firms.

Gilbert et al. (2006) stated that growth realised from internal or external mechanisms differentially influences the growth outcomes achieved by firms. Penrose (1959) explained that growth which is achieved through internal mechanisms is more likely to be constant, however, it may also be slower than growth which is achieved through external mechanisms. For example, introducing a new product to the market may immediately increase the firm's sales, though, it may not immediately affect the market share or employment growth of the firm. Market share may be impacted when sales reach a certain level where the firm has gained strong marketplace popularity, and therefore, is exceeding the sales of its competitors. Employment growth may only increase when demand exceeds the ability of the workers to meet the demand. Thus, internal growth may immediately result in an increase in sales but only gradually increase employment or market share growth.

On the other hand, external growth mechanisms may simultaneously have an impact on growth outcomes. Unless a target firm lacks sales, purchasing an existing firm substantially increases yearly sales in the months pursuant to an acquisition. Furthermore, employment growth also increases as the acquisition immediately

increases the number of employees on the payroll. The market shares the combined firm holds should also increase. Therefore, the growth outcomes that are achieved are determined in part by the mechanisms the entrepreneur implements for growing the venture (Gilbert et al., 2006).

Internal growth and external growth require different sets of competencies, therefore, may need different types of characteristics in the entrepreneurs. For example, internal growth via innovation is a complex process, one which requires creativity and technical skills from both the entrepreneurs and the venture's employees (Abernathy and Clark, 1985). Additionally, prior experience on innovation activities provide the entrepreneurs relevant knowledge on the product development process. On the other hand, external growth requires a completely different set of competencies, specifically when the firm being acquired own assets which differ in comparison to those from the acquiring firm (Hopkins, 1987). When ventures acquire a firm, which has different assets and capabilities, they must spend time valuing the assets of the desired firm and completing due diligence. Prior experiences working for firms which have gone through the acquisition activity provide the entrepreneurs the opportunity to observe the relevant processes and procedures necessary to successfully integrate a firm into current operations.

2.22.2 Domestic or international market focus

Contrary to traditional theories of internationalisation which suggest that firms enter into international markets only after first being established in their original country, new venture scholars started in the late 1980s to learn that entrepreneurs were internationalising their ventures from the point of inception (e.g., McDougall, 1989). D'souza and McDougall (1989) have emphasised that internationalisation activities may be fundamental for the survival and growth of a venture.

Even though internationalisation is explained to be important for venture growth, it has not been found to have an impact on the growth outcomes a firm may achieve. For example, in the study conducted by Shrader (1996) examining 127 domestic new ventures and 87 international new ventures revealed that although the international ventures outperformed the domestic ventures in sales growth, the domestic ventures achieved higher levels of employment growth. A further examination showed that the international ventures were more than twice as efficient in generating sales per employee.

Whether growing either domestically or internationally, a venture is likely to practice one of two strategies for market expansion. With market penetration strategies, a venture aims to sell large volumes of products in their target market. To implement a market penetration strategy, a venture may require extensive advertising programs or partners which can help to promote the venture's products to the intended target market. On the other hand, a market development strategy, pushes a venture to sell its products into a new market. For a market development strategy to be effective, it may require the venture to either establish a new entity in order to service the new market or partner with another firm which is already selling products to the intended market. Either expansion strategy, whether resulting from domestic or international markets, can strongly influence both the sales and market share growth of the ventures (Gilbert et al., 2006).

However, through working with partners or leveraging on the productivity of current employees, a venture may be able to achieve growth without increasing the number of employees. Furthermore, in international markets, the growth achieved may depend on the mode of entry chosen for international operations (Brouthers and Nakos, 2004). A venture which decides to internationalise through exporting or licensing modes of entry may realise an increase in sales or market share growth but there may be no increase in employment growth. However, a venture which uses a foreign direct investment or joint venture mode of entry may realise changes in employment before seeing increases in sales or market share.

Both domestic and international expansion are impacted by the entrepreneur's capabilities and knowledge to operate the venture effectively through identifying the most appropriate target markets, localising and providing products and services within the desired market. Successful domestic expansion is achieved through extensive planning and management, which in turn impacts on both the sales and employment growth the venture realises. Prior experience in growing a venture domestically can make entrepreneurs knowledgeable of the tactics which can be initiated and implemented to expand the operations with minimal unforeseen challenges impacting on the current business (Greening, Barringer and Macy, 1996). International expansion is also a very complicated process which requires effective planning and management but also requires an extensive knowledge on international cultures and practices.

Experience with international operations can develop knowledge and contacts required for recognising opportunities to conduct business operation internationally (Bloodgood, Sapienza and Almeida, 1996; Coviello and Munro, 1995). Without these capabilities, a venture may become limited in its ability to expand operations into new geographic locations (Gilbert et al., 2006).

The next section provides insight into the theoretical framework for this study, which is built on the implementation intention theory and the concept of commitment.

2.23 Theoretical framework of this study

Carsrud and Brännback (2011) explain four phases in the entrepreneurial process: (1) a pre-decisional phase which is when the desire to become an entrepreneur develops, (2) a pre-actional phase which is when there is initiation of behaviour and the nascent entrepreneurs search for opportunities and experience what it takes to be an entrepreneur, (3) an actional phase which is when they create a new venture, and (4) a post-actional phase which is when they assess the results and outcomes.

Following fundamental research conducted by Shapero and Sokol (1982), Ajzen (1991) and Bruyat (1993) on the entrepreneurial process, this study adopts a sociopsychological approach, which is supported by many scholars. Shaver and Scott (1991) have proposed for a psychological approach in order to combine the individual, their representation of the environment, and the cognitive process which eventually leads to entrepreneurial behaviour (Fayolle et al., 2014). Furthermore, McCarthy, Schoorman and Cooper (1993) have emphasised that models and theories will remain to be incomplete until the psychological factors are explored and investigated.

Taking the above suggestions into consideration, this study has incorporated and built on, the implementation intention theory and the concept of commitment. These are further explained in the next section.

2.24 Implementation intention theory

van Gelderen et al. (2017) explain that the empirical study of implementation intentions in the field of entrepreneurship is relatively new, and as a result, scholars have the opportunity to advance understanding of this area. Implementation intention is described as a specific type of intention (Adam and Fayolle, 2016) which

is explained as a link between an intended goal-directed behaviour and an anticipated behaviour (Brandstätter et al., 2001; Gollwitzer, 1993; 1999).

The effect of implementation intention has already been tested positively in various other fields such as health (studies discussed by Parks–Stamm, Gollwitzer and Oettingen, 2007), and for daily activities (studies discussed by Ajzen et al., 2009). A meta-analysis of 94 studies indicated that implementation intention affects goal directed behaviour (Gollwitzer and Sheeran, 2006). Many studies have tested it in different contexts; such as: healthy eating (Verplanken and Faes, 1999), controlling anxiety (Gallo and Gollwitzer, 2007), performing physical activity (Prestwich, Lawton and Conner, 2003), doing breast self-examination (Orbeil et al., 1997), or interrupting mundane behaviours (Aarts et al., 1999).

Implementation intentions (Gollwitzer, 1993; 1999; Gollwitzer and Sheeran, 2006), are explained as if-then plans which provide details on the when, where, and how of goal striving. In the context of creating a new venture, the prospective entrepreneur must first decide *what* action they need to preform and how, prior to deciding when and where to engage in that particular action (van Gelderen et al., 2017).

The two processes which correspond to the determination of where, when and how to act will assist in the translation of goal intentions into actions, these are: the if-then processes (Gollwitzer, 1999). The if-component increases the recognition of an anticipated situational cue, and the then-component triggers the response to the specific cue (Parks–Stamm et al., 2007). Thus, the cue accessibility increases, and the cue-response link becomes stronger. As a result, when the identified situational cue occurs, it is easily identified and will catch the individual's attention even if their attention is focused on something other than their current goal (Adam and Fayolle, 2016). When implementation intention formation occurs, a defined situational context translates into a stimulus which then triggers the intended behaviour.

Therefore, by forming an implementation intention, an individual is able to more easily and quickly identify a specified cue and as a result will automatically, immediately and efficiently respond to it (Webb and Sheeran, 2007). Due to this automaticity aspect, implementation intention is often compared to habits (Brandstätter et al., 2001; Gollwitzer and Schaal, 1998; Verplanken and Faes, 1999). Both behaviours pass the control of action from the self to the environment and

involve an automatic link between cue and behaviour. The difference between them is that implementation intentions are formed through deliberate planning, whereas habits are formed though the repetition of behaviour (Verplanken and Faes, 1999). It can be concluded that by forming "a direct and automatic link between cue detection and behaviour, implementation intention increases the probability for an intended individual to act" (Adam and Fayolle, 2016, p. 82).

Gollwitzer (1999) explains implementation intentions assist in initiating action, as well as protecting actions from other distractions. Fayolle and Liñán (2014) discuss individuals who develop implementation intention are more likely to act on their intentions. Psychology scholars have through their empirical studies been establishing the effectiveness of the implementation intention theory (Ajzen et al., 2009). Implementation intentions can be highly significant for the field of entrepreneurship, as implementation intentions assist in both increasing the probability and the speed of action initiation. Therefore, through increasing the speed action initiation, it could assist in reducing the entrepreneurial intention-behaviour gap (Adam and Fayolle, 2015). Shane, Locke and Collins (2003) explain entrepreneurship depends on decisions that individuals make regarding how to undertake the process, thus, confirming the significant role of implementation intentions in the entrepreneurial process (Adam and Fayolle, 2015).

Implementation intentions complement goal intentions by planning for specific behaviour. The fundamental difference is that goal intentions specify what individuals want to achieve, whereas implementation intentions explain what behaviour is required to be performed in order to achieve the goal, and in what situation the behaviour will be performed in a conditional form at ("If situation *Y* occurs, then I will initiate behaviour *X* in order to obtain outcome *Z*!") (Martijn et al., 2008, p. 1137). Therefore, implementation intention formation not only requires being specific about the goal-oriented behaviour and the situation in which it will be performed, but it also requires making performance of specific behaviour conditional upon experiencing that situation.

The construct of implementation intentions may assist in addressing the important theoretical question of why some individuals who possess strong entrepreneurial goal intentions fail to create a new venture. Recent meta-analyses in the field of health have demonstrated that implementation intentions have a beneficial effect in both

laboratory experiments as well as field settings (Bélanger-Gravel, Godin and Amireault, 2013; Toli et al., 2016). However, the studies conducted in health and other fields tend to analyse settings which lack similarity to starting a new venture, where pursuing a goal can involve high level of uncertainty, as various activities being performed in different sequences (van Gelderen et al., 2017).

More importantly, when setting a goal such as starting a new venture, individuals not only need to specify where and when they will perform a specific action, but also need to specify the what, which is the start-up activity on which they would want to work on. Therefore, this requires individuals to correctly identify the activities which will achieve the desired goal (van Gelderen et al., 2017).

The questions of why, when, and how some individuals but not others are able to discover and exploit opportunities in order to create goods and services have long been a crucial interest of entrepreneurship scholars (Shane and Venkataraman, 2000). van Gelderen et al. (2017) explain that implementation intentions have thus far not been investigated in relation to entrepreneurial intentions and actions, despite scholars requesting for such studies (Adam and Fayolle, 2015; Fayolle, 2013; Fayolle and Liñán, 2014; Krueger, 2009). However, the effects of implementation intentions have been investigated extensively in social psychology. A meta-analysis conducted by Gollwitzer and Sheeran (2006) revealed that implementation intentions have a medium-to-large magnitude positive effect on goal attainment which extends beyond the effects of forming goal intentions.

Developing implementation intentions activates the mental representations of specified cues, which is the *if* component (van Gelderen et al., 2017). Therefore, the situation which is specified in the if clause becomes cognitively activated which is then easily accessible through memory. As a result, once the cue occurs, the response which is the *then* component, is thought to occur automatically (Gollwitzer and Sheeran, 2006), which there is neuroscientific evidence to support this explanation (Wieber, Thürmer and Gollwitzer, 2015). Implementation intentions, therefore, is a combination of conscious planning and automatic response activation (van Gelderen et al., 2017). Thürmer, Wieber and Gollwitzer (2015) explain the automaticity of the then-response is strategic, as it is based on the individual's act of will, and implementation intentions are therefore, the point at which controlled and automatic processes meet (Wieber and Gollwitzer, 2017). Even if an if-then structure is not

explicit, when implementation intentions are measured through the specification of when, where, and how to act in the service of the individual's intentions (Carraro and Gaudreau, 2013), there will be an apparent contingent nature as the 'when' and 'where' components are stated together with what action will be performed (van Gelderen et al., 2017).

The result of selecting a good opportunity, and a right action to perform, and making initiation of the action contingent upon experiencing the desired opportunity is that "(a) the anticipated opportunity becomes highly accessible, and (b) a strong mental link is forged between the situation and goal-directed response" (Martijn et al., 2008, p. 1138). In turn these processes increase the likelihood of individuals acting as planned when they encounter the specific situation (Aarts et al., 1999; Webb and Sheeran, 2007).

Implementation intention not only facilitate action initiation, but also accelerate it (Orbell and Sheeran, 2000; Webb and Sheeran, 2004). The 'where and when' of implementation intentions seems effective in assisting individuals to initiate action. Therefore, the 'how' of implementation intentions may assist in initiating but also maintaining behaviour, specifically at times when goals can be attained through various courses of action, or by adapting a complex pattern of acts (Verplanken and Faes, 1999). Martijn et al. (2008) findings revealed the 'where and when' of implementation intention assists individuals who face challenges in remaining consistent in their behaviours and sticking to their goals: therefore, as a result they will continue to try, each time as intensely as the initial time. Adam and Fayolle (2015) conclude implementation intentions which relate to the 'when and where' to perform action, initiate as well as maintain goal-oriented behaviour, whereas, implantation intentions which relate to the 'how' to act, particularly assist in sticking to one's goal, especially when the goal is complex, and when there may be multiple ways of achieving it.

A meta-analysis of 94 studies conducted by Gollwitzer and Sheeran (2006) demonstrated evidence that implementation-intentions affect outcomes. Furthermore, implementation intentions had a positive effect on goal achievement. Webb and Sheeran (2008) explain that through understanding the mechanism, it may assist in enhancing the impact of implementation intention formation on outcomes, as resources can be implemented towards improving the identified processes.

Effectiveness in taking action is dependent on self-regulatory strategies involved in the volitional phases (rather than motivational phases) associated with goal implementation (Gollwitzer, 2012). An example of such strategy is implementation intentions, which supplements goal intention and specifies the actions necessary to reach the goal (Gollwitzer, 1999; Hagger and Luszczynska, 2014; Sniehotta, 2009).

As previously mentioned the meta-analysis conducted by Gollwitzer and Sheeran (2006) demonstrated that implementation intentions have a medium-to-large magnitude positive effect on goal attainment which extends beyond the effects of possessing goal intentions. As prior research is mainly based on laboratory experiments and field studies focusing on straightforward goals and actions, entrepreneurship researchers cannot assume the effects can be replicated in the context of starting and growing new ventures; which as previously discussed is complex and uncertain in the medium-long term involving a range of activities (Carter et al., 1996; Lichtenstein et al., 2007).

2.24.1 Induced and non-induced implementation intention

It is important to discuss that the majority of studies on implementation intentions have involved research designs where the implementation intentions are induced upon participants, either by the researcher or by the organisation that conducts the research (Prestwich et al., 2015). These studies involve providing a training session for the participants in which individuals are trained and then instructed to develop implementation intentions, and then the amount of action performed by these individuals is compared to a control group.

van Gelderen et al. (2017) propose there is the question of which is more effective in terms of induced implementation intentions versus spontaneous implementation intentions. A further question is whether and when an intervention based on implementation intentions creates more value over spontaneous implementation intentions. Implementation intentions which are self-generated and spontaneous have the advantage of their cues and responses being most relevant to each individual's needs (Armitage, 2009; Wieber and Gollwitzer, 2017). On the other hand, interventions can encourage individual to perform a systematic search for critical situations as well as effective action responses. However, those individuals who form spontaneous implementation plans may engage in less detailed processing and

therefore, follow through with the first if-then plan that comes to mind (Wieber and Gollwitzer, 2017).

Spontaneous and induced planning could potentially interchange, as those who are forming spontaneous plans may not benefit from interventions which are designed to improve planning (Carraro and Gaudreau, 2013). Less research has been conducted on the antecedents of implementation intentions which develop naturally. The few studies which have been conducted on non-induced, self-generated, spontaneous implementation intentions consistently demonstrate that their occurrence is best predicted by goal intention strength (Brickell, Chatzisarantis and Pretty, 2006; Churchill and Jessop, 2010; Rise, Thompson and Verplanken, 2003).

The study conducted by Carraro and Gaudreau (2013) showed once individuals intend to pursue a goal, they may spontaneously develop action plans to assist with the logistics of goal striving and also to protect their intentions against distractions and challenges. Similarly, Wieber and Gollwitzer (2017) discuss the connection between goals and means, and that the activation of a mental representation of a goal should in turn activate the mental representation of appropriate means to pursue that goal.

This study has measured implementation intentions which are non-induced, self-generated and spontaneous, as participants have not been trained or instructed to develop any form of implementation intentions. Thus, contributing to the few studies which thus far have focused on non-induced implementation intentions. Furthermore, the implementation intentions in this study are directed particularly towards venture growth tasks.

2.24.2 Antecedents of implementation intention

Furthermore, as implementation intentions are mainly studied in settings where there are induced, there is little information on their antecedents. The few studies conducted which have focused on non-induced, self-generated, spontaneous implementation intentions demonstrate that their formation is best predicted by goal intention strength (Brickell et al., 2006; Churchill and Jessop, 2010).

van Gelderen et al. (2017) explain as implementation intentions are always in place to serve a goal intention, additional antecedents can only act as moderators, therefore, making it likely implementation intentions are developed, rather than being direct causes. In other words, antecedents of implementation intentions are explained as

variables which make it more likely that implementation intentions are formed (without induction or intervention), furthermore, these variables may impact on the effectiveness of implementation intentions. These antecedents are discussed in the next section.

2.24.3 Accessibility of plan components

An explanation of the effects of implementation intention relates to the accessibility of plan components. Gollwitzer (1999; 1993) and Gollwitzer and Sheeran (2006) explain implementation intention formation initiates two processes which do not characterise individuals who are committed and have confidence in attaining a goal. These two processes relate to the accessibility of the anticipated opportunity and to the strength of the link between the opportunity and the chosen response, respectively (Webb and Sheeran, 2008).

Accessibility of the specified cue

In order to form an implementation intention, the individual must first identify a relevant future opportunity for goal pursuing and place it in the if-section of their plan (If opportunity Y occurs...). The effect of both selecting and specifying an opportunity to act is to activate the mental representation of the anticipated situational cue, which in turn becomes more accessible (Webb and Sheeran, 2008). This increase in accessibility, results in the accurate detection of the anticipated opportunity.

In a study conducted by Webb and Sheeran (2004, Experiment 3) participants were asked to distinguish between single and multiple digit numbers as fast as they could. One-half of the participants had been asked to exchange this goal with an implementation intention ('If the number 3 appears on its own, I will respond especially fast!'). The other half of the participants familiarised themselves with the number 3 for a duration of 15 seconds in order to improve the speed of their responses. Consistent with the explanation that if-then planning improves immediate detection of the specified opportunity, participants who had formed implementation intentions responded at a faster speed to the number 3 in comparison to the participants who had not formed implementation intentions. In addition, participants who had formed implementation intentions did not respond incorrectly to ambiguous cues such as: 33, 413 and 333, demonstrating that judgment of the anticipated opportunity in not only fast, but also more accurate (Webb and Sheeran, 2008).

The study conducted by Aarts et al. (1999) was the first to provide evidence that increased cue accessibility mediates the relationship between implementation intention formation and goal achievement (Webb and Sheeran, 2008). Once participants arrived at the laboratory, they were told that they need to collect a coupon at the end of the experiment. One-half of the participants were asked to form an implementation intention which specified when, where and how to collect the coupon (relevant planning condition). The other half of the participants were asked to form an implementation intention which specified when, where and how to spend the coupon (irrelevant planning condition).

Before leaving the laboratory, participants were asked to work on a short computer task which was seemingly concerned with language. The computer showed letter strings and participants had to decide as fast as possible whether each string was a word or whether it was a non-word. Within these letter strings there were words which represented the location of the coupon such as left, swing door, red, corridor and firehose. The reason behind this was that the situational cues which were specified in the if-part of the implementation intention would be highly accessible and therefore, participants in the relevant planning condition would respond quicker to these cues than participants who were in the irrelevant planning condition. The results of the experiment confirmed this prediction.

Additionally, a larger proportion of participants in the relevant planning condition recalled collecting the coupon at the end of the experiment (80%) in comparison to the participants in the irrelevant planning condition (50%). Most importantly, response latencies to the words representing the specified opportunity mediated the effect of implementation intentions on the probability of collecting the coupon. The findings of the study conducted by Aarts et al. (1999) propose heightened cue accessibility can explain the positive effects of implementation intention formation on goal attainment.

Strength of association between the cue and response

The second part of the accessibility of plan components relates to whether the critical situation outlined in the if-part of the plan renders the intended response which is outlined in the then-part of the plane more accessible. Meaning "does the specified cue prime the specified goal-directed response?" (Webb and Sheeran, 2008, p. 377). Implementation intention formation not only requires an individual to

identify an appropriate future opportunity to act on, but it also requires the individual to identify a response to that specific opportunity which will be crucial in achieving the superordinate goal.

When making a future action contingent upon experiencing a particular situational cue, an individual develops a mental link between the anticipated opportunity and the intended response. Gollwitzer and Schaal (1998) explain by building this mental link, control of the intended response can be delegated to the future anticipated opportunity, which in turn allows the response to be initiated at a faster rate (Gollwitzer and Brandstätter, 1997; Webb and Sheeran, 2004) and with more efficiency (Lengfelder and Gollwitzer, 2001; Webb and Sheeran, 2003) in comparison to action control through goal intentions.

The study conducted by Webb and Sheeran (2007) examined whether the strength of the relationship between the specified cue and response mediated the impact of implementation intentions on goal achievement. The findings of the study demonstrated that the effect of implementation intentions on goal achievement was simultaneously mediated by two factors: (a) the accessibility of the specified cue and (b) the strength of the relationship between the specified cue and the intended response.

2.24.4 Implementation intentions and taking entrepreneurial action

Action planning is defined as "the process of linking goal-directed behaviours to certain environmental cues by specifying when, where, and how to act" (Sniehotta et al., 2005, p. 567). Similarly, Gollwitzer (1996, p. 290) describes "individuals reflect and decide on the when, where, how and how long to act, thus creating plans for actions." Thus, action planning results in implementation intentions, and many scholars use the terms implementation intention and action plan interchangeably (Adriaanse, Vinkers, De Ridder, Hox and De Wit, 2011; Bélanger-Gravel et al., 2013).

Previous research demonstrates that implementation intentions can assist the transition from goal intention to action (Carraro and Gaudreau, 2013; Gollwitzer and Sheeran, 2006). Implementation intentions have been effectively applied to what is considered the most prominent challenges impacting goal attainment (Gollwitzer, 2014). These refer to getting started, protecting the ongoing goal pursuit by remaining on track when facing competing goals, temptations and distractions, stopping unsuccessful efforts to achieve a desired goal, and preserving energy and

time for the pursuit of subsequent goals (Gollwitzer, 2014; Gollwitzer and Sheeran, 2006).

Gollwitzer and Sheeran (2006) conducted a meta-analysis on whether implementation intentions assist in overcoming three common challenges to translating intentions into actions relevant to the context of entrepreneurship. The first challenge is losing sight of the goal; the second is not seizing opportunities to act, and the third is the failure to disengage from a specific action when more effective options are available. In regards to overcoming these three challenges, Gollwitzer and Sheeran (2006) discovered medium-to-large effect sizes for implementation intentions (d = 0.54, 0.61, and 0.65, respectively). The list of challenges which implementation intentions assist in overcoming suggest that implementation intention can cover various content (van Gelderen et al., 2017).

As previously explained implementation intentions are effective as they enhance an individual's alertness to situational cues and automatise the behavioural response. Implementation intentions syndicate conscious planning and activation of automatic response. The automaticity of the then-response is strategic, as it is based on an act of will (Thürmer et al., 2015). Instead, implementation intentions is explained to be between controlled and automatic processes (Wieber and Gollwitzer, 2017). Even if an if-then structure is not explicit, when implementation intentions (action planning) are measured based on the specification when, where, and how to perform in the service of an intention (Carraro and Gaudreau, 2013), a contingent nature will remain apparent as the 'when' and 'where' are specified together with what action will be performed.

Entrepreneurship scholars suggest that implementation intentions, in however form, may also be effective for other reasons, as they promote commitment to the action (Ajzen et al., 2009; Fayolle and Liñán, 2014). The relationship between commitment and implementation intentions is discussed further in this chapter.

Previous studies focusing on more complex goals which can be achieved through various ways, have found positive effects associated with implementation intentions. An example of this is the study conducted by van Hooft, Born, Taris, Van der Flier and Blonk (2005), which demonstrated that implementation intentions were a significant predictor of subsequent behaviours relating to job search.

Consistent with evidence from previous research on the effectiveness of implementation intentions on subsequent behaviour, this study expects that implementation intention will have a positive effect on entrepreneurial effort towards venture growth tasks.

> **Hypothesis 4:** Implementation intention has a positive direct effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.

van Gelderen et al. (2017) found in their study that implementation intentions mediate the effects of goal intentions on performing entrepreneurial action in specific to start-up activities. Additionally, their study demonstrated that the mediation effect is even stronger for those individuals who possess a high level of goal intention to engage in venture gestation activity. Following the investigation conducted by van Gelderen et al. (2017), this study expects that implementation intention will mediate the effects of goal intention and venture growth intention on entrepreneurial effort towards venture growth tasks.

> **Hypothesis 5:** Among early-stage entrepreneurs, implementation intention mediates the effect of the goal intention and strength to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.

> **Hypothesis 6:** Among early-stage entrepreneurs, implementation intention mediates the effect of the venture growth intention to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.

The study conducted by van Gelderen et al. (2017) supports the argument that variables relating to action regulation play a fundamental role in pursuing the goal of entrepreneurship. These results also align with the psychological literature on action regulation through providing empirical evidence on the applicability of implementation intentions to actions which involve a high level of uncertainty and a wide variety of activities which are performed in different sequences. van Gelderen et

al. (2017, p. 924) view their study as "an early attempt to investigate implementation intentions in the context of entrepreneurship".

2.24.5 Implementation intention and entrepreneurial effort intensity in facing challenges

The study conducted by Martijn et al. (2008) has investigated whether implementation intentions not only assist in initiating goal striving but also whether implementation intentions promote ongoing striving, in specific when the initial effort to reach the goal is blocked. Their findings revealed that if-then planning improves subsequent goal striving, even though the participants' purpose of the implementation intention was to achieve action initiation rather than repeated attempts to achieve the specified goal. After encountering blockage of an initial attempt towards their goal, participants who had formed implementation intentions pursued a recommended alternative route, even though the alternative route required increased effort in comparison to the initial attempt.

Martijn et al. (2008) concluded from their study that developing implementation intentions leads to more constant goal striving. Furthermore, when faced with an unexpected issue, individuals without developed implementation intentions are less likely to continue to strive, and even when they do so, their level of effort tends to decrease. On the other hand, individuals who develop implementation intentions are likely to continue striving to reach their goal even if they experience an unexpected barrier.

Developing an implementation intention which specifies how to strive for a specific goal conserves self-regulatory capacity required for future goal striving, which is similar to how implementation intention formation conserves cognitive capacity. Brandstätter et al. (2001) Experiment 4 revealed that participants who had developed implementation intentions about how to respond on a primary task, not only performed better on that task in comparison to control participants, but they also demonstrated a training effect on the subsequent task. This reveals that implementation intention formation provided cognitive capacity, which in turn could be used to improve the participants' response to the subsequent task.

Due to the strong association between the cue and response, as soon as the cue is experienced, the action is then initiated automatically and efficiently (Gollwitzer and Sheeran, 2006). Therefore, implementation intention formation turns action control

from a conscious state to stimulus control of behaviour. Stimulus control of behaviour does not require self-regulatory resources, which makes these resources available for subsequent goal striving within individuals who have formed implementation intentions.

2.25 Concept of commitment

Commitment is defined as "how long an individual is willing to strive for a specific goal" (Austin and Vancouver, 1996, p. 6). Commitment is one of the most crucial factors to investigate in individuals' persistence towards their goals (e.g., Brunstein, 1993). Furthermore, Meyer and Herscovitch (2001) define commitment as a 'force' which binds an individual to their goal. The concept of commitment has been linked to both goal intention (intellectual, relational and emotional resources) as well as actions (time and energy) (Adam and Fayolle, 2015).

Commitment is a well-established concept in social psychology (Becker, 1960), and is explained as a decision which can directly influence an individual's future behaviour (Festinger, 1964). There is a relation between commitment, decision and action, as individuals do not commit to a challenge through their intentions or ideas, but instead, they display commitment through their actions. Furthermore, commitment displays a succession of various actions and decisions performed toward achieving a desired outcome (Fayolle and Liñán, 2014).

Commitment can either be partial or total. Total commitment refers to when a point has been reached in the process that makes returning impossible. Once the individual is fully committed to the process, they will go all the way through with the project, as the costs of disengagement appear to be too high (Fayolle, Basso and Tornikoski, 2011).

Kiesler (1971, p. 81) built the foundations of the social psychology of commitment, by explaining it as what "binds the individual to his or her behavioural acts." Fayolle et al. (2011, p. 161) define commitment as "the moment when the individual starts devoting most of his or her time, energy and financial, intellectual, relational and emotional resources to his or her project." Thus, once the individual is committed to the process, the possibility of going back is no longer considered as the investments made would make backing down too difficult and would most likely be perceived as a personal failure.

Most psychologists explain commitment as the force which stabilises the individual's behaviour (Brieckman, 1987; Kiesler, 1971), which gives individuals the strength to pursue their desired course of action, despite the challenges and the attractiveness of alternative options (Dube, Jodoin and Kairouz, 1997).

The literature on commitment demonstrates extensive studies which have led to the elaboration of commitment theories in the fields of social psychology (Joule and Beauvois, 1989; Kiesler, 1971; Kiesler and Sakumura, 1966) and cognitive psychology (Festinger, 1957; Staw, 1981).

For individuals to feel committed, they must feel they are the initiators of the specific behaviour. Consequently, individuals develop commitment in various degrees. Individuals are committed through their actions, and only the decisions which are made under a certain level of freedom lead to perseverance (Fayolle et al., 2011). Beauvois and Joule (1981) explain that in any given situation, the more an individual performs a behaviour, the more committed they become.

Furthermore, the likelihood of an activity which leads to an individual's commitment is directly related to the individual's feeling of freedom. Individuals need to feel a certain degree of freedom (either real or perceived) when deciding to ensure actions lead to commitment. Thus, the concept of commitment is related to a process which forms over times and "leads individuals to preserve the consistency of their actions or the coherence of their decisions" (Fayolle et al., 2011, p. 163).

The notion of escalating commitment is explained as completing the notion of commitment and frequently overlaps with it. The escalation of commitment relates to the propensity of an individual to persevere. At times in an incoherent way, with either a decision or a course of action, despite the presence of negative feedback and uncertainty ('halo effect') which impacts on the likelihood of future success (Staw, 1981).

Researchers consider commitment as a multi-dimensional concept. Furthermore, in the organisational commitment literature, two different approaches are considered: attitudinal and behavioural (Adam and Fayolle, 2015). In the attitudinal approach, commitment relates to the level of identification with an organisation. In the behavioural approach, commitment relies on extraneous factors and is related to Becker (1960) side-bet theory (McGee and Ford, 1987).

Depending on the nature of commitment, various scales have been developed to measure its level: Mowday, Porter and Steers (1982) Organisational Commitment Scale for the attitudinal approach, and Ritzer and Trice (1969) scale which has been modified by Hrebiniak and Alutto (1972) for the behavioural approach (Hackett, Bycio and Hausdorf, 1994).

Gollwitzer and Brandstätter (1997) suggest that an implementation intention will not be formed without a strong commitment to the goal. Therefore, the notion of commitment could be correlated to the notion of goal intention. Adam and Fayolle (2015) explain if researchers consider that different types of intention can have an impact on the entrepreneurial process, the concept of commitment should then be further investigated in the field of entrepreneurship.

Consistent with the above discussions, this study expects that venture goal commitment will mediate the effects of goal intention and venture growth intention on entrepreneurial effort towards venture growth tasks.

> **Hypothesis 7:** Among early-stage entrepreneurs, venture goal commitment mediates the effect of the goal intention and strength to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.

> **Hypothesis 8:** Among early-stage entrepreneurs, venture goal commitment mediates the effect of the venture growth intention to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.

Individuals who possess intent on a goal and have started taking action towards the goal will not stop until they have completed performing the behaviour, in order not to risk losing what they have invested thus far (Adam and Fayolle, 2015). This dual link between commitment and goal intention, and commitment and action can be found in Fayolle et al. (2014) application of the theory of commitment to entrepreneurship.

2.25.1 Commitment versus motivation

Carsrud and Brännback (2011) argue entrepreneurial motivation is the link between entrepreneurial intention and behaviour. Ryan and Deci (2000) explain motivation consists of the energy, direction, and persistence of activation.

Furthermore, Renko, Kroeck and Bullough (2012) state motivation could assist in understanding why some nascent entrepreneurs create new ventures, while others decide to quit the process. Therefore, if motivation assists with 'persistence of activation', it is close to the concept of commitment, which binds an individual to their goal, as explained by Meyer and Herscovitch (2001).

Entrepreneurial motivations are categorised as either pull or push (Gilad and Levine, 1986). The pull factors are described as the ones which attract individuals to become entrepreneurs, and on the other hand, the push factors refer to negative external forces. When Shane et al. (2003) describe an individual's need for achievement, independence, vision, and passion as general motivations for entrepreneurship, they are referring to pull factors.

Entrepreneurial motivations can be intrinsic and/or extrinsic. Entrepreneurial motivations are described as intrinsic when nascent entrepreneurs discover personal interests in entrepreneurship, such as lifestyle entrepreneurs. Entrepreneurial motivations are described as extrinsic when nascent entrepreneurs discover external rewards in entrepreneurship, whether it is social or economic (Carsrud and Brännback, 2011).

The motivational process is primarily based on two theories: the equity theory and the expectancy theory (Scholl, 1981). The equity theory refers to the balance between an individual's contributions and outcomes in comparison to what it could be within other organisations. The expectancy theory describes the motivation force as the outcome of synergy between expectancy, instrumentality, and valence. Expectancy is explained as the belief that one can reach his/her goal through doing what it takes, instrumentality is the belief that actions will, in turn, be rewarded, and valence is the value which the reward represents to the individual. Individuals select behaviours which lead to the most desired outcome (Segal, Borgia and Schoenfeld, 2005). In the context of entrepreneurship, Renko et al. (2012) explain that expectancy displays the strongest relationship with intended actions.

However, it is crucial to understand that sometimes individuals persist in their behaviours even at times when the expectancy/equity conditions are not fulfilled. In this instance, commitment acts as a stabilising force which maintains behavioural direction when expectancy/equity conditions are not satisfied and therefore, do not

operate (Scholl, 1981). Commitment binds individuals to a behaviour even when conflicting motives are present (Meyer and Herscovitch, 2001).

Adam and Fayolle (2015, p. 44) explain motivation can be considered as "a triggering factor", while commitment may take over when the conditions for the individual's motivations reduce or disappear entirely. The entrepreneurial process is a journey over time, and commitment is explained to be more stable over time, therefore, making it more likely to assist individuals in sticking to their intentions (Adam and Fayolle, 2015).

Building on the above discussions on the relationship between commitment, intentions and the perseverance of entrepreneurial behaviour, this study expects that goal intention strength will have a positive moderating effect on the impact of venture goal commitment on entrepreneurial effort towards venture growth tasks.

> **Hypothesis 9:** Among early-stage entrepreneurs, goal intention and strength moderates the positive relationship between venture goal commitment and subsequent entrepreneurial growth effort intensity, such that the relationship is stronger when goal intention strength is high.

2.25.2 Concept of commitment in the field of Entrepreneurship

Commitment theories have not been used extensively in entrepreneurship research (Fayolle et al., 2011). Bruyat and Julien (2001) explain commitment as a set of actions or decisions which take place over time. Actions and decisions are combined in the process, and it is challenging to identify a traditional sequence of events (collection of data, analysis, decision, and action).

Mainly in the Anglo-Saxon literature, commitment is not perceived as a fundamental element (phase or act) of the process. Instead, as a psychological factor capable of distracting the entrepreneur from the right decision paths, seeing as that "the right decision paths should be dominated by the – often economic – rationality of the actor" (Fayolle et al., 2011, p. 167).

Possible cognitive biases to be considered are the reduction of cognitive dissonances and the increase in commitment. Predominantly this appears in the study conducted by McCarthy et al. (1993), who investigated the extent to which financial investment decisions are impacted by rational processes or variables of commitment

escalation. The results indicated that entrepreneurs who created their own ventures are more prone to commitment escalation in comparison to entrepreneurs who took over an existing venture. Furthermore, entrepreneurs with a high level of self-confidence showed the most significant commitment escalation.

2.25.3 Entrepreneurial commitment

Entrepreneurial commitment is defined as "the moment when the individual starts devoting most of his or her time, energy, and financial, intellectual, relational and emotional resources to his or her project," (Fayolle et al., 2011, p. 161).

Entrepreneurial commitment more frequently leads to performing entrepreneurial activities (Erikson, 2002; Vohora, Wright and Lockett, 2004). Entrepreneurial commitment is discussed to be fundamental for a venture to be created from a vision (Parente and Feola, 2013). Entrepreneurial commitment begins with an individual displaying significant investment in time, energy, and resources (Fayolle et al., 2011; Parente and Feola, 2013).

Entrepreneurial commitment is formed by seven distinct constructs, which influence the three components of commitment: (1) affective commitment which is influenced by the entrepreneur's passion, values, and personality; (2) normative commitment which is influenced by the entrepreneur's internalised norms and responsibility; and (3) continuous commitment which is influenced by the entrepreneur's investments and lack of alternative options (Tasnim and Singh, 2016).

Brodack and Sinell (2017) discuss that a study which included over 400 start-ups demonstrated a positive effect of affective commitment and normative commitment on the formation of entrepreneurial commitment, therefore, indicating than an entrepreneur's strong emotional attachment to their venture and desire for it to grow leads to a higher level of entrepreneurial commitment. Similarly, the entrepreneur's perceived obligation as a result of the internalisation of norms, the receiving of benefits that encourages a need to give back or to stimulate the acceptance of responsibilities, positively affects the formation of entrepreneurial commitment (Tasnim and Singh, 2016; Tasnim et al., 2014).

Fayolle et al. (2011) discuss the notion even if it is agreed that new venture creation is an intentional and planned behaviour, it is not known exactly at which point in the process intention develops consciously. Thus, intention may lead to the trigger of the process, as demonstrated by Krueger and Carsrud (1993). However, it may also

develop after the trigger of the process, which in this case is new venture growth. Intention, therefore, represents the moment when the individual acknowledges where they are going, and their behaviour becomes reflexive.

Commitment as an implication process may take various forms and therefore, is not appropriate for a single modeling approach. Implication process means that individuals during the course of their action dedicate an increasing amount of their time and financial, intellectual, and emotional investments to their ventures. The road leading to commitment, therefore, seems contrasted. As for some individuals, commitment is a progressive process and continues over a long time, making it impossible to identify a decisive moment (Fayolle et al., 2011).

Fayolle et al. (2011) further discuss that the process which leads an individual to commit to creating a new venture may be viewed as an incremental or a radical change process. The authors further explain that there are two conditions which can be considered as necessary for commitment to take place. Firstly, the act of new venture creation must be the first preference above all other alternatives, and secondly, the resistance to change must be addressed and overcome. In both instances, these are individual perceptions, and thus, there may be substantial cognitive biases in assessing the risks. The desirability of entrepreneurial action consists of psychological and social aspects in addition to financial ones.

The emergence of a preference such as to grow a new venture is a complicated process, becoming even more complex by several factors (Fayolle et al., 2011); (1) the potential diversity of the measures to be considered, (2) the criteria are not independent of one another, (3) difficulty in measuring them (as are perceptions and not 'objective' facts), (4) the evolution of the perceptions over time, (5) the non-linearity of the functions which link some of the criteria to the preference (i.e. sigmoidal curves, parabolic curves), and (6) it is not possible to formalise these links through a classical preference function (additive model). Only one factor may result in opting-out. In summary, the development of preference is a system and thus, resists oversimplified approaches.

Fayolle et al. (2011) recommend five conditions where resistance to change can be analysed. Firstly, there is resistance to change as a result of habits as well as inertia in reasoning and behaviour. Secondly, resistance to change may also be because of fear of the unknown, which may be driven by a lack of knowledge. Thirdly, resistance to

change may also be because of the perceived irreversibility of the new circumstance. Therefore, failure may be perceived as catastrophic. Fourthly, resistance to change may be as a result of the perceived opportunity costs and/or substantial irreversible costs such as devoting less time to family. Lastly, resistance to change may be as a result of lack of resources or advice. In conclusion, preference over all other alternatives and overcoming resistance to change are the two necessary conditions for the development of full entrepreneurial commitment.

2.25.4 Commitment in the entrepreneurial process

Throughout the entrepreneurial process, commitment is regarded as highly important to trigger start-up and to implement effective business activities (Moore, 1986) while developing the capacity to ensure venture growth (Erikson, 2002; Klofsten, 1994). With the presence of commitment, the entrepreneur often exerts efforts of persistence, which leads to significant entrepreneurial activities (Sinclair and Bruce, 2009; Tang, 2008; Welsch, Liao, Pistrui, Oksöy and Huang, 2003) and a positive entrepreneurial process, even when needing to adapt to changes during the process (Simon, Elango, Houghton and Savelli, 2002). Tasnim et al. (2014) state that despite how important and significant commitment is in the entrepreneurial process, there is lack of sufficient effort in applying commitment theories into entrepreneurship research (Fayolle, 2007; Tasnim et al., 2013).

Although there has been research associating commitment with entrepreneurship, the majority of these studies seem to focus on the early stages in the entrepreneurial process, where individuals decide to become an entrepreneur (Carter et al., 1996; Sinclair and Bruce, 2009). These studies have focused on associating commitment to the intention to start a venture, rather than the level of effort entrepreneurs exert. Furthermore, "little is known about the entrepreneur's commitment while they are in the process of setting up a business" De Clercq, Menzies, Diochon and Gasse (2009, p. 124), additionally in the survival and growth stages.

Consistent with the above discussions, this study expects that venture goal commitment will have a positive effect on entrepreneurial effort towards venture growth tasks.

Hypothesis 10: Venture goal commitment has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.

Tasnim et al. (2014) restate the importance of understanding how commitment is developed, which has been scarcely researched, as commitment is explained to be an "extreme behaviour… and a complicated psychological concept to work on, with many connotations and even more applications…" (Kiesler, 1971, p. 159), and a further challenge lies in different definitions which exist across various fields of research (Meyer and Allen, 1997).

De Clercq et al. (2009) study found that among nascent entrepreneurs, goal commitment is developed from the desirability and feasibility of goal accomplishment. Concerning the desirability of goal attainment, both the values relating to entrepreneurship as a career choice and perception of normative support are positively related to goal attainment.

2.25.5 A new representation of the entrepreneur's commitment

This section aims to clarify the formation of entrepreneurial commitment further. The term commitment refers to a deliberate binding by either a promise or a contract. One such example is a pledge (legal or romantic): the individual who pledges forms an obligation for themselves or towards others. Thus, to commit oneself means to be placed deliberately in a situation which then creates responsibilities and presents choices that are predetermined by the initial decision (Fayolle et al., 2011).

The above negative explanation of commitment which emphasises the surrendering part of one's freedom is also found in the psycho-sociological approaches, which emphasises on the deliberative dimension of this subjection. However, commitment and escalation of commitment approaches both explain situations describing traps or manipulations in which the individual surrenders their freedom. Though commitment cannot just be focused on the destructive dimension of the individual who perseveres in their choices, it may also be perceived as a configuring and productive phenomenon, which provides positive effects for the individual. Its positive force results in the creation of a professional path, the writing of a book and so on. Thus, the individual decides to follow a path in which the first

step leads to selecting other related actions which are directed towards completing the desired movement.

Therefore, commitment is analysed as a process which clarifies a fundamental choice, while being the result of a succession of committing actions. In conclusion, commitment is explained as the result of an action which leads to more consequent relating actions. Thus, commitment is a binding act, and the individual's degree of freedom will be decreased. This is because what individuals accept when they commit themselves involves two dimensions: on the one hand, they become involved in a series of almost irreversible actions and, on the other hand, commitment relates to other actions which the individual cannot perceive at the time of the commitment. Though, it is this constraining process which allows the individual to create a new path.

2.25.6 Commitment and entrepreneurial performance

Entrepreneurial success is described to be a synonym for entrepreneurial performance which is achieved through efficiency and venture growth (Baum et al., 2001), and is a vital topic in entrepreneurship as it distinguishes an entrepreneurial venture from a small business (Nieman and Bennett, 2002). As discussed previously, often, performance is measured in terms of sales growth and profit over the past five years as well as employee turnover rates (Beal, 2000).

Entrepreneurial commitment develops as the entrepreneur feels content and *happy* to drive their ventures, therefore, willingly becoming committed to their ventures. Despite the unpredictable journey, which requires taking risks and making sacrifices. The willingness acts as a strong force which attaches them to their ventures and encourages them to remain entrepreneurial, especially through the challenges (Tasnim and Singh, 2016).

Commitment is demonstrated to bind the entrepreneur to their entrepreneurial goals, as it surges motivation, thus, leading to behavioural acts which increase entrepreneurial performance. This relationship has been empirically tested by Battistelli, Galletta, Portoghese and Vandenberghe (2013), which has shown that commitment's facets are related to work motivation dimensions, and that commitment and motivation are the antecedents for attitudes and behaviour. As previously defined commitment "is a force that binds an individual to a course of action that is of relevance to a particular target" (Meyer and Herscovitch, 2001, p.

301), while motivation is "a set of energetic forces that originates both within as well as beyond an individual's being, to initiate work-related behaviour, to determine its form, direction, intensity, and duration" (Pinder, 1998, p. II).

Commitment acts as a force which manipulates the entrepreneur's behavioural mindset, directing them to perform entrepreneurial tasks. The high strength of this force assists the entrepreneur to persevere during challenges and uncertainties (Tasnim and Singh, 2016).

2.25.7 Venture goal commitment

Bandura and Jourden (1991) study revealed that patterns of performance have an impact on motivation. Uy et al. (2015) explain such impact is expected to be weaker for entrepreneurs who possess a high level of commitment to their ventures in comparison to less committed entrepreneurs. A study conducted by Klein, Wesson, Hollenbeck and Alge (1999) revealed that commitment predicts higher levels of performance, and the strength of this relationship is stronger when the goal is more difficult to achieve.

Individuals who have high levels of commitment know what they would like to achieve (Locke, Latham and Erez, 1988), and have the willingness to put time and effort and therefore, have higher chances of achieving their goals (Fishbach and Dhar, 2005; Oettingen, Mayer, Timur Sevincer, Stephens, Pak and Hagenah, 2009). Individuals who are highly committed are less discouraged when they face difficulties (Gollwitzer, 1990; Heckhausen, 1991). Furthermore, these individuals are different from less committed individuals; in ways they respond to difficulties (Brunstein and Gollwitzer, 1996; Gollwitzer, 1990).

Individuals who put time and energy towards goal attainment, are less discouraged when they face difficulties, and instead improve their task strategies. This ability to continue and persevere when facing difficulties explains why goal commitment moderates the relationship between goal difficulty and performance (Seijts and Latham, 2011).

Uy et al. (2015) findings showed that venture goal commitment moderates the relationship between perceived progress variability and entrepreneurial effort intensity, such that the negative relationship is weaker for entrepreneurs who have high venture goal commitment.

If entrepreneurs experience high progress variability, it signals that they are experiencing several small wins as well as some challenges. This variability also might suggest uncertainty between what the entrepreneur is doing and desired outcomes (Weiner, 1985). Therefore, facing difficulties and the possibility that actions can have limited impact on desired outcomes can be more challenging for less committed entrepreneurs. Cardon, Zietsma, Saparito, Matherne and Davis (2005) explain that entrepreneurs who are highly committed to their ventures are more psychologically invested, and in turn are emotionally attached to their ventures.

2.25.8 Venture goal commitment and implementation intention

Commitment to the goal as well as to the plan is crucial for the effectiveness of the implementation intention (Ajzen et al., 2009; Gollwitzer, 1999). Implementation intentions become effective as they develop a commitment to the intended behaviour. Therefore, in the field of entrepreneurship, the concept of commitment could be the missing link when investigating the relationship between intention and behaviour (Fayolle and Liñán, 2014).

Research conducted by Gollwitzer and his colleagues (Gollwitzer and Bayer, 1999; Gollwitzer and Brandstätter, 1997; Gollwitzer and Schaal, 1998) investigated cognitive and emotional processes which impact on the effectiveness of implementation intentions. Specific behavioural plans detailing where, when, and how to perform a behavioural intention are explained to result in the sense of commitment to produce the response within the specified circumstances (Gollwitzer, 1999).

Equally favourable intentions may be accompanied by various degrees of commitment to the intended behaviour, and that an increase in the sense of commitment increases the likelihood that the behaviour will be performed (Ajzen et al., 2009). This explanation is supported by research demonstrating that the temporal stability of an intention, which is a crucial aspect of its strength, moderates the relation between intentions and behaviour such that relatively stable intentions better predict behaviour in comparison to relatively unstable intentions (Conner, Sheeran, Norman and Armitage, 2000; Sheeran, Orbell and Trafimow, 1999).

Formulating an implementation intention may lead to developing a sense of commitment to perform the behaviour, even if the implantation intention is not very detailed. This explanation is reinforced by the finding in Ajzen et al. (2009) study

which demonstrated that an explicit commitment to behavioural performance, without the formation of implementation intention, is sufficient to develop a high level of compliance: as high as that developed by an implementation intention. Furthermore, supplementing commitment with either a specific or general implementation intention did not increase compliance.

The next section explains the conceptual framework for this study.

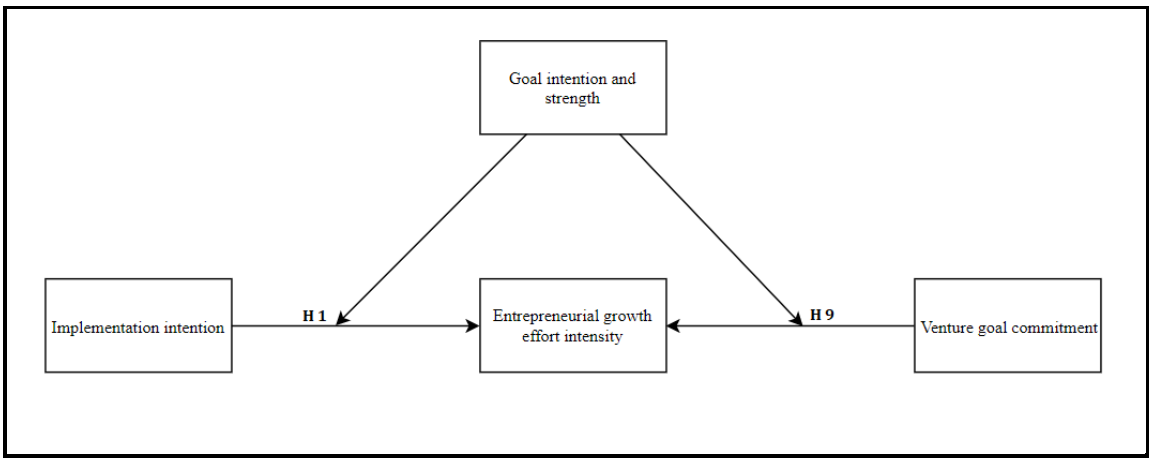
2.26 Conceptual framework of this study

Figure 2-5 illustrates the conceptual framework and hypotheses for this study. The conceptual framework has been divided into two parts (Part A and Part B) to visually separate the investigation of the moderation, mediation, and direct effects. Part A of the framework demonstrates investigating the moderating effect of goal intention and strength on the impact of implementation intention towards venture growth tasks and venture goal commitment towards venture growth on entrepreneurial growth effort intensity.

Part B of the framework demonstrates investigating the mediation of implementation intention and venture goal commitment on the effects of goal intention and strength and venture growth intention on entrepreneurial growth effort intensity. Part B of the framework also illustrates the investigation of the direct effects between the variables and entrepreneurial growth effort intensity.

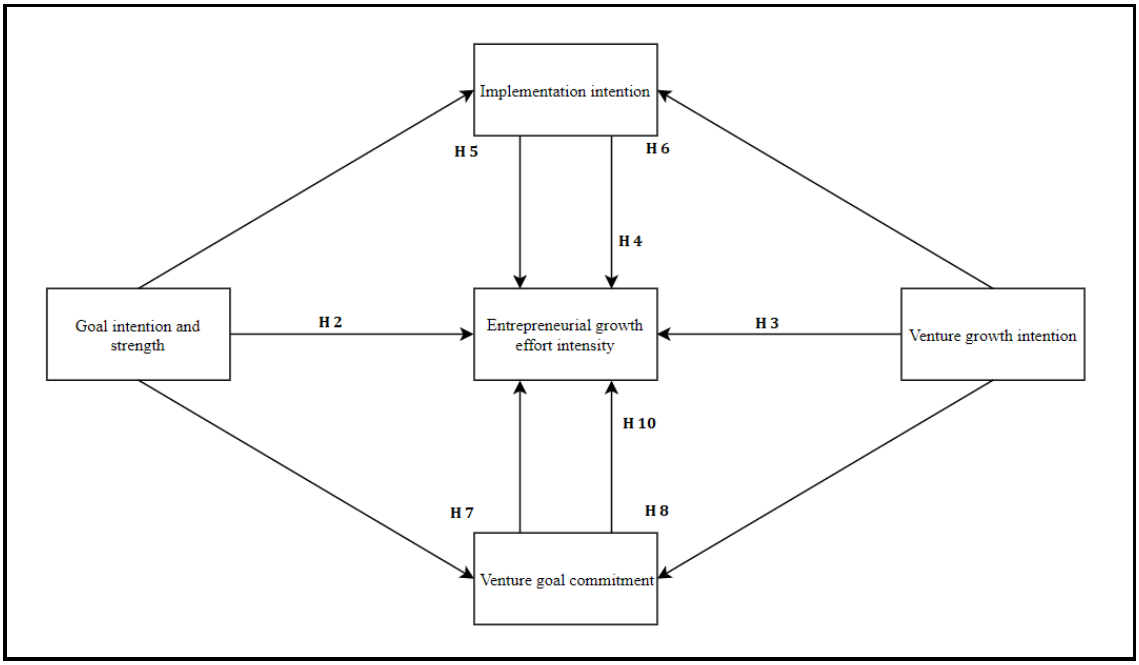
Figure 2-5: Conceptual framework and hypotheses

Part A: Moderation of goal intention and strength



Source: Developed for this research

Part B: Mediation of implementation intention and venture goal commitment, and direct effects



Source: Developed for this research

Table 2-7 provides a summary of this study's hypotheses.

Table 2-7: Summary of study's hypotheses

	Hypothesis
1	Among early-stage entrepreneurs, goal intention and strength moderates the positive relationship between implementation intention and subsequent entrepreneurial growth effort intensity, such that the relationship is stronger when goal intention strength is high.
2	Goal intention and strength has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.
3	Venture growth intention has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.
4	Implementation intention has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.
5	Among early-stage entrepreneurs, implementation intention mediates the effect of the goal intention and strength to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.
6	Among early-stage entrepreneurs, implementation intention mediates the effect of the venture growth intention to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.
7	Among early-stage entrepreneurs, venture goal commitment mediates the effect of the goal intention and strength to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.
8	Among early-stage entrepreneurs, venture goal commitment mediates the effect of the venture growth intention to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.
9	Among early-stage entrepreneurs, goal intention and strength moderates the positive relationship between venture goal commitment and subsequent entrepreneurial growth effort intensity, such that the relationship is stronger when goal intention strength is high.
10	Venture goal commitment has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.

2.27 **Chapter conclusion**

This chapter has provided a thorough systematic review of the literature to develop the study's hypotheses and the conceptual framework investigating

entrepreneurial effort towards venture growth tasks among early-stage entrepreneurs.

Further insight and knowledge on new venture growth is fundamental as thus far, there is lack of exhaustive research on how entrepreneurs manage activities and the potential impact on the process of venture growth (Mathias and Williams, 2018).

Moreover, the literature review has revealed the importance of applying the implementation intention theory and the concept of commitment to the field of entrepreneurship. In particular, when investigating striving for long-term and complex venture goals, as these goals involve a high level of uncertainty with various activities being carried out in diverse sequences (van Gelderen et al., 2017).

Therefore, this study aims to investigate the moderating effect of goal intention and strength on the impact of implementation intention and venture goal commitment on entrepreneurial effort towards venture growth tasks. The findings will provide further insight into understanding the effect of intentions on entrepreneurial effort towards venture growth tasks. Furthermore, there will be an investigation of the mediation of implementation intention and venture goal commitment on the effects of the two intention constructs (goal intention and venture growth intention) on entrepreneurial effort towards venture growth tasks.

In this study, through the implementation of a process-oriented approach, new venture growth is investigated as a process rather than as an outcome. Entrepreneurial effort towards venture growth tasks is investigated among early-stage entrepreneurs, thus, contributing to the limited body of knowledge on how venture growth is attained.

The following chapter is Chapter 3: Methodology.

Chapter 3: Methodology

3.1 Chapter introduction

This chapter introduces and discusses the methodology implemented for this study. Figure 3-1 illustrates the chapter structure, which begins with discussing the study's philosophy view of logical positivism. Followed by a comprehensive discussion on the study's deductive approach, survey questionnaires, quantitative mono-method, and longitudinal research design which is also referred to as panel data. The data has been collected through an application called RealLife Exp, and multilevel regression models have been conducted to analyse the repeated measures which result in clustered data.

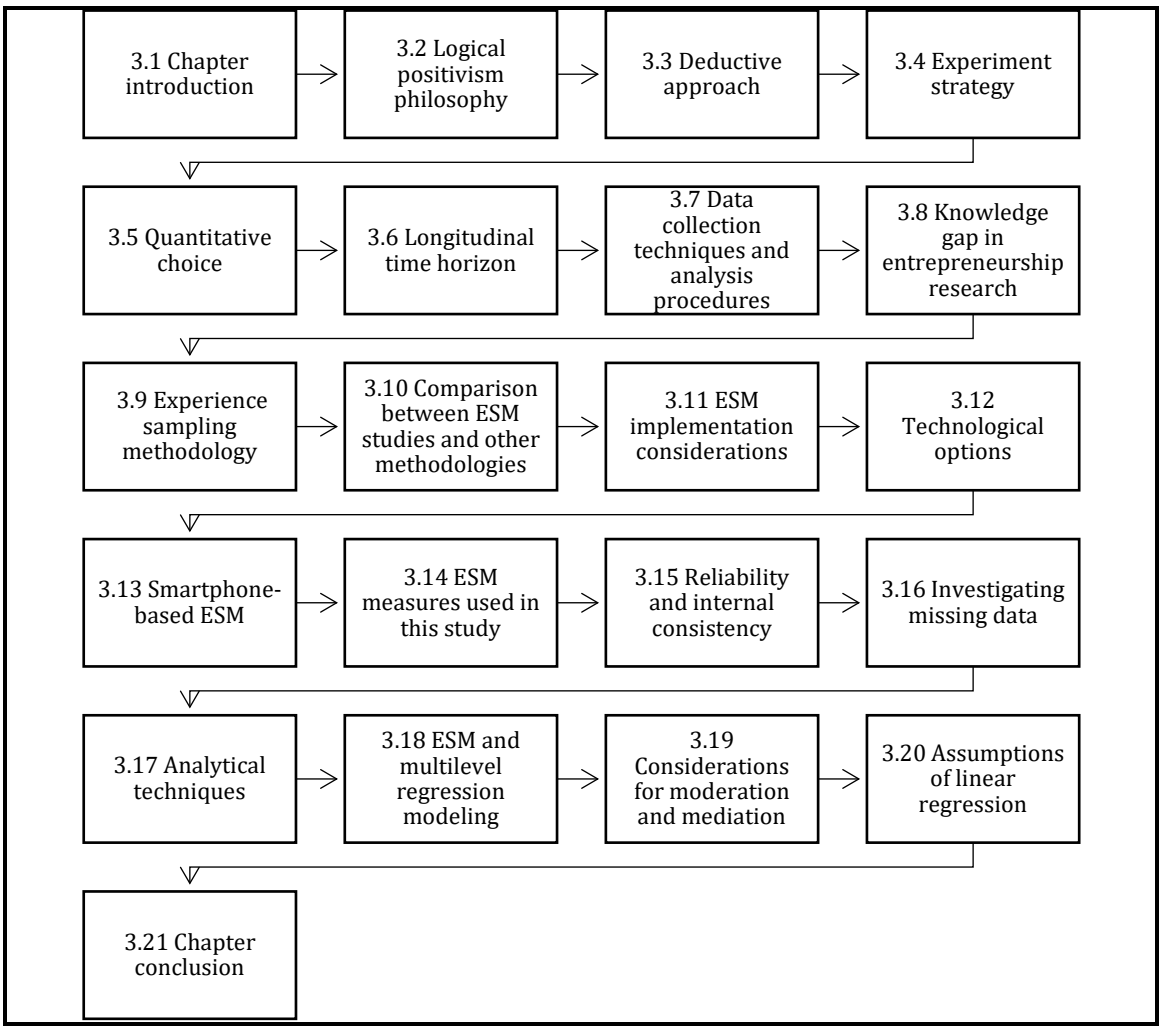
The knowledge gaps in research design in the field of entrepreneurship have been identified and discussed. These include process-oriented research to investigate dynamic constructs and processes, and the examination of within-individual relationships (Davidsson and Wiklund, 2007; Uy et al., 2010).

Subsequently, experience sampling methodology (ESM), using the latest technology smartphone-based (mESM), which has been implemented in this study, is discussed in detail. The data collection process in ESM studies requires significant effort. Therefore, most studies have participant numbers that are considered as modest in social science research standards (Aguinis and Harden, 2009). Though, due to participants being required to respond multiple times, the total sample size is the total number of data points, which becomes sufficient in statistical analyses that focus on modeling within-individual relationships (Uy et al., 2010). This study consists of 1,955 data points collected from 19 early-stage entrepreneurs.

A comparison discussion has been provided between ESM and other methodologies to explain the purpose of this methodology thoroughly. Further discussions on ESM include implementation considerations, technological options, and measures. This chapter continues with a discussion on the reliability and internal consistency of the measures, and how the missing data has been investigated.

The final part of this chapter explains the analytical techniques conducted, which include multilevel regression modeling and structural equation modeling (SEM). Furthermore, the various tests conducted for assumptions of linear regression are explained.

Figure 3-1: Methodology chapter structure



3.2 Logical positivism philosophy

This study holds the philosophy view of logical positivism. Logical positivists hold the view that sole true knowledge is empirical and is fundamentally based on immediate observational data. Additionally, they reject the Kantian synthetic *a priori*, although Kant has a strong influence on their philosophical outlook. Therefore, logical positivists attribute a fundamental role to formal logic, as they hold the view that this allows for formalisation "in a rigorous manner the intuitive inferential processes of ordinary language" (Marsonet, 2019, p. 32).

Logical atomism holds the view that reality must be regarded in terms of atomic facts, which relate to the basic form of language, referred to as atomic propositions. For this view, philosophy uses the formal analysis method, and it aims to clarify meaning, problems, and issues through analysing complex language into its basic atomic structures and clarifying the fundamental construction of language as a form

of reality. This view, which can be seen in the works of Bertrand Russell and G. E. Moore, has also been adopted by John Wisdom, Gilbert Ryle, and Ludwig Wittgenstein. Logical positivism has adopted the method of logical or formal analysis, though, it has also added several other radical principles, an example of this includes the adoption of the scientific method in philosophy and the verification theory of meaning. These views can be found in the works of Rudolf Carnap and A. J. Ayer. ordinary-language analysis, John Austin, and P. F. Strawson, and Wittgenstein, aimed to analyse propositions and concepts through focusing on their relevant contexts of how they are used. Interpreters of this view explain that the meanings of concepts can be clarified through understanding how they are used in relevant contexts (Ikuenobe, 2004).

In Moore's view, the method of analysis involves a definition of problematic and complex concepts which need further clarification. This definition begins with a complex or problematic concept (*analysandum*). It is then followed by trying to propose a set of simpler concepts (*analysans*), which logically correspond to the problematic concept. The problematic and complex concept which this study aims to address is entrepreneurial effort towards venture growth (analysandum) which requires further understanding, defining it through focusing on individual entrepreneur's behaviour, and introducing simpler, less complex, and more defined concepts such as entrepreneurial tasks and activities (analysans).

The fundamental aim of conducting analysis is the clarification of concepts and propositions, and the discovery of new facts about the world. A secondary aim of analysis, according to Moore and Russell may involve the finding of elements of some nonconceptual and non-linguistic complexes. Per logical atomism, "there is a correspondence between atomic facts in the world (reality) and atomic propositions (language)" (Ikuenobe, 2004 p, 481). Formal analysis attempts to explain the core nature of such correspondence. The main purpose of analysis is to clarify the nature of reality via analysing language, which involves examining the world from a purely logical and linguistic point of view. Thus, individuals comprehend the nature of reality by understanding the nature of language, through which reality is captured (Ikuenobe, 2004).

Furthermore, the view of logical positivism involves the verification theory of meaning, the rejection of metaphysics, and the philosophical adoption of the scientific

method. Logical positivists construct philosophical sentences which are cognitively meaningful that are either verifiable or tautologies. Therefore, if a sentence is not logically or methodologically verifiable, it is not considered to be cognitively meaningful. Thus, it cannot be a sentence which has legitimate philosophical significance. Metaphysical statements are not able to be verified, and hence, they are cognitively meaningless. Therefore, the meaning of a sentence is analysable through its method of verification.

Philosophy, whether as the method or process of conceptual analysis, explains that philosophical issues develop from the misuse of language, therefore, when there is a clarification of problematic concepts, many of the philosophical problems will also eliminate. In this case, philosophy is viewed as a conceptual discipline: this fundamental feature of using an analytic method is what differentiates it from other disciplines such as sociology and history. This analysis method and the logical positivism view "have been applied to the concept of philosophy in order to address the metaphilosophical question of the nature and methodology of philosophy" (Ikuenobe, 2004, p. 482).

However, Carnap views philosophy as the analysis of the logic and methodology of science, science being a process of verifying statements which point to facts in the world. Furthermore, Ikuenobe (2004) explains as an *analysandum*, the concept of philosophy is analysed into some *analysans*, in terms of logically essential criteria, some of these include: (1) investigating conceptual and abstract questions and problems; (2) adopting critical, analytic and systematic approaches; (3) using the rational and rigorous method of science; and (4) documenting individual thoughts rather than thoughts of other people.

3.3 Deductive approach

Deduction involves starting from the general then moving to the particular, or in other words starting from a theory, developing hypotheses from it, testing the hypotheses, and finally revising the theory (Locke, 2007; Nola and Sankey, 2007). On the other hand, induction entails moving from the particular to the general, which is when making empirical observations regarding a phenomenon of interest and developing concepts and theories based on the observations (Locke, 2007). Aristotle, the first philosopher of science, explained that induction was required to develop valid theories which thus, logically preceded deduction, which was necessary to test

and further clarify theories (Harriman, 2010). Therefore, induction and deduction were viewed as complementary. Though, further developments in the philosophy of science formed a divide between the two (Woiceshyn and Daellenbach, 2018).

Despite such famous advocates of induction such as Francis Bacon and Isaac Newton (Ormerod, 2009), deduction became popular as the means for scientific research and further advancing knowledge. Therefore, researchers need to rely on essential ideas or existing theories and deduce hypotheses from them. Induction was viewed as an invalid means to advance knowledge.

The deductive approach can begin from any theoretical base, from which any number of alternative hypotheses could then be deduced. A deductive researcher, therefore, begins with an existing theoretical base or with a particular method to test the hypotheses. Then hypotheses are deduced from the theory, data is identified and collected, and method (usually statistical) is applied to test the hypotheses. Findings are then discussed to confirm or modify the existing theoretical base (Woiceshyn and Daellenbach, 2018).

This study applies the deductive approach starting with both an existing theoretical base as well as a particular method to test the developed hypotheses. The theoretical base in this research includes one existing theory and one existing concept: implementation intention theory and the concept of commitment. The method to test the developed hypotheses is experience sampling methodology (ESM). Implementation intention theory and the concept of commitment have been selected to identify various aspects to refine in the context of entrepreneurial effort. Thus, hypotheses and a new conceptual framework are developed. The proposed conceptual framework investigates the roles of implementation intention and venture goal commitment on entrepreneurial growth effort intensity.

3.4 Experiment strategy

Survey instruments are made up of two distinct parts: the cover letter and the questionnaire. No information is collected through the cover letter; however, it has multiple purposes (Kriauciunas, Parmigiani and Rivera-Santos, 2011). The cover letter assists in building trust with the participants, establishing legitimacy, and motivating participants to complete the questionnaire (Dillman, 2000; Dirks and Ferrin, 2001). Questionnaire development requires creating items which explain academic concepts into simpler managerial language, also may require constructing

the instrument (such as item grouping, order, and formatting), translating the items into the required language, and pretesting (Dillman, 2000). This study uses validated scales and slightly adapts the wording of the questionnaires to focus on venture growth and venture growth tasks.

Kriauciunas et al. (2011, p. 1000) explain that open-ended questions provide respondents with the opportunity "to freely share their thoughts and to strengthen their bond of trust with the researchers". This approach may also result in more comprehensive data, as participants who respond to open-ended questions often provide more complete replies than for close-ended questions (Rogelberg, Fisher, Maynard, Hakel and Horvath, 2001).

Survey administration includes procedures for the following: distribution, collection, incentivisation, and follow-ups. The survey questionnaires for this study have been distributed and collected through using the application RealLife Exp, which is explained further in this chapter. Detailed setup instructions on how to download and use the application have been sent to the participants via e-mail to provide a clear guide for them to follow (please see Appendix 2). Regular e-mail correspondences and follow-ups have been sent to the participants throughout the study period. This regular communication has been to ensure that they are not encountering any issues and to encourage openness if they are experiencing any difficulties or have any questions.

3.5 Quantitative choice

Mono-method refers to using a single data collection technique procedures for analysing the data (Saunders, 2012). Many theoretical problems are characteristically investigated with either quantitative or qualitative methods. The mono-method position argues that depending on the kind of theoretical problem, a quantitative or qualitative method will be better suited (Schreyogg, 1992).

A mono-method requires combining either a single quantitative data collection technique (such as questionnaires), with quantitative data analysis procedures or applying a single qualitative data collection technique (such as in-depth interviews), with qualitative data analysis procedures (Saunders, 2012).

This study uses a single quantitative data collection technique, applying experience sampling methodology (ESM), which consists of repeated measures of questionnaires that the participants respond to through an application on their smartphones. The

data analysis procedure for this study is multilevel modeling which is appropriate for data that contains multiple reports over time, and accounts for the data's multilevel structure. Multilevel modeling is discussed further in this chapter.

Shane and Venkataraman (2000) discuss process-oriented studies are crucial in contributing to the field of entrepreneurship as entrepreneurship is a process which occurs over time. One main reason for the reduction of process-oriented research in entrepreneurship is due to methodology. Typical methodological tools used in entrepreneurship research are not able to uncover dynamic processes mainly because they measure variables and relationships in a static manner (Uy et al., 2010). For example, one-time surveys cannot thoroughly investigate questions specific to processes unfolding over time.

Furthermore, the metric to assess entrepreneurial activity should not be relative to the performance of other entrepreneurs. Instead, it should compare performance assessments of the same individual entrepreneur over time (Shane, 2003). Uy et al. (2010) emphasise the importance of understanding within-person variability as it is highly meaningful in the field of entrepreneurship, where various processes and dynamic constructs such as effort demonstrate change patterns within the individual entrepreneur over time.

Uy et al. (2010) propose entrepreneurship researchers to use experience sampling methodology (ESM) as a methodological approach which allows for a longitudinal examination of the nature and causal directionality between the constructs being investigated (Stone-Romero and Rosopa, 2008). ESM is explained as an innovative methodological approach which allows for the investigation of the participants' thoughts, feelings, and behaviours at multiple times across a variety of situations as they happen in real-time in the natural environment (Stone and Shiffman, 1994). Through implementing ESM, entrepreneurship researchers will be able to carry out process-oriented research, and analyse both between- and within-person variability (Uy et al., 2010). Crucial phenomena in entrepreneurship research cannot be thoroughly investigated if researchers continue to use traditional methodologies, particularly cross-sectional designs such as one-time data collection via surveys and/or interviews.

ESM has been implemented for this study as per the above discussions and recommendations provided by Uy et al. (2010, p. 48) in order "to contribute to the

advancement of entrepreneurship theory… offer insights into entrepreneurship practice." Insights from ESM findings can potentially benefit entrepreneurship educators, directors, and executives at entrepreneurship centres and incubators to design programs and activities which promote effective entrepreneurship practice. However, it must be noted that ESM is considered as a challenging methodology as it is associated with several implementation issues, these include: higher than average level of commitment required from the participants and the cost and amount of resources required by the researchers (Uy et al., 2010).

The importance of real-time process studies is reinforced by Brundin (2007, p. 279) "represents one way to capture entrepreneurial activities as they happen and be able to uncover the more intangible, yet very important, issues in the daily life of the entrepreneur." ESM as a methodology represents real-time process studies which allow researchers to collect data to investigate processes and person-by-situations interactions as they occur over time in a unique and valuable way (Uy et al., 2010).

3.6 Longitudinal time horizon

The main strength of longitudinal research is allowing the researcher to study change and development over time. Schvaneveldt and Adams (1991) explain that in observing people or events over time, it allows the researcher to practice a measure of control over variables which are being investigated, given that they are not being impacted by the research process itself. In longitudinal studies, the basic common question is "Has there been any change over a period of time?" (Bouma, Atkinson and Dixon, 1995, p. 114).

To understand longitudinal research, it is important to distinguish between the terms *dynamic* and *static*. These terms characterise the disconnection which exists between theory and the frequently practised cross-sectional research design applied to test that theory. The variables which underline the theory and their relationships are explained in dynamic terms. Therefore, by applying a cross-sectional design, researchers put the theory's variables and their associations in static rather than dynamic form. This discussion is supported by Singer, Willett and Willett (2003) arguing that differences existing between individuals or other observation units at one time do not represent change.

Ployhart and Vandenberg (2010) question whether most of the theories from various disciplines have been truly tested, as it would require examining the actual

change in the focal variables, which in turn means using a longitudinal rather than a cross-sectional research design. The argument is that the variability associated with a construct at a given time can differ from the variability associated with a construct over time. Therefore, such understanding leads to realising that cross-sectional research often provides little insight into how a variable changes over time and may lead to inaccurate conclusions (Maxwell and Cole, 2007).

Thus, longitudinal research designs allow to examine the dynamic nature of focal substantive constructs properly. Researchers need to focus on the change in substantive constructs being investigated rather than on static representations of the constructs. This requires collecting repeated measures overtime on the same units of observation and in a way that the units may be linked and connected over time. With an emphasis on change it allows researchers to capture two fundamental characteristics of change; (a) within-unit change over time, or growth trajectories, and (b) interunit differences in change which can either be predicted or be used for prediction (Bollen and Curran, 2006; Singer and Willett, 2003).

The minimum number of repeated measures for a longitudinal design is three; however, more than three is desirable (Chan, 1998). Two measures are insufficient for several reasons. One of the limitations of two-wave studies is that any change occurring from Time 1 to Time 2 is by default linear, and therefore, is impossible to determine the nature of change over time (Rogosa, 1995). It is merely an increment of difference between two times, and thus not able to assess whether the change has been steady or delayed or whether it plateaued and then the change occurred again (Singer and Willett, 2003). The second limitation is they confound change as well as measurement error. A researcher might conclude that there has been a true change between Time 1 and Time 2, though the real reason might have been due to measurement error suppressing scores at Time 1 and raising them at Time 2 (Rogosa, Brandt and Zimowski, 1982; Singer and Willett, 2003). Therefore, using three or more repeated measurements increases the number of items, which in turn also increases the reliability (Willett, 1989).

In line with the above discussions, Ployhart and Vandenberg (2010) define longitudinal research as research which emphasises the study of change and contains at minimum three repeated measurements on at least one of the substantive constructs being investigated. A study is not considered as longitudinal research if it

measures the independent variable at Time 1 and the dependent variable at Time 2, as this simply means that the study is a variant of the cross-sectional design.

This study uses a longitudinal research design which is also referred to as panel data. The study period for this research is for three months, during which the main study constructs are measured for six waves, and the intention constructs (goal intention and venture growth intention) are measured for three waves.

The dependent variable for this study is entrepreneurial growth effort intensity (EGEI). The independent variables are implementation intention, venture goal commitment, goal intention and strength and venture growth intention.

3.7 Data collection techniques and analysis procedures

As previously mentioned, this study uses the application called RealLife Exp, which is specifically designed for ESM research to distribute the questionnaires and collect the responses from the participants. The responses have been downloaded into an Excel spreadsheet, then imported into the statistical software Stata, which is discussed in detail further in this chapter.

Prior to the main study, a pilot has been conducted with eight early-stage entrepreneurs for a duration of four weeks, with each variable measured for two waves. The pilot study has assisted with the early identification of possible technical issues associated with the application's platform and the scheduling of the questionnaires.

The analysis this study has conducted is multilevel regression models which are appropriate for clustered data, as the repeated measures of the ESM variables are nested within each individual. The data analysis for this study is explained in detail in Chapter 4: Results and Analysis.

3.8 Knowledge gap in entrepreneurship research

Although there is a large volume of empirical research being conducted in the field of entrepreneurship, there is a distinct knowledge gap in regards to process-oriented research to understand the "how" in entrepreneurship (Davidsson and Wiklund, 2007; Low and MacMillan, 1988). Process-oriented studies in entrepreneurship are fundamental in moving the field forward as entrepreneurship is a process which unfolds over time (Gartner, 1985; McMullen and Dimov, 2013; Shane and Venkataraman, 2000). As mentioned earlier, Uy et al. (2010) argue the point that notwithstanding the contributions of previous research, most methodological tools

which have been used are not able to thoroughly investigate dynamic processes as they investigate variables and relationships in a static manner.

A second distinct gap in the entrepreneurship literature is the lack of empirical studies which examine within-individual relationships. The majority of the existing literature has improved the understanding of between-group relationships, where studies have made comparisons among entrepreneurs (Davidsson and Wiklund, 2007), with limited studies on within-person perspective (e.g. Weinberger, Wach, Stephan and Wegge, 2018). A common between-group comparison involves investigating groups of successful and less successful entrepreneurs to gain a better understanding of factors which differentiate individuals of one group from another (e.g., Aguinis, Ansari, Jayasingam and Aafaqi, 2008). Within-individual approaches may provide different insights from between-person approaches, as the causes for the variations in variables across individuals may be different from the causes for the variations within an individual across situations (Jayawickreme, Tsukayama and Kashdan, 2017).

3.9 Experience sampling methodology

In response to addressing the knowledge gaps discussed earlier, this study has implemented experience sampling methodology (ESM). ESM (Delespaul, 1995; Larson and Csikszentmihalyi, 1983) is also referred to as ecological momentary assessment (EMA) (Shiffman, Stone and Hufford, 2008; Stone and Shiffman, 1994). This methodology is a specialist diary-based questionnaire which is used to collect momentary (real-time) data from participants throughout their daily life. In comparison to traditional methods such as questionnaires and clinical interviews which are conducted at the beginning and end of the study period, ESM is a self-reported assessment which is completed consistently throughout the participants' everyday life. Therefore, continuously assessing symptoms and thoughts as they occur in real time.

ESM questionnaires usually contain a collection of items which are designed to collect momentary data using short, unambiguous questions for example, "Right now I feel cheerful". The term 'momentary' refers to participants rating their experience at the current time when the question is asked, therefore, capturing the variable as a cognitive state rather than a more consistent and stable trait (Csikszentmihalyi and Larson, 2014; Delespaul, 1995). Responses provided can be given both using

numerical scales or as open-ended questions. Logarithmic scales may include visual analogue scales, where participants are required to mark a score on a continuous line representing a score 1-100. They may also be Likert scales which allows participants to rate their responses for distinct categories. For example, a 1 – 7 scale may represent categories from 'strongly disagree' to 'strongly agree'. Open-ended questions can be used for questions where more specific answers are required from the participants, such as the specific challenges they are facing at the time of the data collection.

In the last few years, traditional between-person studies have been accompanied by an emerging stream of research which aims to investigate and explain within-person variations in variables of research interest (Ilies, Schwind and Heller, 2007). This type of research focusing on "experienced states, episodic conceptualisations of work, and dynamic and fluctuating factors" (Dimotakis et al., 2013, p. 537), examines research questions which cannot be adequately addressed through between-individual designs (Alliger and Williams, 1993; Sheldon, Ryan and Reis, 1996). As between-individual approaches examine changes across time as a transient error, they either do not consider temporal variations or consign within-individual relationships to measurement error.

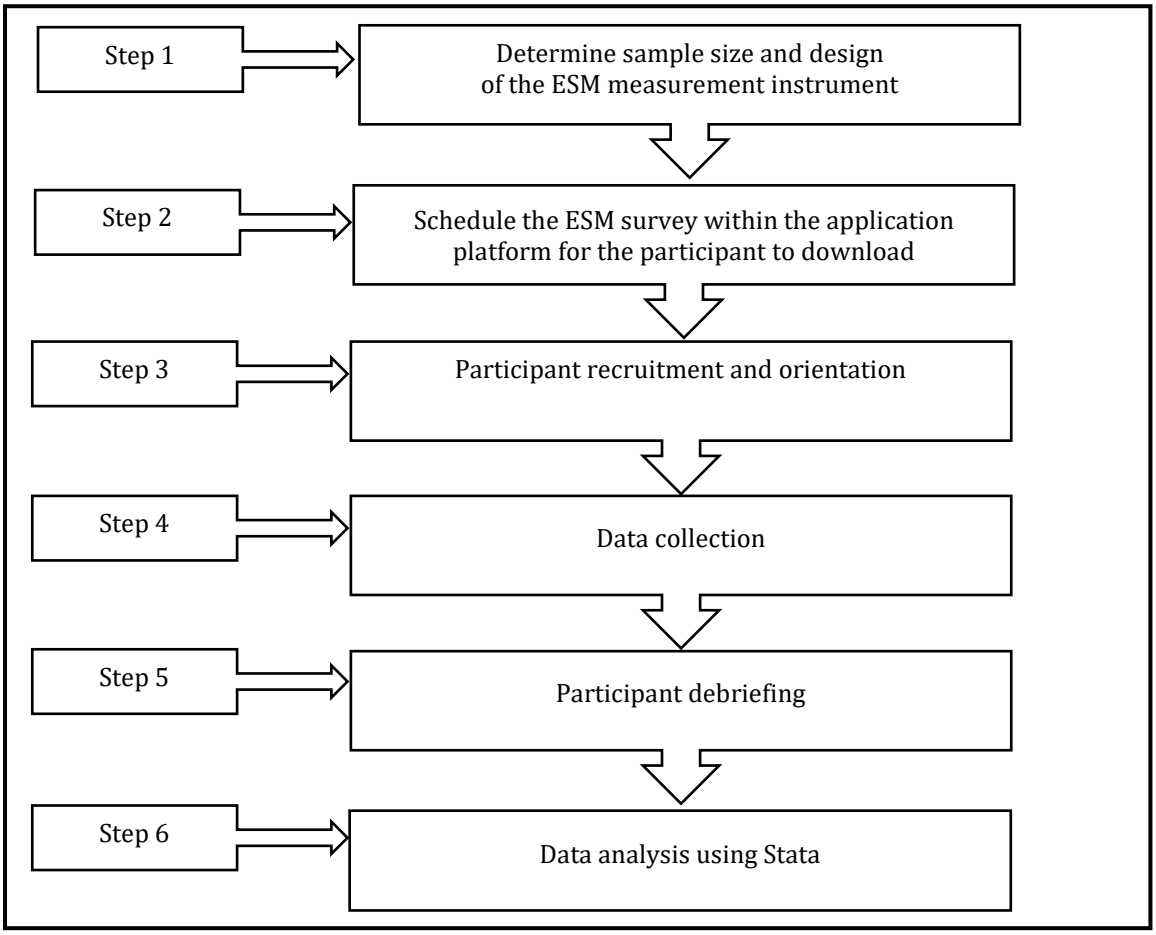
However, in order to understand a phenomenon more thoroughly, both between- and within-individual conceptualisations and measurements are necessary, as each design fails to consider all possible variance. Furthermore, a phenomenon may have different manifestations within individuals in comparison to between individuals (Dimotakis et al., 2013). Therefore, within-individual designs "can provide unique and invaluable insights that stand to make a valuable contribution to the literature" (Dimotakis et al., 2013, p. 538).

Within-individual research is not a recent development, Scollon, Kim-Prieto and Diener (2003) explain that today's within-individual research has been developed from the study conducted by Flügel (1925) who investigated mood over 30 days. However, recent advances in technology and analytics have permitted for a broader range of possible approaches as well as for more easily accessible and statistically rigorous analysis of within-individual data. Thus, leading to an increase of studies in such research and contributing to the growing body of literature which has commenced to discuss the importance of considering dynamic factors and processes (Dimotakis et al., 2013).

These recent advances include the introduction of ESM (Larson and Csikszentmihalyi, 1983). ESM aims to investigate changes in daily or episodic individual states, and to explain the antecedents and outcomes of these states. To achieve this, it involves frequent sampling of experiences of individuals over several days. This allows to accumulate a thorough and representative understanding of how individuals experience daily life, of how they react to distinct events, or of transient effects on their feelings, attitudes, or behaviours (Dimotakis et al., 2013). As a result, this method leads to innovative avenues of research. It provides more in-depth and significant contributions as there is a further development in the technology and concepts associated with ESM (Dimotakis et al., 2013).

Figure 3-2 below demonstrates the steps involved in implementing a smartphone-based ESM for this study.

Figure 3-2: Steps in conducting a smartphone-based ESM study

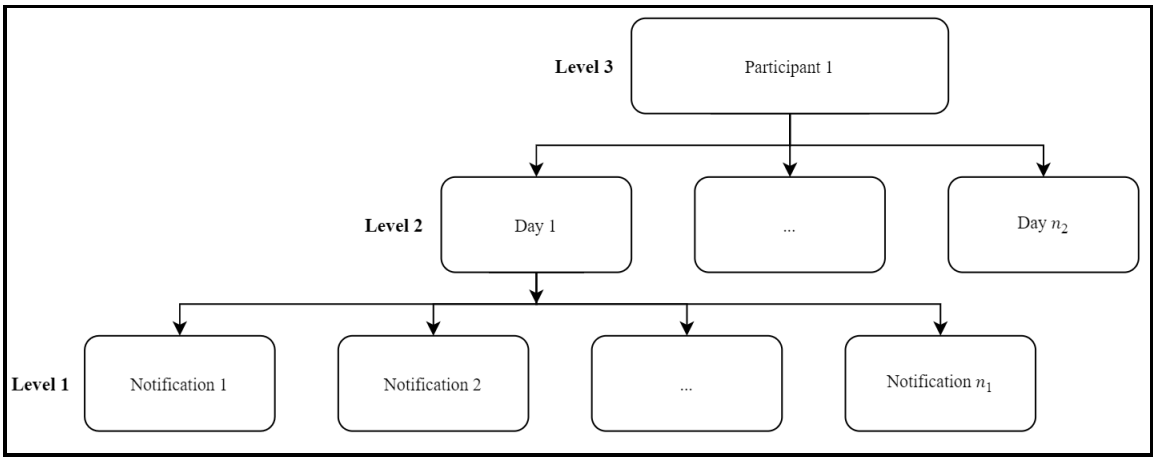


Source: Adapted from Uy et al. (2010)

3.9.1 ESM data structure

Data which is collected using ESM procedure are a series of repeated measures which are observed for each participant over the study period. This type of data is referred to as longitudinal data. In general, longitudinal data capture changes in variables over a long period, which may be months, years or at times decades. As several measurements are collected for each participant, the data are correlated; therefore, measurements are likely to be more similar within-person in comparison to between-person. This correlation can be accounted for during the analysis of longitudinal data but often is not the focus. Figure 3-3 below demonstrates the three-level data structure in ESM.

Figure 3-3: Three-level data structure in ESM



Source: Adapted from Carter (2016)

In this study, the measurement at level one is recorded at moments i=1…n_{1jk}, the subscripts 1 denotes the level of measurement, j is the day number which allows for different number of measurements to be taken per day, and k allows the number of measurements to vary per participant. Day number is denoted j=1…n_{2k}, the subscripts 2 refer to the level of measurement and k to the participant number, allowing each participant to be assessed for a different number of days. Participants are numbered k=1…n_3. It must be noted that for this study the number of moments per day, which is four, and the number of consecutive days of measurement, which is six, has been the same for each of the 19 participants. Therefore, the notation is n_1, n_2 and n_3.

The analysis of ESM data depends on the research question being investigated and the researcher's level of interest in the moment level, day level or participant level. Schwartz and Stone (1998) recommend three categories; participation level

variation, within-subject variation, and whether the characteristics of participant-level predict changes in within-subject variation. Therefore, defining the level of interest will determine the interest outcome and lead to the most appropriate design for the analysis model (Carter, 2016). This study has analysed within-subject variation, which is explained further in this chapter.

3.9.2 Features of ESM

ESM is originally defined by Larson and Csikszentmihalyi (1983) as a research method which requires participants to respond to multiple questionnaires sent to them throughout the day at random times, with measurements usually being taken over several days for a week or longer. In ESM, the multiple measurements throughout the day are designed to provide a comprehensive overview of each participant's experience, thoughts, and feelings. Furthermore, the random distribution of the survey questions aims to ensure the collected data is not systematically biased by, for example, consistent measuring of participants experience at the same time each day, which is not a true representative of the whole day (Dimotakis et al., 2013). Lastly, the collection of data over several days aims to provide a consistent insight into the participants' daily lives (Wheeler and Reis, 1991).

ESM can be personalised in design depending on the characteristics of the sample, the research context and question. Certain research questions may require a non-random delivery of the questionnaires, such as 'how morning positive effect experienced after walking may affect satisfaction with an individual's behaviour at the workplace (non-random survey is required each morning to assess effect after walking) (Dimotakis et al., 2013). Additionally, the measuring of multiple times per day may be less relevant to studies which aim to investigate the relationships among different variables throughout the typical workday. In these studies, some variables may be measured only once a day to examine the research question adequately. Finally, although in general measurements over multiple days are required to achieve sufficient statistical power and collect an adequate sampling of individual experience, collecting data over consecutive days is not necessarily required. Depending on the sample may even actually result in findings which could be less generalisable (Dimotakis et al., 2013).

In conclusion, the exact design of ESM studies is impacted by several conceptual, empirical, and practical considerations. Therefore, as with any methodology,

researches must carefully examine the potential risks and benefits associated with the ESM design. Thus, to ensure the optimal use of the resources available and to be certain that the research question can be investigated with adequate methodological rigour (Dimotakis et al., 2013).

3.9.3 Participant recruitment, training, and motivation

An ESM study requires considerable time and commitment from the participants. Therefore, it may be challenging to recruit participants who agree to respond to questionnaires several times per day for a week or in most cases for a longer duration. As a result, participants should be provided with a detailed explanation of the importance of responding to as many signals as possible. Fisher and To (2012) recommend that participants should be viewed and treated as collaborators in the study. Furthermore, the research assistant should develop a trusting relationship with the participants and maintain regular contact with them throughout the ESM study period.

In this study, it has been highly challenging to recruit early-stage entrepreneurs, as the ESM study has been designed for an intensive three-month duration. Participants have been expected to respond to four notifications per day (at random times) for six consecutive days, after which they have received three days off with no notifications. This process has then been repeated for three months. To the best of the researcher's knowledge, the scheduling for this study is considered relatively intensive in comparison to most of the prior ESM studies.

The final sample has consisted of 19 early-stage entrepreneurs from Australia and Brazil. During the candidature, the researcher has visited the Entrepreneurship Centre at Fundação Getúlio Vargas (FGV) Business School in Brazil as a visiting scholar. The early-stage entrepreneurs who have participated in this study have been targeted through various avenues. These include entrepreneurship community social events, entrepreneurship and innovation program (Insight Academy of Entrepreneurship & Innovation), not-for-profit organisation (Start-up Victoria) and GVentures program at Fundação Getúlio Vargas (FGV) Business School in Brazil. For the community social events and programs, potential participants have been approached directly in person and through the program managers.

For the recruitment of participants, Start-up Victoria featured this study in their weekly newsletter for three months (please see Appendix 3) encouraging their

community of entrepreneurs to participate. The researcher has written the content for the study, which was featured in the newsletter to explain the research. This feature included a web link to the SurveyMonkey website for participants to fill in their details which included: their full name, email address, how long they have been working on their ventures and if they have the intention to grow their ventures. The program director of GVentures has assisted in contacting the entrepreneurs enrolled in the program to explain the requirements of this study.

Most researchers use some type of incentive or reward to recruit and motivate participants. To incentivise the early-stage entrepreneurs to participate in this study, each participant is provided with an individualised analysis of their personality trait using the 44 items from the Big Five trait taxonomy (John and Srivastava, 1999) (please see Appendix 4). This questionnaire has been delivered through the same application used to collect the data for the study. Participants have filled in this questionnaire prior to the start of the ESM. Participants will also be receiving the findings of this study to provide insight on how to improve their entrepreneurial effort towards venture growth tasks.

Training is often an important aspect of starting an ESM study. It is important for participants to understand the meaning of the questionnaires, the time frame in which they should respond to each questionnaire, what to do if they miss a notification, how to use the technology (in this case the application), and who they should contact if there are any issues. As previously mentioned, participants have been provided with clear instructions, including step by step visual guides on how to download and use the application. Participants have also been provided with a thorough introduction email outlining the requirements of their participation (please see Appendix 5).

ESM survey response rates are usually between 70-90 per cent, and at times lower. There are two types of non-compliance by the participants; 1) failing to respond altogether, and 2) responding at a different time than required by the researcher (Fisher and To, 2012). In the case of the former, in most cases, the researcher does not know why participants have missed notifications. Therefore, it is difficult to know whether the missing data is random or is missing in a way which may compromise the ability to develop insightful conclusions (Stone and Broderick, 2009). The missing data for this study has been further discussed in Chapter 5: Discussions, Recommendations, and Conclusion.

Throughout the study, to motivate participants and to improve the ESM response rate, consistent email correspondences have been sent by the researcher to ensure participants are up to date with the research progress. Furthermore, participants have been contacted once they had stopped responding to the notifications, ensuring they have not been experiencing any technical issues with the application itself and requesting for them to continue with their responses. In majority of the cases, participants responded positively to the correspondences received and continued their participation in this study. How the reduction in participant response rate has been addressed is explained further in this chapter.

3.9.4 Sample and scheduling

Due to the amount of effort required for the data collection process, most ESM studies have participant sample sizes which are considered as modest by social science research standards (Aguinis and Harden, 2009). However, because participants are required to respond at multiple times throughout the study, the total sample size is the total number of data points, which is often sufficient in statistical analyses which model within-individual relationships (Uy et al., 2010).

Therefore, the sampling which is involved in ESM studies relates to sampling data from cases, which means collecting multiple reports on the experience of the same group of participants throughout the study. For example, a study conducted by Ilies and Judge (2002) consisted of 27 participants; however, they collected a total of 1,907 ESM ratings of mood and job satisfaction. Researchers may conduct a multilevel power analysis (Scherbaum and Ferreter, 2009; Snijders and Bosker, 1999) to determine the number of participants and the frequency of notifications per participant, while keeping in mind the level of response burden placed on each of the participants.

It is also essential to understand that given the nature of ESM studies, it is fundamental for researchers to achieve a balance between collecting enough information and not overburdening the participants. Usually, ESM surveys which can be completed in two minutes or less are considered appropriate (Hektner, Schmidt and Csikszentmihalyi, 2007). Shortened versions of measurement scales are frequently used in ESM studies to reduce participant burden (e.g., Song, Foo and Uy, 2008; Zohar, Tzischinski and Epstein, 2003). Furthermore, although not without controversy (e.g., Wanous and Hudy, 2001; Warren and Landis, 2007), using single-

item scales is common in ESM studies (e.g., Ong, Bergeman, Bisconti and Wallace, 2006; Williams and Alliger, 1994) due to the effort required of participants to respond to each item at multiple times.

In line with the above recommendations, each survey item in this study has taken, on average 10 seconds to complete. As participants have received four notifications per day, in total, it has taken about 40 seconds to complete the surveys daily. It must be noted that all the survey questions have been communicated in English. All the early-stage entrepreneurs who have participated from FGV in Brazil have been medium-fluent in writing and speaking English.

This study consists of two groups of early-stage entrepreneurs. With each group starting the ESM study at two different times. The two groups were formed as the early-stage entrepreneurs agreed to participate and join the study at various times. Due to group one not having enough participants, further efforts were made to gather more participants. Thus, forming group two (requiring a rescheduling of all the survey prompts within the platform), as group one participants had already started the ESM data collection process. In total (group one and group two), 36 early-stage entrepreneurs agreed to participate in this study. Five of the participants decided not to continue during the very beginning of the ESM study. Furthermore, two of the participants dropped out in the first two weeks (from wave one to wave two), then a further two participants dropped out in the following two weeks (from wave two to wave three). Therefore, initially, 27 early-stage entrepreneurs participated in this study.

However, throughout the study, the commitment levels of these participants has reduced, resulting in a reduction in the number of responses received. Following ESM experts' advise and recommendations (e.g., Hektner et al., 2007), only participants with valid responses of at least one-third (1/3 x 144 notification prompts) of the total ESM survey have been included in this study. Therefore, in this study participants who did not provide a minimum of 48 responses have not been included. As a result, there were 19 participants in the final sample.

Similar to the study conducted by Uy et al. (2015), the scheduling of the survey prompts sent to participants has been randomised from between 11 AM and 10 PM, as this period is the typical waking and sleeping hours of entrepreneurs. As this study has aimed to collect data across a wide variety of situations while keeping in mind not

to overburden the participants, the ESM protocol has had periods of intense data collection while balancing this with periods without any reporting requirements (cf. Gunthert and Wenze, 2011). In total, this study has conducted six study waves of ESM. Each study day comprises of four ESM surveys. For the three-month study period, each participant has been sent a total of 144 prompts (6 waves x 6 study days per week x 4 ESM surveys per day).

3.9.5 Research ethics and procedures

This study has been thoroughly assessed and approved by the La Trobe University Human Research Ethics Committee (HREC) (application ID: HEC18088) (please see Appendix 6). HREC states that "human research is conducted with/or about people, their biological material, and/or data (information) about them." (La Trobe University, 2019a). Therefore, activities such as taking part in surveys, interviews, and/or focus groups require human ethics research approval.

As part of the assessment requirements, a comprehensive application was submitted to explain the aim of this study, including the research method and the survey questions. Each participant's personal information and responses has been kept as highly confidential. The survey questions are worded in such a way that the participants do not feel offended, attacked or any other associated negative feelings that may arise from the questionnaires.

Prior to participating in the study, each participant has read and signed a 'Participant Information Statement and Consent Form' (please see Appendix 7). This form has explained the study and survey requirements in detail. It has also outlined the rights of the participants and the contact details of the researcher and primary supervisor in the case they needed to get in touch for any questions or further information.

3.9.6 ESM research designs

There are three ESM research designs which reflect the timing of the measurements. These designs vary depending on the best-suited research question category and the most appropriate contexts. The three designs are: (1) signal-based, (2) interval-based, and (3) event-contingent (Dimotakis et al., 2013).

Signal-based designs are the most common format. These studies require participants to respond to questionnaires which are delivered to them as per a preselected random or semi-random schedule which is designed by researchers.

Therefore, aiming to measure fluctuating variables throughout the individuals' day, to examine the relationships between the variables. In the study conducted by Ilies, Dimotakis and Watson (2010b), participants were randomly signalled to measure affect, blood pressure, and heart rate throughout their workday. A signal-based approach in this context, has allowed the researchers to investigate individuals' experiences thoroughly and comprehensively, and has assisted in avoiding possible systematic biases when examining relationships between these variables. This study has also implemented the ESM design of signal-based to comprehensively measure the relationships among the fluctuating variables which occur throughout the early-stage entrepreneur's day.

The interval-contingent design assesses individuals at predetermined and specific points throughout the day. These signals might be fixed in time, such as every three hours or organised around specific daily routines such as waking up or start of the workday. Therefore, the interval-contingent design is suitable when examining whether the events of the previous period is crucial to the research question being investigated (Alliger and Williams, 1993), and recollection or retrospective bias is not considered as a concern (Dimotakis et al., 2013).

Some research questions aim to investigate the impact of events and experiences that occur throughout the individuals' day. Therefore, signal– or interval-contingent designs are not appropriate, as it may result in sampling individuals at times which are not close enough to the occurrence of the event. As a result, they will not be able to measure the effects of the occurrence adequately. Thus, to be able to capture such events, researchers can implement an event-contingent ESM design. Participants in event-contingent studies are required to initiate measurements themselves, upon experiencing the event which the study is focused on (Dimotakis et al., 2013).

It is important to note that it is possible to combine and use multiple designs together, to meet the requirements of a research question. For example, a combined signal- and event-contingent research design could provide a comprehensive investigation of an individuals' daily experience, and at the same time be able to capture the research question's specific events of interest. Though combining designs aims to provide a complete assessment, researchers must take into consideration to not overburden participants for the duration of the study (Dimotakis et al., 2013).

Fisher and To (2012) have provided best practice recommendations for conducting ESM research which have been summarised in Table 3-1.

Table 3-1: Best practice recommendations for conducting ESM

Step	Recommendation
1	Plan a data collection schedule (notifications per day, how many days) and approach (interval, signal-based, event-based) which balances participant willingness to respond with the nature of the phenomenon being investigated.
2	Consider power at all relevant levels to determine the number of responses per participant and the number of total participants required. Allow for missed signals, and the effect of missed signal on lagged analyses when planning sample sizes.
3	Design short but reliable valid measures. Consider how best to provide both reliability and validity evidence for these measures.
4	Pilot test the measures for clarity and time among a group of individuals similar to the intended participants for at least several days. Find out reasons for missing or non-compliant reports and adapt procedures accordingly.
5	Thoroughly pilot test the technology for signalling and capturing data.
6	Thoroughly train participants on why compliance is fundamental, what to do if a signal is missed or technical issues, and whom to contact for assistance.
7	Build a close and collaborative relationship with the participants. Motivate and encourage them to respond regularly.
8	Obtain expert statistical advice or training on how best to use multilevel modeling to test hypotheses.
9	Clearly report data collection and analysis procedures.

Source: Adapted from Fisher and To (2012)

3.9.7 ESM applications

Researchers can design ESM studies which aim to investigate a variety of research questions. Although within-person research is the most common ESM application, this method can also be used to examine cross-level and between-person research questions. This study has conducted within-person research which is further explained in the next section.

3.9.7.1 Within-person research application

In general, these studies follow ESM protocols to model the within-person relationships and assess the between-person moderator with a separate one-time survey that is delivered both at the start and end of the study. Special care must be

taken when assessing the between-person moderator variables, as they are usually measured only once, furthermore, inappropriate assessment measurement techniques or time frames may impact on the validity of the study (Dimotakis et al., 2013). The simplest within-person ESM design involves the investigation of two or more variables at various times throughout the day, these are then related at the momentary measurement level simultaneously.

ESM studies can also measure variables which are being assessed at different times, either due to the nature of the research question or methodological considerations. Such studies can associate variables which are measured at the beginning of the workday to variables which are measured at the end, or associate experiences which are measured at work with outcomes measured at the end of work or at home. Therefore, this type of design aims to assess relationships at the day level, investigating how the outcome variable changes across days in which an individual experience either higher or lower levels of a predictor variable and days in which the individual does not experience levels of such increase or decrease.

Day-level analyses also can combine elements of the two aforementioned designs, which means investigating day-level relationships, in which "one or more variables are operationalised as averages of ESM event-level data" (Dimotakis et al., 2013, p. 561). An example of this approach is the research conducted by Ilies, Dimotakis and De Pater (2010a), investigating the effects of day-level workload (assessed with randomly scheduled surveys at three times per day, and averaged to create a day-level variable) on end-of-work stress outcomes as well as end-of-day wellbeing outcomes. Both stress and wellbeing were assessed once at the end of the workday and once more at the end of the day (end of day surveys were delivered during the time the participants were at home).

Within-person ESM studies can also investigate more sophisticated questions which involve more than simple univariate or multivariate associations, which may include moderation and mediation research questions. In cases like these, certain within-person designs can be better suited than others, depending on the specific research question, therefore, researchers must pay special attention during the study-design stage to make sure that the research design can be used to test the hypotheses in a manner which is rigorous (Dimotakis et al., 2013).

As previously mentioned, this study has conducted within-person research to investigate moderation and mediation effects on entrepreneurial effort towards new venture growth tasks among early-stage entrepreneurs. Understanding within-person variability is fundamental in entrepreneurship, as dynamic variables demonstrate change patterns within the individual entrepreneur over time.

3.9.8 Sample size

Due to the multilevel nature of ESM data, a study's sample size can be regarded as being partitioned into three different levels: (1) refers to the number of moments to take measurements per day; (2) refers to the number of days to be observed over consecutively; and (3) refers to the number of participants to be recruited. Thus, powering an ESM study requires developing a balance of sample sizes at all three levels (Carter, 2016). Research suggests that increasing the highest number of units has a greater impact on power (Maas and Hox, 2005; Snijders, 2005), therefore, for ESM studies it implies that recruiting more participants is the most efficient way to increase power. Unfortunately, in practice when designing an ESM study, researchers may experience constraints to sample size which may be unavoidable at each level, and therefore, limit the flexibility of being able to simply increase the number of units in level 3.

Prior to starting the ESM study, the number of participants may have a higher limit of flexibility for several reasons. Firstly, the study size may be dependent on both resources and time available for recruiting participants, for example, with smaller scale studies finding it challenging to recruit large number of participants. Alternatively, the number of suitable participants may be low for cases such as rare conditions or diseases, or when investigating a combination of multiple behaviours and health status, for example, drug use and bipolar disorder.

Recruitment for certain populations, such as those displaying 'risky behaviours', may limit the number of participants which are available. Equally at level 1, the number of observations per day may be already set as researchers may choose to follow a pre-specified sampling regime, which is either designed to reduce the burden of this highly intensive sampling methodology or follow the advice of a research team (Delespaul, 1995). At level 2, a pre-specified study period may be necessary based on restricted time or funding, or to reduce drop out or missing data rate due to participant fatigue. On the other hand, a specific set time period may be required to

be able to capture a minimum number of events or phenomena. Each of the above discussed factors have an impact on the overall sample size of an ESM study and will limit how the three components combine in order to develop a study design which has sufficient power.

Thus, the final design decisions can be based on a few factors, such as sample size availability, length of study constraints, and the specific research question being investigated. Generally, a small between-person sample size will result in low statistical power for both between-person (usually of lower interest in ESM studies) and cross-level analyses. In comparison, a small within-person size from a shorter study length may provide inadequate power for within-person analyses. For such analyses a useful tool is the power in two-level designs program (Snijders and Bosker, 1993), which assists in estimating statistical power and making trade-offs between the between- and within-sample sizes based on the goals of the specific research question.

For ESM studies where there are multiple observations taken across a period of time for each participant, the total sample size N no longer represents just the number of participants (Carter, 2016). Instead as previously discussed, N is divided into three: the number of participants n_3, the number of consecutive days n_2, and the number of measurements within days n_1, resulting in $N = n_1$, x n_2 x n_3. Thus, the total sample size for this study consists of the number of participants and the sampling scheme, which is made up of the number of measurements per day and the number of consecutive days of observation. Therefore, this study's total sample size is:

$$N = 4 \text{ x } 6 \text{ x } 19 = 456$$

3.10 Comparison between ESM studies and other methodologies

ESM studies are different in many ways including "in their design, conceptualisation, and goals from between-person, cross-sectional, experimental, and even traditional longitudinal designs" (Dimotakis et al., 2013, p. 545). Between-person and cross-sectional designs usually aim to investigate how a stable individual difference or trait-like characteristic is impacted by other stable or trait-like outcomes. On the other hand, ESM studies usually investigate how changes in a fluctuating, dynamic state are impacted by changes in another state-like outcome.

Furthermore, ESM studies have been implemented to explain variation in fluctuating constructs which have previously been mainly investigated as stable

constructs. Similarly, whereas experimental studies mainly focus on the impact of some treatment or manipulation on the outcomes of interest, "ESM studies concern the effects of how naturally occurring events and experiences that take place in field settings can influence individuals' feelings, attitudes, and behaviours: (Dimotakis et al., 2013, p. 546). Lastly, longitudinal designs usually measure growth rates or general trends which occur over time, whereas ESM questions usually focus on measuring fluctuations which do not follow temporal trends.

In conclusion, each design allows to investigate different types of research question, and the availability of these different approaches provides the possibility to advance the literature with a more in-depth and comprehensive understanding of the issues being examined. Therefore, in this context, the main strength of ESM studies is that they increase understanding on variability, in how individuals feel, think, and behave in their natural daily environment, and how momentary events and experiences can effect a number of individual-level outcomes (Dimotakis et al., 2013).

3.11 ESM implementation considerations

As with any research approach, researchers carrying out ESM studies need to consider many issues to develop a valid and robust research design. Similar to any other research design, there must be considerations in ensuring the study's internal validity (Nunnally and Bernstein, 1994; Kerlinger and Lee, 2000). However, ESM studies require additional consideration to specific issues which are unique to these designs.

The very first thing to consider is whether an ESM design is best suited for the research question to be investigated from a cost-benefit perspective. In comparison with other research designs, ESM studies usually need a greater investment in time, labour, and financial resources from the researchers. In addition to these commitments, ESM design requires a much more intense data collection from the participants. If the research question can be efficiently investigated with a less complex research design, then ESM may not be the most optimal use of resources (Dimotakis et al., 2013).

Additionally, similar questions must be asked when considering the context for the research, as well as the participants' characteristics. For example, ESM studies which require intensive sampling or random survey distribution may not be appropriate in companies which safety issues would prevent interruptions or frequent survey

notifications from occurring (Dimotakis et al., 2013). Similar issues may apply to participants based on their specific occupation or schedule, such as drivers and teachers. In order to investigate these occupations, ESM studies may be infeasible, or it may need to be modified in order to address these design issues.

Dimotakis et al. (2013) explain that if ESM is chosen as the most appropriate study design to address the research question, then a series of decisions must be made. The most fundamental of these decisions are the length of the study (the duration for the data collection), the frequency of the sampling (how often participants will be required to respond to survey notifications), and the scheduling for the question delivery (what question sets need to be delivered for each sampling period).

Determining the entire length of the study, is an important decision to be made when carrying out any type of research which is across time, but is even more fundamental for ESM studies, due to the high level of demands on participants as well as technological limitations relating to extended data collection. A study which runs for a longer period can result in an enhanced statistical power, which is of importance for day-level designs, or analysis for lagged variables, as these decrease the number of observations.

However, a study which runs for a long period of time, may result in participant fatigue. This is likely to occur if the questionnaires are more than minimal length, which can then lead to reduced participant compliance or a decrease in the quality of the data received by participants. Furthermore, the longer the length of the study, the greater the risk of technological failure due to issues such as software crashes, or battery depletion. This is particularly true for studies which use handheld electronic devices without internet capabilities. Thus, researchers need to find a balance between the advantages of a longer study period with its potential risks (Dimotakis et al., 2013).

It is also important to consider the delivery schedule. Researchers need to ensure that the variables being measured are assessed at times which reflect a suitable fit to the research question being investigated. The first issue which needs to be considered is the operationalisation of the study's constructs, such as if the research question investigates the outcomes of affect experienced at the start of the day at work then affect must be measured at the beginning of the workday. Therefore, "the conceptualisation of the constructs must inform and drive how the variables that

model these constructs are delivered to participants" (Dimotakis et al., 2013, p. 551). The second issue to be considered is making sure that the selected question-delivery schedule protects against threats for the study's validity, such as ensuring suitable temporal precedence.

It is important that these three issues (length, frequency, and scheduling) must be considered at the same time, and not on their own, as they are interrelated. For example, more frequent daily participant sampling, may require reducing the length of the study, in order to minimise potential participant fatigue, and therefore, a delivery schedule which involves longer questionnaires would be in conflict with a more frequent daily sampling (and vice versa). Similarly, decisions about frequency directly impact on making scheduling decisions, and determining the availability of scheduling options.

The key to developing a high-quality ESM research is identifying the optimal balance between the above-mentioned study characteristics which ensures valid data, to thoroughly investigate the research question under examination. For example, the study conducted by Foo, Uy and Baron (2009) implemented a less frequent daily sampling schedule with a longer study duration period: the length of the study was 28 days, however, participants were only sampled twice per day. In contrast to this study Marco and Suls (1993) conducted a shorter study which ran for eight days, but with more frequent daily sampling, where participants received eight surveys per day.

3.12 Technological options

Researchers conducting ESM studies have a number of technological options available to them. These options include which hardware and software (if any) to use for the study. The next section discusses the basic features of some of the technological options available and their advantages and disadvantages, mainly in terms of their cost, reliability and availability of their features (Dimotakis et al., 2013).

ESM studies have been carried out using several hardware options. The three main options include paper formats, portable devices (without internet connection) and internet-enabled devices. Paper formats involve distributing all the questionnaires for the study to participants in advance (usually in a diary format) in addition, would also provide some sort of signalling device (e.g. preprogramed wristwatch or beeper). Participants are then required to complete specific questionnaires by an alarm feature in the electronic device, or to complete questionnaires at specific times if no device is

involved. Paper format studies contain the lowest level of fixed costs and are economical to carry out. Further advantage of paper formats is that they can be used by participants who might not feel comfortable with using modern technology, as well as added benefits such as not being subject to electronic malfunctions, system crashes and battery issues (apart from the signalling device, if it has been used). However, paper formats can be impractical when the variable schedules are complicated and may also be more difficult to ensure participant compliance with the study design.

The second hardware option involves portable devices without internet connection, these include older personal digital assistant (PDA) devices, and any other electronic devise which is used for data collection. These devices do not automatically synchronise with an internet server, for example blood pressure monitors (Ilies et al., 2010a). Devices such as theses allow to send questionnaires to participants based on either preprogramed or random schedules and are able to store each participant's data until they are collected at the end of the study, which allows the researchers to access the stored data. Although these devices can be fairly expensive, they allow researchers to deliver highly sophisticated and complex questionnaires to participants as well as allow for compliance checks, as the responses received from participants are automatically time-stamped (Dimotakis et al., 2013). However, these devises are subject to programming issues and hardware crashes.

Furthermore, these devices require participants to keep them in operation through frequent charging. Therefore, researchers should expect to have a higher failure rate in comparison to paper formats, and may not always be able to detect such issues prior to the completion of the data collection (G Miner, M Glomb and Hulin, 2005). To reduce the above-mentioned issues, researchers must test these devices prior to the beginning of the data collection, as well as develop and deliver carefully worded instructions to participants on device maintenance, and when and how to inform the researchers when technological failures do occur.

Internet-enabled devices refer to any method of questionnaire delivery which can automatically communicate with an internet server, and therefore, allowing researchers to collect and store data in real time. These devices can include portable (such as smartphones) and non-portable (such as personal computers). Portable devices are in general quite expensive to purchase and to maintain online (although now many researchers may have participants complete questionnaires on their own

devices, since the increase in their availability and use). Since personal computers are usually in a fixed location, they can be impractical for participants who do not spend much time at their desks. However, internet connectivity provides researchers with a variety of options in terms of construct measurement and content delivery in comparison to any other technology.

In addition, the real-time nature of the data collection allows researchers to promptly find out any issues with the research, allowing them to make necessary changes to the study design, prior to the study's conclusion. Song et al. (2008) and Foo et al. (2009) have used this technological option through using a Wireless Application Protocol (WAP) technique to deliver ESM questionnaires directly to the participants' mobile phones, therefore, creating a convenient and immediate way to sample the participants.

There are several options regarding which software to use in both internet-capable and non-internet-capable devices. For non-internet-capable devices such as PDAs, there are two free popular programs, which include the Purdue Momentary Assessment Tool (Weiss, Beal, Lucy and MacDermid, 2004) and the Experience Sampling Program (Barrett and Barrett, 2001). For internet-capable devices, there are a number of free and proprietary survey options which researchers can use in trying to balance features and technical support versus the costs involved. However, similar to any research, researchers must be aware not to compromise basic elements of study design in exchange for operational accessibility and convenience (Dimotakis et al., 2013).

In conclusion, there are a variety of options available to researchers who decide to implement ESM research design. The features selected should be a function of the research question being investigated, whilst considering contextual, financial, and sample constraints. Increasingly new technologies have since developed in combination with decreasing cost and convenience of majority of individuals owning a mobile phone. This has created exciting new opportunities for ESM research, allowing researchers to conduct research designs which were previously either impossible or extremely difficult to implement. However, the basic implications of ESM research design still apply, therefore, researchers must make informed technology-related decisions (Dimotakis et al., 2013).

This study has implemented the latest ESM technology available thus far, that is smartphone-based ESM, which is further explained in the following section.

3.13 Smartphone-based ESM

Pejovic, Lathia, Mascolo and Musolesi (2016) explain that mobile devices are set to completely transform numerous aspects of experience sampling, in particular in behavioural psychology. Study design, recruitment of participants, data collection, and the large amount of data collected by smartphone-based ESM (mESM) are incomparable to the same features of more traditional means of conducting ESM. The application is distributed as an executable file, usually through an application store, to a large number of participants who own commodity smartphones. A personalised instance of the application is then run on each of the phones, "where it harnesses phone's sensing ability to recognise the situation in which a user is, and should the situation be of interest, signals a user to fill in a survey" (Pejovic et al., 2016, pp. 3-4). The information provided by the participant is then, along with the data sensed by smartphone's sensors, dispatched to a centralised server where it can then be analysed.

mESM studies have improved on the traditional beeper and paper form studies in a few fundamental ways. Firstly, unlike beepers and diaries, smartphones are already part of the daily lives of the participants, and therefore, do not interfere with their lifestyle. mESM studies build on an already used device, therefore, reducing the burden on the participants to care for and carry an additional device, while also dramatically reducing the cost of the study. Furthermore, by using a conventional device, participants are less likely to feel embarrassed about completing the notifications.

Secondly, modern mobile devices have a range of sensors built-in, such as GPS, proximity, and movement sensors. Therefore, unlike beepers, smartphones have the ability to recognise the context in which a participant is. Most often ESM studies aim to capture participant experience within a certain situation, for example, whenever a participant has a smoke. Beepers use preprogramed notifications, and therefore, are not able to ensure capturing all relevant events. On the other hand, smartphones can infer the context from sensor readings, and then prompt the participant to respond to the notification as the desired event is occurring.

The main disadvantage of beeper based ESM is its complete reliance on the honesty of self-reports (Pejovic et al., 2016). Device location, user's activity, and their social circle can be inferred with the use of smartphone sensors. A vast variety of context can be captured directly by the smartphone, therefore, avoiding user-induced errors in the data. Finally, the sensed context can be directly relevant to an ambulatory assessment of a participant's psycho-physical state.

3.13.1 RealLife Exp application

The name of the application that has been implemented for this study is 'RealLife Exp', which is designed by the company Life Data specifically for ESM research. The participants in this study have been required to download this free application onto their smartphones prior to the ESM study.

The application features allow for the design of ESM protocols to capture patient/participant experiences on a real-time basis (LifeData, 2018). This application is well established and has been implemented for various research studies by a number of leading institutions such as: Yale University, University of Southern California, University of Michigan, The University of Sydney, UNC School of Medicine, and Children's Hospital of Philadelphia.

RealLife Exp application has many features which allow researchers to design individualised and comprehensive ESM studies. This application allows researchers to either use templates or create and design measures from own protocol.

The prompt notifications can be scheduled to be delivered to participants at either fixed or random times. Each prompt notification has the option of *Branching*, which means researchers can design follow up questions to specific responses with various types of questions such as: multiple choice, multi-select, or rating scale. Furthermore, this application has a *Triggering* feature, which allows researchers to send follow up notification-based questions based on the participants' responses to previous answers. The *Yoking* feature allows one participant's response to trigger a specific question for a 'partner' participant, for example either a spouse or a caregiver.

This application allows for easy and convenient delivery of the notifications to participants. Furthermore, it allows researchers to easily make modifications to the study design, in order to improve the quality of the responses they receive, thus, more thoroughly and effectively investigate the research question.

3.13.2 Application limitations

As with any technology this application and its platform have had certain limitations and challenges both during the setting up of the research design and the data collection period. It must be noted each limitation and challenge has been communicated with the application developers via email in order to receive professional advice which has then been communicated to the participants by the researcher.

In total there has been two separate research designs which have been scheduled and setup within the application platform, one for Group one and another for Group two. Each research design (consisting of six waves) has initially been planned and scheduled within a calendar in Excel (please see Appendix 8). Following this, each notification has been scheduled within the platform. Each notification has been setup manually under Notification Initiated Sessions (NIS) for each research design, which is referred to as a LifePak in the application.

During the setting up of the research design within the platform there have been several limitations. One main limitation has been that once a LifePak 'goes live', which is when it becomes available for the participants to download within the application, there can be no further editing, or changes made to it. Therefore, the research design must be setup correctly before the LifePak goes live.

The second limitation is related to signing up for the LifePak. Participants are given access to download the specific LifePak using an email address which they have provided to the researcher. However, if participants use a different email address to sign up for the application, they have not been able to view and download the required LifePak. The only solution for this has been to uninstall, then reinstall the application and sign up with the correct email address.

A further limitation has been once a participant downloads the application; they are automatically assigned with an identification number (LifeData ID). However, the researcher does not know which LifeData ID belongs to which participant. Thus, the initial survey question must be designed to ask the participants for their identification.

During the data collection period there has also been several limitations. A couple of the participants have experienced issues with the font size of the survey questions,

as it has been 'too small'. The application developers have advised this issue is as a result of these participants owning older mobile phone models.

Furthermore, it has been challenging for some participants to locate the correct LifePak to download within the application, as the application homepage is shared among many researchers and institutions worldwide. As a result, there is only one LifePak list that is shared among everyone, which is a list of all current ESM studies being undertaken. Therefore, the LifePaks designed for this study have constantly moved down the list as new LifePaks were created by other researchers. As each LifePak is listed in alphabetical order, the ones with numbers in front of the titles are listed first. Thus, in order to make it simpler for the participants to locate this study's LifePaks, the year 2019 has been added to the beginning of the title for each of the LifePaks. The titles have been: 2019 Venture Growth Study, and 2019 Venture Growth Study – Group 2.

Lastly, during the data collection period, some of the participants have temporarily stopped receiving the survey notifications. This had occurred due to participants turning off all application notifications in their mobile phone settings, which had automatically also turned off the survey notifications for this application. As a result, they had stopped receiving the survey notifications, which was brought to the researcher's attention as the responses have been regularly monitored throughout the study.

3.13.3 Data storage and download in application

The responses from the participants are collected and stored within the application platform. Each research design 'LifePak' has been downloaded individually. There are multiple download options available which include long format data, wide format data, summary data and photos. This study has chosen the long format data download option; thus, the data is formatted so that every participant's response is listed separately by row. The data can be downloaded by either all sessions or specific sessions, with specific start and end date and/or by response time. This study has downloaded all sessions for the three-month study period.

Once the data has been downloaded, the responses have automatically been imported into Excel spreadsheet. Apart from the responses to the survey notifications, the downloaded data has contained further important information including participant ID, session name, notification time, prompt response time, prompt type,

and prompt label. The data has then been sorted for the responses for each participant to be grouped into study waves (one to six), prior to being imported into the software program Stata for analysis.

3.14 ESM measures used in this study

ESM survey questions are recommended to be short and simple (while being true to measuring the construct), especially if the items will be displayed on the small screens of mobile phones or personal digital assistants (PDAs). In order to reduce the rate of routine responding, some programs may allow to vary the order of the item presentation from prompt to prompt, or researchers may choose to design the prompts in order to alternate forms of a measure at various signals. Some programs also allow the option of branching or adaptive questioning, in which the following question is based on responses to a previous question (Fisher and To, 2012). This study has incorporated the branching option in order to get more clarification and detail depending on the participant's previous response to a question.

Fisher and To (2012) question whether repeated self-reporting may alter the phenomenon itself or change participants' perceptions. Frequent self-monitoring has been explained to be used as a therapeutic intervention, therefore, it may be possible that ESM surveys could trigger change or reactivity (Barta, Tennen and Litt, 2011). For example, frequent reporting of work-family conflict may lead to reporting of more conflict due to increased awareness or may lead to reporting of less conflict due to participants being motivated to change their lifestyle.

Thus, measurement reactivity is more likely to occur when the behaviour being reported is evidently positive or negative in desirability (e.g., counterproductive work behaviour), only one item is being reported or event-contingent reporting is being conducted (so that salience of a single phenomenon is high), and participants are motivated to make changes. Although many studies have found no to modest measurement reactivity relating to repeated responding, Barta et al. (2011) recommend ESM researchers to be more vigilant to the possibility.

3.14.1 Single item scales

Scholars have questioned how short a measurement scale is too short. Lane and Shrout (2011) suggest at least three items in a scale should be used for each ESM construct. However, there is also acceptance of the use of single items for some constructs in ESM studies. In between-person research shows mixed evidence on the

effectiveness of single-item measures. Some have discovered that single items are as effective as multi-item scales for concrete constructs (Bergkvist and Rossiter, 2009; Wanous, Reichers and Hudy, 1997). On the other hand, others have discovered that multi-item measures are more predictively valid (Warren and Landis, 2007). In most ESM studies, individuals are asked to rate very straight forward unidimensional constructs relating to current or very recent events and experiences, such as how they feel right now or how hard they were working when prompted. In such studies, a single appropriate item should be sufficient. Van Hooff, Geurts, Kompier and Taris (2007) demonstrated that a single-item measure of current fatigue rated on a 10-point scale was as efficient as an established 6-item measure when both were conducted in ESM surveys.

When single items are used to measure continuous constructs, it is preferred to use a more significant number of response options, for example, a 7-to-10-point scale or a 0-100 slider scale, to increase variance (Fisher and To, 2012). Some reviewers may question that reliability cannot be calculated for single items; however, it is fundamental to remember that reliability only matters in the service of validity (Bergkvist and Rossiter, 2009). If the single item has both face and content validity and correlates with other variables of interest as it should, this suggests construct validity, therefore, probably should be acceptable. Although "complicated constructs with facets or those rated retrospectively over a longer time span should be assessed with multi-item scales" (Fisher and To, 2012, p. 871).

For this study, the scale for venture growth intention had three items; however, only one of the items used a Likert scale, and the remaining two items where open-ended questions. For these questions, participants have responded how they intend to grow their new venture, and what has prevented them with their attempts to achieve their venture growth intention. Thus, the statistical analysis of venture growth intention has been conducted on one item for this scale.

The validated scales used in this study to measure the variables of interest have been adapted to focus on venture growth and venture growth tasks, as illustrated in Table 3-2. The scales used in this study are explained further in the following section.

Table 3-2: Summary of scales for the study's variables

Scale	Description	Reference
Entrepreneurial effort intensity	Entrepreneurial effort intentsity measured towards venture growth tasks.	Adpated from Morris et al. (2009) and Stevenson, Roberts, Bhide and Bhide (1999)
Implementation intention	Implementation intention measured towards venture growth tasks.	Adpated from Ziegelmann, Luszczynska, Lippke and Schwarzer (2007)
Venture goal commitment	Venture goal commiment measured towards venture growth.	Adapted from Brunstein (1993)
Goal intention and strength	Goal intention and it's level of strength measured towards venture growth tasks.	Adapted from van Gelderen et al. (2017)
Venture growth intention	Intention towards venture growth in the coming month.	Adapted from Doern (2011)

3.14.2 Entrepreneurial effort intensity scale

The entrepreneurial effort intensity scale for this study has been adapted from the entrepreneurial effort conceptualisation by Morris et al. (2009) and Stevenson, Roberts, Bhide and Bhide (1999), (please see Appendix 9). This scale has been adapted to measure entrepreneurial growth effort intensity (EGEI). Participants have been assessed on their effort intensity on administrative tasks towards venture growth, creative tasks towards venture growth and growth specific tasks using a five-point scale 1 (very little) to 5 (lot). Administrative and creative tasks have been discussed to be the two major types of venture tasks entrepreneurs usually carry out. Growth specific tasks focus on tasks which directly target and impact on the growth of the venture.

The entrepreneurial effort intensity items have been measured for two waves per month. Therefore, this construct has been measured for six waves over the study period. It must be noted that this construct has been labelled as 'entrepreneurial growth effort intensity' by the researcher, as entrepreneurial effort intensity is directed specifically towards venture growth tasks.

3.14.3 Implementation intention scale

The implementation intention scale has been adapted from Ziegelmann, Luszczynska, Lippke and Schwarzer (2007), (please see Appendix 10). This scale has been measured as implementation intention towards venture growth tasks. It has consisted of three items using a four-point scale 1 (not at all true) to 4 (absolutely true).

The implementation intention items have been measured for two waves per month. Therefore, this construct has been measured for six waves over the study period.

3.14.4 Venture goal commitment scale

The venture goal commitment scale has been adapted from Brunstein (1993), (please see Appendix 11). This scale has been measured as venture goal commitment towards venture growth, using a six-item personal goal commitment scale, which includes: (1) determination, (2) urgency, (3) willingness, (4) opportunity, (5) control, and (6) support, on a scale of 1 (strongly disagree) to 5 (strongly agree).

The items indicate (a) an individual's commitment to pursue venture growth goal (determination, urgency, and willingness), and (b) his or her evaluation of the attainability of venture growth goal (opportunity, control, and support). To control acquiescence tendencies and improve the reliability of the measures, each subcategory has been assessed along with two items (question 1 and question 2), the content has been defined in opposite directions, as suggested by Brunstein (1993).

The venture goal commitment items have been measured for two waves per month. Therefore, this construct has been measured for six waves over the study period.

3.14.5 Goal intention and strength scale

Goal intention and strength scale has been adapted from the study conducted by van Gelderen et al. (2017), (please see Appendix 12). This scale has been measured as goal intention and strength towards venture growth tasks.

This scale has consisted of two items: (1) 'Do you intend to perform venture growth tasks in the next coming month?' The response options have been: 1 (definitely not) or 2 (possibly). Those participants who have responded '*possibly*', have then been prompted with the second question (2) 'Please select which option best describes your intention regarding venture growth tasks.' The response options have been: 1 (perhaps I will, but I am not yet sure) or 2 (I am pretty sure/ I definitely will). The latter question has measured the level of strength of the individual's goal intention; therefore, this construct is referred to as goal intention and strength as per van Gelderen et al. (2017).

The goal intention and strength items have been measured for one wave at the beginning of each month. Therefore, this construct has been measured for three waves over the study period.

3.14.6 Venture growth intention scale

The venture growth intention scale has been adapted from Doern (2011), and focuses on intention towards venture growth (please see Appendix 13). This scale has consisted of three items. The first item has used a four-point scale 1 (grow substantially) to 4 (become smaller). The second and third items have been open-ended questions, which participants have been encouraged to discuss how they intend to grow the new venture, and if anything has prevented or interfered with their attempts to achieve growth intentions.

The venture growth intention items have been measured for one wave at the beginning of each month. Therefore, this construct has been measured for three waves over the study period.

3.14.7 Time one measures

This study has administered the time one survey which the participants have completed prior to the start of the ESM study. Participants have responded to the questions on the Big Five trait taxonomy, and background information which have been treated as control variables. The following section explains these variables in detail.

3.14.7.1 The Big Five trait taxonomy

As previously explained, to incentivise the early-stage entrepreneurs to participate in this study, each participant is provided with an individualised analysis of their personality trait using the 44 items from the Big Five trait taxonomy.

Once the participants had downloaded the LifePak for this study within the application, they have been prompted to complete 44 items (once) for The Big Five trait taxonomy (John and Srivastava, 1999).

John, Donahue and Kentle (1991) developed the Big Five Inventory (BFI) to represent the prototype definitions developed through expert ratings and factor analytic verification in observer personality ratings. The aim has been to create a brief inventory which allows efficient assessment of the five dimensions. These are labelled as: (1) extraversion or surgency (talkative, assertive, energetic), (2) agreeableness (good-natured, cooperative, trustful), (3) conscientiousness (orderly, responsible, dependable), (4) emotional stability versus neuroticism (calm, not neurotic, not easily upset), and (5) intellect or openness (intellectual, imaginative, independent-minded). These factors eventually became known as the 'Big Five' (Goldberg, 1981). These five

dimensions represent personality at the broadest level of abstraction. Furthermore, each dimension summarises a large number of distinct and specific personality characteristics (John and Srivastava, 1999).

The Big Five trait taxonomy measurement has been included in this study to provide the early-stage entrepreneurs with an insight into their personality traits as an incentive to participate. This is in addition to the participants receiving the results of this study.

3.14.7.2 Control variables

This study has controlled for potential effects of relevant variables (please see Appendix 14). The responses for these variables have been collected prior to the start of the ESM study.

Gender has been included as a control variable as the Global Entrepreneurship Monitor report (GEM) (Steffens and Omarova, 2019) indicates that commonly there is a gap in Total Early-stage Entrepreneurial Activity (TEA) rate among the male and female adult population across the economies. Furthermore, Steffens and Omarova (2019) discuss that across all parts of the globe early-stage entrepreneurship is more common among the mid-career ages of 25-54 years in comparison to younger and older age groups. Therefore, age has also been controlled for.

Following the study conducted by van Gelderen et al. (2017), which has focused on the effects of implementation intentions on taking entrepreneurial action, the type of business activity has been included as a control variable. The type of business activity consisted of a part-time business; a sole proprietorship employing only the founder; a small business employing only a few people; or a business into which the aspiring entrepreneur intends to invest for growth. Furthermore, country of business activity has also been controlled for per prior research conducted by Beynon, Jones and Pickernell (2016), this study investigated and identified the variations between individual countries at different levels of economic development, and groups of countries in their level of opportunity and entrepreneurial activity.

Educational attainment has been controlled for, following the discussion from Parker (2009) stating that the majority of prior studies have found a positive relationship between educational attainment and the probability of being or becoming an entrepreneur. Educational attainment options have been high school

degree or equivalent; associate degree or equivalent; bachelor's degree or equivalent; master's degree or equivalent; or doctorate or equivalent.

Prior entrepreneurial experience has been operationalised as the extent to which the participants have previously been involved in the start-up of a new venture and has been included as a control variable. The study conducted by Gielnik, Zacher and Wang (2018) indicated that the moderating effect of age on the relationship between entrepreneurial intentions and entrepreneurial activity through prior entrepreneurial experience was significantly positive. Prior entrepreneurial experience has been measured using a two-step approach. First, the participants have been asked whether they have prior entrepreneurial experience. If the participants have responded 'no' they have received a score of zero for prior entrepreneurial experience. If the participants have responded 'yes', they have then been asked to indicate the number of years of entrepreneurial experience. Using a single item to measure prior entrepreneurial experience is per previous research (Davidsson and Honig, 2003; Farmer, Yao and Kung–Mcintyre, 2011).

A further control variable included in this study is the parents' entrepreneurial background. The participants have selected from the following three options: both parents are not self-employed; one parent is self-employed, or both parents are self-employed. Prior research has confirmed that the children of entrepreneurs learn the aspects involved in running a venture and therefore, consider establishing a new venture as a natural career path (Cooper et al., 1994; Sandberg and Hofer, 1987). Furthermore, entrepreneurial parents often become role models and create management know-how for the individual entrepreneur (Papadaki, Chami and Branch, 2002); thus, influencing their entrepreneurial behaviour. Children of entrepreneurs (self-employed mother or father), tend to have a greater tendency also to choose a self-employed career (McElwee and Al-Riyami, 2003).

3.15 Reliability and internal consistency

Reliability is defined as "the extent to which measurements can be replicated" (Koo and Li, 2016, p. 155). Therefore, it not only reflects the degree of correlation but also agreement between measurements. Mathematically, reliability represents both a ratio of true variance and error variance. The next section discusses the reliability and internal consistency measures applied in this study.

3.15.1 Pearson correlation coefficient

Most prior studies discuss the Pearson correlation coefficient, which is commonly used to evaluate reliability. However, the Pearson correlation coefficient is only a measure of correlation, and thus, it is nonideal measure of reliability. A more appropriate measure of reliability should represent both degree of correlation and agreement between measurements. Intraclass correlation coefficient (ICC) is such a measure.

This study has developed a correlation matrix for the continuous variables using Pearson's Product-Moment Correlation (r), to examine direct correlations. Please see Table 4-11 in Chapter 4: Results and Analysis. Furthermore, ICC has been taken into consideration during the application of the regression models.

3.15.2 Intraclass correlation coefficient

Intraclass correlation coefficient (ICC) was first introduced by Fisher (1954), as a modification for the Pearson correlation coefficient.

All ICCs are based on a ratio of variances which can be obtained from analysis of variance (ANOVA). In an ANOVA analysis, the total variance of measurements can be divided into true variance and error variance. The ICC is related to the true variance, which is the variance due to the differences in between individuals to the total variance within the measurements, which consists of the true variance plus the error variance (de Vet, Mokkink, Mosmuller and Terwee, 2017).

This study has evaluated ICC values for the multilevel regression models. This evaluation is for three main reasons: (1) investigate if the observations within-individuals vary or are similar to the observations between-individuals, (2) understand how much of the overall variation in the responses is explained by within-individual effects, and (3) explore how the ICC changes as variables are added to the model.

3.15.3 Cronbach's alpha

Cronbach's alpha (α) reliability (Cronbach, 1951) is a widely used measure of reliability in both social and organisational sciences. Cronbach's alpha reliability defines the reliability of a sum or average of q measurements, where the q measurements may signify q occasions, raters, alternative forms, or scale items (Bonett and Wright, 2015). The most common application is when the measurements represent multiple-scale items, and in this case, Cronbach's alpha is known as a

measure of 'internal consistency' reliability. If the measurements are parallel (McDonald, 1999), they will have equal variances as well as equal covariances. However, if the measurements are 'essentially tau-equivalent' (McDonald, 1999), they will have equal covariances but not necessarily have equal variances. It has been shown that Cronbach's alpha accurately describes the reliability of the sum or average of q measurements which satisfy the parallel assumption or the less restrictive assumption of essentially tau-equivalent.

Bonett and Wright (2015) discuss that it is common but is an inappropriate practice that most studies only report the sample value of Cronbach's alpha. They further explain that the sample value of Cronbach's alpha consists of sampling error which is of unknown direction and magnitude. Therefore, a confidence interval for the population value of Cronbach's alpha should be reported as well as the sample value. Although the reliability of a measurement itself is informative, it is important to have some insight into the population value of Cronbach's alpha, in studies which use a sum or average of item measurements as either a response variable or a predictor variable in a statistical analysis.

Some researchers are concerned that in a statistical analysis, the sample value of Cronbach's alpha for a response variable or a predictor variable might be unacceptably small. However, there is no universal agreement on minimal acceptable reliability value. Therefore, an acceptable reliability value depends on the type of application and main focus should be on the reliability value of the population and not on the reliability value of the sample (Bonett and Wright, 2015).

For this study, as per suggestions made by Bonett and Wright (2015), a 95 per cent confidence interval has been calculated for each sample value of Cronbach's alpha as illustrated in Table 3-3. The confidence interval has been generated by using the Stata command 'bootstrap alpha'. Bootstrapping is a test which relies on random sampling with replacement. Thus, bootstrapping the statistics in alpha by resampling observations (with replacement) by a given number of repetitions from the data stored in memory (StataCorp, 2019). The number of repetitions for this study has been 500. This value has been selected randomly by the researcher. To be able to reproduce the results, a seed value is also provided, which starts the random number generator at the same point. Seed value 42 has been randomly selected for this study.

Table 3-3: Results of Cronbach's alpha

Cronbach's alpha	Ent. growth effort intensity	Implementation intention	Venture goal commitment	Goal intention & strength
Average interitem covariance	0.551	0.641	0.283	0.037
Number of items in the scale	3	3	12	2
Scale reliability coefficient	0.646	0.923	0.822	0.454
95% Confidence interval	.499, .763	.878, .958	.747, .868	.230, .742

Cronbach's alpha ($\alpha = .65$, $\alpha = .92$, $\alpha = .82$) indicated that the internal consistency of the scales for entrepreneurial growth effort intensity, implementation intention, and venture goal commitment respectively, was good. For a further explanation on these results, please see Chapter 4: Results and Analysis.

3.16 Investigating missing data

Missing data occurs in all types of research; however, it can be particularly problematic in longitudinal studies where participants are required to respond multiple times over the study period. Less observations available for analysis results in a reduction in power to be able to detect effects, and with participants completing different numbers of notifications, analysis methods which need balanced sets of data cannot be used. Depending on the reason for the missing data, known as the missing data mechanism, and how this data is subsequently analysed, substantial bias is probable.

3.16.1 Missing data mechanisms

The missing data mechanisms can describe the missing data classification as per Little and Rubin (1987): missing completely at random (MCAR), missing at random (MAR) and missing not at random (MNAR), also known as non-ignorable (NI) missingness. MCAR occurs when there is no relationship between the missing data and any variables within the data set. A lesser but still a robust assumption is that data may be MAR. MAR occurs when the missing data may have an association with another variable in the dataset, however, is not determined by the variable itself. MNAR occurs when participants have missing data for a particular reason which is directly related to a variable of interest (Schminkey, von Oertzen and Bullock, 2016).

The missing data mechanisms for this study's data have been: MAR and MNAR. Similar to most ESM studies, this study has experienced MAR, which occurs due to participant fatigue as a result of intensive data collection. Thus, some participants' commitment to respond has continued to reduce throughout the study. MNAR has

been due to the fewer measurement frequency of the study's intention variables (goal intention and venture growth intention). As previously mentioned, these two variables have been measured for three waves in comparison to six waves as they seem to fluctuate less frequently. As a result, this has created non-random missing values. To investigate the effect of MNAR two separate multilevel regressions have been modeled, one model has included all the study variables, and the second model has excluded the two intention variables.

3.16.2 Missing data in ESM studies

ESM studies are highly vulnerable to missing data as participants are required to complete questionnaires completely unsupervised, for multiple times a day over a certain period, while performing their usual daily routine. Complete compliance, where all the data is gathered as initially intended is unlikely, with notifications missed due to the demands of everyday life or due to the intensive sampling procedure which at times may become too burdensome. Although ESM study designs most often include participant training in the data collection method, as well as consent regarding the intensive sampling procedure, the design being self-reported means that the quality of data is completely reliant on the participant's compliance to the study protocol (Dimotakis et al., 2013).

Determining the exact amount of missing data in an ESM study could be problematic due to the study design. For example, event-based sampling requires notifications to be completed after the participant has experienced a specific event, such as after smoking a cigarette. With this type of design, there is no exact expected number of notifications to be completed, and therefore, often there is no record of any missed events.

The definitions for compliance and adherence in these ESM studies are often ambiguous. Authors refer to the number of valid notifications completed without a clear definition of these terms. Approaches to missing data are rarely discussed by studies who have haven conducted ESM designs. In the systematic review of ESM studies conducted by Carter (2016), only five studies out of 659 explained their basic compliance figures. Although these five studies provided comments on how missing data was accommodated for. However, none of the studies provided any further details, nor made comments on any assumptions these methods require. The remaining studies in the systematic review provided no information on how missing

data were addressed. Furthermore, no studies reported imputing missing data or further investigating missing data mechanisms.

3.16.3 Nonresponse in ESM data

Dimotakis et al. (2013) discuss that investigating the cause of missing data in ESM studies does not seem to be extensively practised. Thus far, there have been two published papers which explicitly examined missing data in an ESM context. Both these papers have provided detailed procedures on investigating the missing data mechanism. Within-person models investigated whether the time of day or day of notifications sent predicated the rate of missing data, in separate models, notification number and day number were entered as linear and quadratic terms to study time trends in missing data. All measures of time were found to be statistically significant, therefore, suggesting that both the within- and between-day trends in missing data follow 'an inverted-U' pattern with less missed notifications in the morning and evening, and fewer missed notifications at the start and end of the week.

It is recommended that during data collection, steps should be taken to minimise nonresponse from participants, such steps may include contacting participants during the study and using easy and convenient data collection devices. If the specific predictors of nonresponse are known for the participants in the study, then attention must be paid to encourage adherence to protocol. Concerning appropriate statistical analysis for cases where missing data is present, Silvia, Kwapil, Eddington and Brown (2013) urge that future studies should control for known predictors of missingness to manage the missing at random assumption when using maximum likelihood estimation. Furthermore, the authors suggest that future studies should control for the time of day in their analysis.

In this study apart from participant fatigue, there have been two main reasons that have contributed to a reduction in response rate at various stages of the study. The first reason has been due to technical issues as a result of mobile phone system updates. These updates have automatically made changes in the phone's notification settings, and therefore, some participants had stopped receiving the notifications. The researcher has contacted these participants via email, and once they were notified, they have readjusted their notification settings. The second reason has been due to some participants misunderstanding that the study had aimed to take repeated measures, and thus, they thought they were receiving repeated questions by mistake.

Consistent, individualised email correspondences have been sent to these participants thoroughly explaining the issues discussed above, which then assisted in addressing and improving the response rate.

Due to this study requiring a high level of participant commitment, as previously explained, some participants have decided to stop taking part. The reasons provided include an increase in family commitments, unexpected business travels and unforeseen work commitments. These reasons were communicated and explained by each of the participants to the researcher.

3.16.4 Summarising missing ESM data

Due to its complex data structure, ESM has the probability for missing data at several levels; to describe and summarise this multilevel nonresponse, Carter (2016) defines the following new terms for categorising ESM missing data;

Item nonresponse: refers to missing data at the item level, which is the proportion of uncompleted notifications/questions within a diary. This category may be expressed as total item nonresponse, the overall proportion of missing items – or it may be expressed as average item nonresponse, representing the average proportion of missing items within a diary.

For this research, each ESM diary has consisted of a total of 144 items over the three-month study period. The percentage of item nonresponse for each study variable at each study wave is calculated for the overall final sample of 19 participants. Calculations are provided in Chapter 4: Results and Analysis.

Furthermore, a Pearson's Chi-square test has been applied to further investigate the proportion of missing values for each of the study variables, to analyse the association between the proportion of missing values and study wave. This test has been applied to categorical data to evaluate how likely it is that the observed distribution is due to chance (Statistics Solutions, 2019). This test has allowed for further insight into understanding the patterns associated with missing values over the six study waves.

Moment nonresponse: refers to missing data at the moment level, which is the proportion of uncompleted diaries. Again, this category may be expressed as total moment nonresponse or as an average per participant. The exact definition of moment nonresponse will depend on what the researchers consider as a 'completed' diary, to be defined in terms of item nonresponse. A clear definition will be to

categorise a diary as incomplete if all items within the diary are missing. However, this could then mean that it would be possible to define a diary as 'complete' if at least one item has been answered.

Therefore, response validity in this argument would rely on when requiring a minimum overall response rate: that is if only one item has been answered, is the response efficient enough to represent the current experience. If the study requests for a minimum overall response rate for validity, then a more comprehensive moment nonresponse definition might be necessary. This alternative then does rely on researchers to clearly define a cut-off point regarding the within diary item completion.

In this study, as per recommendations made by ESM experts Hektner et al. (2007), participants with valid responses of at least one-third of the total ESM diary have been included in the analysis. Thus, a completed diary has been defined as a minimum of 48 items (1/3 of 144 items) being completed.

3.17 Analytical techniques

Except for when ESM data are aggregated at the individual level, ESM data analyses need to contend with special considerations owing to the nested structure of the data. The nested structure of data is formed as there are multiple measures taken for each individual/participant. Therefore, ordinary least squares (OLS) statistical techniques are not appropriate, as ESM data violate the independence of errors assumption of OLS regression.

Therefore, to analyse ESM data, similar to any other nested data structure, some form of multilevel modeling is required. These multilevel modeling techniques take into consideration variance at multiple levels of analysis, which address (non)independence issues, providing a straightforward conceptualisation of multilevel data (Dimotakis et al., 2013).

3.17.1 Multilevel regression modeling

Multilevel regression models are also known as hierarchical linear, random coefficient, variance component, and mixed (linear) models. In most cases, it assumes hierarchical data, with one response variable measured at the lowest level and explanatory variables measured at all existing levels. Therefore, the model is viewed as a hierarchical system of regression equations. For example, there is data in J groups which consists of a different number of individuals n_j within each group. On the

individual (lowest level), there is the outcome of individual i in group j, variable Y_{ij}. There is one explanatory variable X_{ij}, and on the group level, there is the explanatory variable Z_j. Thus, there is a separate regression model within each group:

$$Y_{ij} = \beta_{0j} + \beta_{1j}X_{ij} + e_{ij} \quad (1)$$

In Eq. (1) β_0 is the usual regression intercept, β_1 is the regression slope for the explanatory variable X, and e_{ij} is the residual term. The regression coefficients β have subscript j for the groups, which shows that the regression coefficients may vary across the groups. The variation in the regression for coefficients β_j is modeled by explanatory variables and random residual terms at the group level:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}Z_j + u_{0j} \quad (2)$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}Z_j + u_{1j} \quad (3)$$

Substitution of Eqs. (2) and (3) into Eq. (1) results in the single-equation version of the multilevel regression model:

$$Y_{ij} = \gamma_{00} + \gamma_{10}X_{ij} + \gamma_{01}Z_j + \gamma_{11}Z_jX_{ij} + u_{1j}X_{ij} + u_{0j} + e_{ij} \quad (4)$$

In most cases, at the lowest level, there will be more than one explanatory variable, and at the group level, there will also be more than one explanatory variable. Assume that there are P explanatory variables X at the lowest level, and Q explanatory Z variables at the group level, which is demonstrated by the subscript q (q = 1, . . . , Q). Therefore, Eq. (4) would become the more general equation:

$$Y_{ij} = \gamma_{00} + \sum_p \gamma_{p0}X_{pij} + \sum_q \gamma_{0q}Z_{qj} + \sum_q \sum_p \gamma_{pq}Z_{qj}X_{pij} + \sum_p u_{pj}X_{pij} + u_{oj} + e_{ij} \quad (5)$$

In Eq. (5), the Υ are the usual regression coefficients, the u are residuals which are at the group level, and the e term represents the residual at the individual level. The regression coefficients are identified as the model's fixed part, as this part does not change over groups or individuals. The residual error terms (u and e) are identified as the model's random or stochastic part (Hox and Maas, 2005).

Linear multilevel regression models assume that the residuals at the lowest level (individual) e_{ij} demonstrate a normal distribution with a mean of zero and a common variance σ^2 in all the groups. The second level residuals which are u_{Oj} and u_{Pj} are

assumed to be independent of the lowest level errors e_{ij} and to have a multivariate normal distribution with a mean of zero. Further assumptions, which are identical to the common assumptions of multiple regression analysis, are fixed predictors as well as linear relationships. Most multilevel software assume by default that the variance of the residual errors e_{ij} is the same within all groups. Although certain types of heteroscedasticity can be explicitly modeled (Hox and Maas, 2005).

The estimation of parameters (regression coefficients and variance components) in multilevel modeling is usually conducted using the maximum likelihood (ML) method. The standard errors (SEs), which are generated by the ML method are asymptotic, which means that fairly large samples are required at all levels. These standard errors can then be used to generate a *P*-value as evidence against the null hypothesis that in the population, a specific regression coefficient is zero. The significance of a regression coefficient can be tested through referring Z = β/SE (β) to the standard normal distribution. The ML method also generates a value for the deviance, which is based on the likelihood (the deviance equals –2 times the log-likelihood).

In addition to the standard errors, the deviance is also able to test parameters for significance. When two models are nested, which means that the smaller can be generated by removing terms from the larger model, the difference between the deviances of these models has a chi-square distribution, with degrees of freedom being the difference in numbers of estimated parameters. This is important for testing the significance of variance terms. The asymptotic Z test is not appropriate for testing variances. This is because firstly, it assumes normality, and variances do not have a normal distribution. Secondly, testing the null hypothesis whether a variance is zero is a test on the boundary of the parameter space (that is variances cannot be negative), and where standard likelihood theory is not valid anymore.

A variance component significance can be tested through comparing the deviance of a model which contains this parameter to the deviance of the same model which does not contain this one variance parameter. This value can be regarded as a chi-square variant with one degree of freedom, which can be used to test the significance of that variance component (Hox and Maas, 2005).

Two different likelihood functions are regularly used in multilevel regression analysis. The first one is the full maximum likelihood (FML). The second one is the

restricted maximum likelihood (RML). The difference between these two is that RML maximises a likelihood function which is invariant for the fixed effects. As RML is more realistic, therefore, in theory, it should lead to better estimates of the variance components, especially when the group size is small. However, FML has one main advantage, as the likelihood is maximised over both the fixed and the random part, the difference between the two deviances can be used to test for differences between two nested models which differ only in the fixed part (the regression coefficients). With RML, only the differences within the random part (the variance components) can be tested.

The proportion of variance within the population explained by the grouping structure is demonstrated by the intraclass correlation coefficient (ICC) ρ. The model which is used to estimate ρ is the model that contains no explanatory variables, and is called the intercept-only model (Hox, 2018):

$$Y_{ij} = \gamma_{00} + u_{0j} + e_{ij} \quad (6)$$

Using this model, the ICC ρ is estimated by the below equation:

$$\rho = \frac{\sigma^2_{u_0}}{\sigma^2_{u_0} + \sigma^2_e} \quad (7)$$

Where σ^2_{uo} is the variance of the second-level residuals u_{Oj} and σ^2_e is the variance of the lowest level residuals e_{ij}. The intercept-only model also provides a benchmark value of the deviance, which measures the degree of misfit of the model, which can be used to compare models (Hox, 2018).

In addition to the samples sizes at the different levels, the size of the ICC may also affect the accuracy of the estimates (Goldstein, 1995). Most often, the issue in multilevel modeling is not the ICC, but the design effect, which shows how much the standrad errors are underestimated within a complex sample (Kish, 1965) in comparison to a simple random sample. Within cluster samples, the design effect is apporximately equal to 1 + (average cluster size – 1) x ICC (Maas and Hox, 2005). In the context of multilevel, Satorra and Muthen (1995) regard a design effect of two as being small.

3.17.1.1 Accuracy of regression coefficients and their standrad errors

The estimates for the regression coefficients are generally unbiased, for ordinary least squares (OLS) and generalised least squares (GLS), including ML estimation (Van

der Leeden and Busing, 1994; Van der Leeden, Busing and Meijer, 1997). OLS estimates are less efficient. Kreft (1996), conducted a reanalysis of the results from Kim (1990), and found OLS estimates that were approximately 90% efficient. Simulations conducted by Van der Leeden and Busing (1994) and Van der Leeden et al. (1997) indicate that even when assumptions of normality and large samples are not met, ML-based standard errors for the fixed parameters contain only a small bias. In general, a large number of groups seem more important than a large number of individuals per group (Maas and Hox, 2005).

3.17.1.2 Accuracy of variance components and their standard errors

Estimates of the lowest-level variance are in general highly accurate. The group-level variance components are at times underestimated. Simulation studies conducted by Busing (1993) and Van der Leeden and Busing (1994) indicate that for accurate group-level variance estimates large number of groups (greater than 100) are necessary (cf. Afshartous, 1995).

The simulations conducted by Van der Leeden et al. (1997) suggest that the standard errors used to test the variance components are in general estimated too small, with RML being more accurate than FML. Symmetric confidence intervals for the estimated value also do not work well. Browne and Draper (2000) discuss similar results. In general, with 24-30 groups, Browne and Draper (2000) show an operating alpha level of approximately 9%, and with 48-50 groups it is approximately 8%. Thus, a larger number of groups seems more important than a large number of individuals per group.

3.17.2 Multilevel analysis of longitudinal data

As previously explained in this chapter longitudinal data are a prospective data where information is collected and followed up over time at several time points. Such data are also referred to as *panel data*, *repeated measures*, or *cross-sectional time-series data* (the latter term explains the xt prefix which is in Stata's commands for longitudinal modeling). Multilevel modeling is used for the analysis of data which have hierarchical or clustered structure.

The main advantage of longitudinal data is that the analysis allows dealing with missing measurement occasions (Hox and Maas, 2005). It is important to distinguish between different types of longitudinal studies. This study is a panel study which means that subjects are followed up at the same occasions or time points (known as

panel waves), which leads to balanced or 'fixed occasion' data, although in some cases there may be missing data (Rabe-Hesketh and Skrondal, 2008). Longitudinal data can be viewed as either two-level or clustered data with occasions nested within subjects, therefore, the subjects become the clusters. For all clustered data, the model should incorporate within-cluster dependence (Hox and Maas, 2005).

Longitudinal data has a special feature which is that the level one units or occasions are ordered in terms of time and are not exchangeable unlike for when using multi-item scales, researchers usually compute Cronbach's alpha at each signal and state the average alpha across measurement times. However, this strategy mainly focuses on between-person variation, whereas within-person sensitivity to change over time is more appropriate when testing within-person hypotheses (Lane and Shrout, 2011).

Recently several methods have been suggested for assessing the reliability of measurement in ESM studies. These methods suggest total variance into that because of items, to within-person changes in cases over time, to stable changes between persons (such as traits), to interactions, and to error (Fisher and To, 2012). It is important to note that between-person and within-person reliabilities will vary, with the former usually high due to repeated measurements.

Methods for assessing between-person and within-person reliabilities in ESM measures have been based on generalisability theory (Cranford, Shrout, Iida, Rafaeli, Yip and Bolger, 2006), latent-state latent-trait theory (Courvoisier, Eid, Lischetzke and Schreiber, 2010; Steyer, Schmitt and Eid, 1999; Wilhelm and Schoebi, 2007), and within-person factor analysis (Lane and Shrout, 2011).

There are a number of different models designed specifically for longitudinal data. Rabe-Hesketh and Skrondal (2008) explain that these models are categorised as per below:

- Random- and fixed-effects models: where unobserved between-subject heterogeneity is represented by subject-specific intercepts and may also be subject-specific coefficients.
- Marginal models: where within-subject dependence is modeled by allowing a direct specification of the covariance structure across all the occasions.
- Autoregressive- or lagged-response models: where within-subject dependence is modeled by allowing responses at a given occasion depend on the previous or lagged responses from the participants.

A fundamental issue in the statistical analysis of hierarchically structured data is the dependence of the observations at the lower levels. Older multilevel analysis approaches ignore this issue and therefore, conduct the analysis by disregarding all data to the lowest level and in turn applying standard analysis methods. In majority of multilevel problems, there is not only the clustering of individuals within groups but also, there are variables measured at all available levels. Multilevel models are designed in order to allow the analysis of variables from different levels simultaneously, using a statistical model which includes the various dependencies. As a result, this leads to research which focuses on the direct effects and the interactions between variables which describe the individuals and variables rather than describe the groups, which is referred to as multilevel research (Hox and Maas, 2005).

3.18 ESM and multilevel regression modeling

ESM data can be analysed through using multilevel regression models. These models allow for the consideration of multiple levels of data without the need to aggregate and may be used to examine variation at each level. They can cater for the nested structure of ESM data, additionally, are valid for unbalanced data sets and may be adjusted to fit complex covariance structures which arise in the data (Dimotakis et al., 2013).

Researchers have a wide variety of options available when selecting a statistical software suitable to perform these analyses. The most common program is hierarchical linear modeling (HLM) (Raudenbush and Bryk, 2002), some other programs include SPSS (with the mixed-model option), SAS (with the PROC MIXED analytical option), Stata (multilevel mixed-model routines), and M-Plus (Muthen and Muthén, 2010). All these programs offer high quality solutions for multilevel modeling. Therefore, regardless of which software is chosen, the principles of multilevel modeling always remain the same.

In general, multilevel modeling needs the simultaneous estimation of regression models at two distinct analysis levels. At the first level of analysis (within-individual), the scores of the outcomes of interest are regressed on the within-person scores for the hypothesised predictors. In this instance, outcomes and predictors generally represent day-level or observation-level scores, although any data which is nested within the individual may be used.

During times when the main effects of a Level two (person-level) variable on the dependent variable need to be considered, in addition to the effects of a Level one variable, the Level two variable is then entered in the Level two equation predicting the Level one intercept β_{0j} (Dimotakis et al., 2013).

Furthermore, multilevel modeling can be used to assess the cross-level moderating effects of a stable person-level variable on the within-individual effects of a dynamic Level one variable on the outcomes of interest (Hofmann, Griffin and Gavin, 2000).

3.18.1 Random and fixed effects

A multivariable random (mixed) effects model has been conducted to understand the independent effects of the main study variables on the outcome variable entrepreneurial growth effort intensity, while also controlling for the control variables. The coefficients provided indicate that the between-individual differences are constantly fixed effects conducted in a random effects model. The fixed (between-individual) effects have been calculated while allowing for the random (within-individual) effects. If this is not conducted and there are random effects, the standard errors are then likely to be incorrect.

Additionally, the univariate and the multivariable multilevel regression models have been tested for random effects of study wave (time) to investigate for possible dependence and correlation. The results indicated that study wave was not significant and therefore, has been modeled as a fixed effect variable. Moreover, study wave has been further tested as a categorical variable through a likelihood ratio-test, and the results have indicated that it has a linear association.

3.18.2 Univariate multilevel regression modeling

Prior to modeling multivariable multilevel regressions, this study has performed univariate multilevel regressions. The multilevel regression modeling has been carried out using the function multilevel mixed-effects models in Stata.

The statistical level of significance for this study's analysis has been set at .05, and thus, the stated confidence level and intervals (CI) are 95 percent.

The aim of the univariate multilevel regressions has been to investigate each of the study variables' association with entrepreneurial growth effort intensity (outcome variable). These models provide a regression coefficient (β) for each univariate regression which indicates the change in average entrepreneurial growth effort intensity for each unit change in each variable.

This association may be statistically significant depending on the *p*-value. The ICC for each association measures the reliability of measurements for clusters, thus, an ICC value close to one indicates a high similarity between values from the same group.

3.18.3 Multivariable multilevel regression modeling

This study has conducted two separate multivariable multilevel regression models. The first model includes all the study variables, and the second model excludes the two intention variables (goal intention and venture growth intention). The intention variables have been excluded in the second model as these variables had less frequent repeated measures (three waves), thus, creating missing values.

As missing values affect the model, they have been eliminated in order to further investigate associations with entrepreneurial growth effort intensity. Please see Chapter 4: Results and Analysis for details of the comparison between these two models. As all study variables which include both continuous and categorical have been entered simultaneously, the association for each variable with entrepreneurial growth effort intensity has been adjusted for all other variables.

3.18.4 Centring in multilevel regression modeling

Multilevel regression modelling has an additional consideration in terms of how the independent variable scores are used within the model, through the use of the centring approach. In general, there are two different ways in which the variable means can be assessed: one way is the grand mean or the average of all the observations, and the second way is the person mean, which is an individual-level estimate representing the average of each participant's scores for that particular Level one variable. Therefore, there are two available options for researchers when conducting multilevel models: grand mean and person mean centring (Dimotakis et al., 2013).

Grand mean centring requires subtracting the grand mean from each score and can be useful when conducting same-level moderation analyses (Aiken, West and Reno, 1991). Person mean centring requires subtracting the individual participant's mean from each of their observations, which may result in changes in the variables linear ordering. As a result, person mean centring produces a score that is either higher or lower than the one each participant reported on average.

Person mean centred models also vary in another fundamental way; in that they produce estimates which reflect purely within-individual processes. This centring

type removes all between-person variance from the predictor variables (as the centring results in distributions of scores which all have a mean score of zero for each participant). Even though, this has the advantage of avoiding confounding caused by differences among the individuals (such as personality), the interpretation of the results is different in comparison to grand mean centred (or uncentred) models. Therefore, person centring may not be appropriate for all research questions (Dimotakis et al., 2013).

In this study, the variable means have been based on the individual (person) mean centring, representing the average of each participant's scores for each of the study's variables. Thus, all multilevel regression models have incorporated the person mean.

3.19 Considerations for moderation and mediation

There are some issues which are relevant to moderation and mediation analyses that need to be considered and addressed in multilevel modeling. For moderation analyses, within-individual research questions can also relate to the moderating role of a Level one variable on the effects of another Level one variable, and the same may apply to moderation effects within a higher analysis level. Such analyses can be conducted as with OLS regression approaches, with either grand or person mean centring (or when appropriate a combination of the two) (Krull and MacKinnon, 2001), depending on the research question being investigated.

For mediation analyses, the sets of analyses to be conducted in order to test for mediation in a multilevel setting are similar to single level analyses, therefore, approaches can be used to also test for cross-level mediation (to test whether the effects of a between person variable on a Level one outcome are partially or fully mediated through a Level one variable). However, there are some statistical issues which need to be taken into consideration in within-person mediation results, as some traditional single level mediation analysis tools, for example the Sobel test (Sobel, 1982) either show low levels of power or provide inaccurate results when used to assess outcomes from multilevel models (Krull and MacKinnon, 1999). At the data analysis stage, these issues need to be considered.

3.19.1 Using interactions for moderating effects

In order to investigate the moderating effects of goal intention and strength on the association between implementation intention and venture goal commitment with

entrepreneurial growth effort intensity, interactions have been applied in the multilevel regression models with within-individual random effects.

The goodness-of-fit for both interaction terms have been assessed using likelihood-ratio test which is based on the ratio of likelihoods between the models. Furthermore, Wald test has been applied to assess the overall model goodness of fit to determine if the interactions in the model were statistically significant.

3.19.2 Multilevel structural equation modeling for estimating mediation

Structural equation modeling (SEM) estimates both the magnitude and significance of postulated causal connections between groups of variables by combining factor and path analysis, while accounting for measurement error in the modeling process (Schminkey et al., 2016).

In contrast to general linear modeling, multilevel structural equation modeling (MSEM) is able to deal with non-linear data. In MSEM, the connections that are evaluated are between clustered sets of data, rather than just between variables on the same level. Muthén, Kaplan and Hollis (1987) explain that MSEM consists of many advantages in comparison to conventional methods for managing missing data. The main advantage is that MSEM allows for the accommodation of measurement error as well as the use of latent variables (variables that are not measured but instead are constructed from other variables) with multiple indicators. Furthermore, MSEM manages missing data in the structural model in a way which standard multilevel modeling is not able to (Schminkey et al., 2016).

This study has conducted MSEM for estimating the mediation of implementation intention and venture goal commitment on the relationship between intentions and entrepreneurial growth effort intensity. The SEM builder has been used to build the mediation models in Stata, in order to calculate estimations for the direct path coefficients, means, and variances for the independent variables, mediating variables and outcome variable. Following this, the indirect effects (mediation) and total effects (direct effects plus indirect effects) coefficients were obtained. The mediating effect has been assessed based on its *p*-value. Additionally, to assess the goodness-of-fit, R-squared has been used to indicate the percentage of the variance in the model's dependent variable that the independent variable explains collectively.

The conceptual framework developed demonstrating the moderating and mediation effects is shown in Figure 2-5 in Chapter 2: Literature Review.

3.19.3 Maximum likelihood estimation

Maximum likelihood estimation (MLE) is a highly effective approach for managing missing data (Allison, 2012). In comparison to imputation methods, it does not substitute a value for missing data points. Instead, it uses parameter estimation based on the existing data, which is enhanced with information from probability models. MLE aims to provide the best solution to a problem, as well as an estimate of the solution's accuracy. The best solution is considered as one that is the most optimal and sufficient (Aldrich, 1997).

MLE is a method used for seeking for the most likely values of parameters such as means or regression coefficients which would generate observed data. Originally, these methods were developed to be used with data which are at least MAR, however, MLE techniques can also be used for data which do not meet multivariate normality assumptions (Allison, 2012). Thus, the SEM builder used in Stata has used maximum likelihood estimation in building the models for estimating the mediations.

3.20 Assumptions of linear regression

To justify the use of linear regression models, this study has tested three main assumptions: (1) the normal distribution of the residuals, (2) homoscedasticity (constancy of variance), and (3) linearity of the association between the continuous explanatory variables and the outcome.

The residual plot has been used to demonstrate that the points are randomly dispersed, therefore, signifying that a linear regression model is appropriate for this data. To test for heteroskedasticity, The Breusch-Pagan test has been used, however, it must be noted that a weakness of this test is that it assumes that the heteroskedasticity is a linear function of the independent variable. Thus, failing to find evidence of heteroskedasticity with this test does not necessarily mean a nonlinear relationship between the independent variable and the error variance.

Additionally, Q-Q (quantile-quantile) plot has been used to graphically check that the model residuals were normally distributed as one of the predictions of using linear regression. A test of normality of the residuals has been applied using a combined test for skewness and kurtosis (D'agostino, Belanger and D'Agostino Jr, 1990), implemented by Stata's sktest (Stata.com, 2020) with an adjustment by Royston (1992), which makes it more statistically sound. The sktest tests for normality based on skewness and based on kurtosis, then combines the two tests into an overall test

statistic. Further graphical testing has included Locally Weighted Scatterplot Smoothing (Lowess) plot to check the linearity of the relationship between the variables.

3.21 Chapter conclusion

This chapter has explained experience sampling methodology (ESM) which has been implemented for this study. The latest technology available for ESM is smartphone-based which has been applied. This methodology contributes to process-oriented research through repeated measures of the study's constructs. ESM allows to investigate dynamic constructs which fluctuate over time. Thus, have captured and measured the study's dynamic variables and their effect on entrepreneurial growth effort intensity.

Furthermore, the analysis conducted has been discussed which consists of multilevel regression modeling including structural equation modeling (SEM). This analytical technique is appropriate for clustered data. Additionally, the missing data in this study has been investigated to provide further understanding on this methodology, as the majority of prior ESM studies have not been reporting or investigating missing data (Carter, 2016). Investigating missing data is particularly important in ESM studies as they are highly susceptible to the occurrence of missing data. This is due to participants completing the survey questionnaires unsupervised for several times a day, while performing their daily routine. Thus, through understanding the missing data patterns, it may result in more effective scheduling of questionnaires to increase the participant response rate.

The challenges and limitations faced in this study regarding this methodology have been identified and discussed, to provide insight for future research implementing this latest technology in ESM.

The following chapter is Chapter 4: Results and Analysis.

Chapter 4: Results and Analysis

4.1 Chapter introduction

This chapter discusses the results and analysis conducted for this study. Figure 4-1 illustrates the chapter structure. This chapter begins with providing an overall summary of the statistics for the ESM data, which has resulted in 1,955 data points from 19 early-stage entrepreneurs. The missing data has been analysed through investigating item nonresponse and moment nonresponse. Additionally, for further insight into the missing data, a Pearson's Chi-square Test has been applied for each of the study variables, to investigate the association between the proportion of missing values and study wave. The results of Cronbach's alpha (α) applied for the variable scales is further discussed.

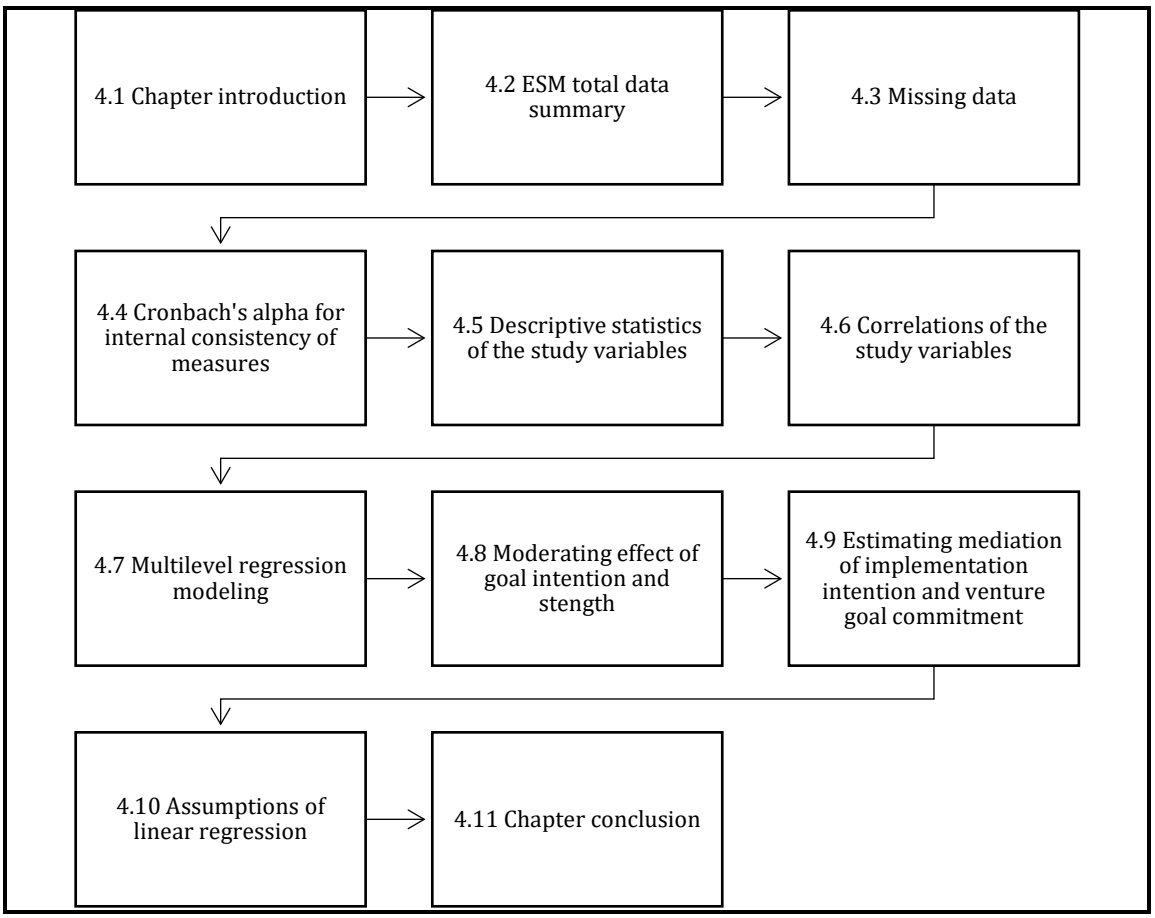
The descriptive statistics of the variables are provided and explained, which have been divided into two groups: continuous variables and categorical variables. Moreover, the correlations between the variables are discussed, which have been calculated using Pearson's Product-Moment Correlation (r).

The analysis for this study has been conducted in the statistical program Stata version 16.0. The building up of the multilevel regression models has been in two stages. The first stage is univariate regressions to investigate direct associations, and the second stage is multivariable regressions with all the study variables being adjusted for. This has allowed for controlling for potential effects of relevant variables on the outcome variable entrepreneurial growth effort intensity (EGEI).

There have been two main objectives in this study. The first objective has been to assess the moderating effect of goal intention and strength on the impact of implementation intention and venture goal commitment on EGEI. The second objective has been to assess the mediation of implementation intention and venture goal commitment on the effects of goal intention and strength and venture growth intention on EGEI. The results of these investigations are illustrated and explained.

The statistical level of significance for this study has been set at .05; therefore, the stated confidence level and intervals are 95% unless otherwise stated.

Figure 4-1: Results and analysis chapter structure



4.2 ESM total data summary

As previously discussed in Chapter 3: Methodology, in ESM studies due to multiple observations taken across a period, the total sample size N no longer represents just the number of participants. Instead, N is divided into three levels: the number of participants n_3, the number of consecutive days n_2, and the number of measurements within days n_1, resulting in $N = n_1$, x n_2 x n_3. Thus, the total sample size N for this study is: 19 x 6 x 4 = 456

Table 4-1 provides the total data summary for this study. In total, 3888 (144 prompt notifications x 27 participants) notification prompts were scheduled and sent out. The difference between the total number of notification prompts sent out, and the total number of notification prompts received by the participants (2069) is mainly due to technological failures. As previously mentioned in Chapter 3: Methodology, this ESM study has been designed with an intense frequency of notification prompts per day (x 4) as the number of items in the validated scales have not been reduced, to maintain the reliability of the measurements. As a result, there has been a reduction

in the number of responses from the participants throughout this study which has been as per expected.

The notification prompts have included both close-ended and open-ended questions. The open-ended responses have been excluded for the quantitative multilevel regression modeling and analysis; thus, have been analysed separately, please see Chapter 5: Discussion, Recommendations, and Conclusion. As previously mentioned, the total number of received notification prompts, including open-ended questions is 2069, and the total number of received notification prompts excluding open-ended questions is 1968. The percentage of overall response rate is 53.22%.

Participants with valid responses of at least one-third (1/3 x 144 notification prompts) of the total ESM survey have been included. Therefore, participants who did not provide a minimum of 48 reports/responses were not included in the analysis, thus, resulting in excluding a total of 114 data points/responses. As a result, there were 19 out of 27 participants in the final sample (eight participants responded less than 48 reports) providing a total of 1955 valid responses (94.49% of received notification prompts). The participants included in the final sample showed the highest valid report of 85.42% (123 out of 144) and the lowest valid report of 43.75% (63 out of 144).

Table 4-1: ESM total data summary

Statistic	Description
19	Participants in the final sample
1,955	Valid responses received
3,888	Notification prompts scheduled and sent out
2,069	Received notification prompts (includes open-ended questions)
1,968	Received notification prompts (excludes open-ended questions)
114	Total number of excluded data points
53.22%	Percentage of overall response rate
94.49%	Percentage of valid response rate from received notification prompts

4.3 Missing data

Missing data has been reported on two levels: item nonresponse and moment nonresponse. Item nonresponse refers to missing data at the item level, which is the proportion of uncompleted questions within a diary. A diary consists of a total of 144 items/questions which were sent out to each participant. Item nonresponse is expressed as average item nonresponse, which describes the average proportion of missed items within a diary.

Moment nonresponse refers to missing data at the moment level, which is the proportion of uncompleted diaries. Moment nonresponse is expressed in terms of total moment nonresponse. The definition of moment nonresponse is explained to be dependent on what is considered to be a 'completed' diary (Carter, 2016). In line with ESM experts' recommendations (e.g., Hektner et al., 2007), a completed diary has been considered as having completed at least one-third of the total ESM items, which is a minimum of 48 items (1/3 of 144 items). As previously mentioned, there have been eight participants who completed less than 48 items, and thus, were excluded in the analysis.

4.3.1 Item nonresponse

As mentioned previously, each ESM diary consists of 144 items. These items are combined to create the measures for this study's variables of interest that are being investigated. As these total measures are of main interest rather than the individual component items, item nonresponse is defined as an incomplete measure rather than its component questions.

It should be noted, that as measures have been calculated as the pro-rated mean of the item scores, only half of the items per measure were required to generate a mean score. Thus, making it possible for a measure to be considered as 'complete' while some of its component items are missing.

Furthermore, the item responses for each variable have been averaged per wave per participant. The responses for the variables entrepreneurial growth effort intensity, implementation intention and venture goal commitment have been averaged at each six waves. The responses for the variables goal intention and venture growth intention have been averaged at each three waves. Thus, the analysis for this study is conducted on the averaged values for each variable.

Table 4-2 illustrates the proportion of missing data for the final sample of 19 participants for the ESM variables being investigated, conditional on the momentary response, and that at least 48 items have been completed over the entire sampling period. Each column displays the percentage of missing data for each variable at each time point (wave) across a diary. The percentages represent the proportion of missing data at each wave, conditional on the diary having been considered as 'complete'. Carter (2016) explains that this tabular representation can be used to make a comparison of nonresponse across all the variables of interest, and to examine specific patterns, as well as investigating any trends in missing data.

Prior to explaining the proportion of ESM missing data in detail, it should be noted that as previously mentioned, the two intention variables (goal intention and venture growth intention) have been measured once at the beginning of each month, in comparison to the remaining three variables which have been measured twice per month. Thus, there is a separate discussion on the percentages of missing data for these two intention variables at the end of this section.

The results indicate that in wave one, the percentage of missing data for all the first three variables has been 0.00. This result is as per expected as at the beginning of the study participants are highly motivated and therefore, respond to most or all of the notification prompts. In wave two, only the variable implementation intention had a percentage of missing data (11.76%). In wave three, entrepreneurial growth effort intensity had the highest percentage of missing data (19.05%). Implementation intention and venture goal commitment also had a relatively high percentage of missing data (11.76% and 11.11% respectively). In wave four, the percentage of missing data was low for entrepreneurial growth effort intensity (4.76%). In comparison, the percentage of missing data was relatively high for both implementation intention and venture goal commitment (11.76% and 11.11% respectively). In waves five and six, all three variables displayed high percentages of missing data. Furthermore, all three variables displayed the highest percentages of missing data in wave six: entrepreneurial growth effort intensity (42.86%), implementation intention (41.18%) and venture goal commitment (44.44%).

In conclusion, the results indicating high percentages of missing data in wave five and wave six are as per expected and in line with Dimotakis et al. (2013) discussions on ESM challenges faced due to longer study periods.

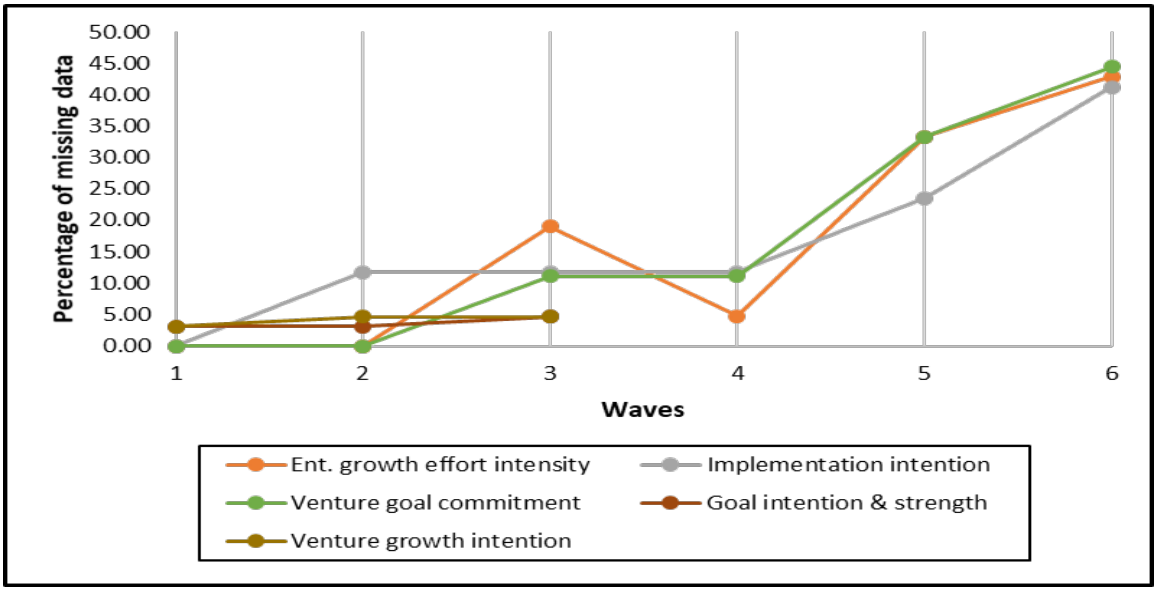
The two intention variables displayed a similar pattern, as wave three had the highest percentage of missing data for goal intention and strength (4.69%). For venture growth intention wave two and wave three indicated higher percentages of missing data (4.62% each).

Table 4-2: Percentage missing data conditional on momentary response with at least 48 items completed

	Waves	1	2	3	4	5	6
	Item nonresponse (%)						
1	Entrepreneurial growth effort intensity	0.00	0.00	19.05	4.76	33.33	42.86
2	Implementation intention	0.00	11.76	11.76	11.76	23.53	41.18
3	Venture goal commitment	0.00	0.00	11.11	11.11	33.33	44.44
4	Goal intention & strength	3.13	3.13	4.69			
5	Venture growth intention	3.08	4.62	4.62			

Figure 4-2 provides a graphical representation of the percentage of missing data for each of the study variables from wave one through to wave six. In conclusion, the percentage of missing data has increased in wave six, which is the final wave of data collection, primarily due to participant fatigue, and secondary factors such as technological failures.

Figure 4-2: Percentage item nonresponse at each study wave



4.3.2 Moment nonresponse

Moment nonresponse has been classified as more than 96 items of the diary being incomplete, and thus, classifying the diary as incomplete.

Between-subject variation in moment nonresponse was high, ranging from 98 to 144 (100%) missed items from the total of 144 intended entries per participant. As mentioned previously, the total number of data points excluded from the analysis is 114, due to the eight incomplete diaries.

As illustrated in Table 4-3, the mean for the number of items completed among these eight participants with incomplete diaries is 21.63, which is extremely low. The number of item responses ranged from zero to 46. Further insight on moment nonresponse confirms that the eight participants who were excluded from the analysis, collectively did not provide a significant contribution to the overall investigation of the variables of interest.

Table 4-3: Descriptive statistics for incomplete diaries

	Observations	Mean	Std. Dev	Min	Max
Incomplete diaries	8	21.63	18.24	0	46

Notes: Std. Dev = Standard deviation

4.3.3 Pearson's Chi-square test for missing data

For further investigation and insight into missing data, a Pearson's Chi-square Test has been conducted for each of the study variables, to analyse the association between the proportion of missing values and study wave.

Table 4-4 indicates the results for this Pearson's Chi-square test for the association between the proportion of missing values and study wave for the variable entrepreneurial growth effort intensity. Pearson's Chi-square Test gave a *p*-value <.0005 indicating an association between wave and missing entrepreneurial growth effort intensity data.

Furthermore, close inspection indicates that there were higher than expected percentage of missing values in wave three (21.05%), wave five (36.84%), and wave

six (47.37%), and lower than expected percentage of missing values in wave one (0.00%), wave two (0.00%) and wave four (5.26%).

Table 4-4: Pearson's Chi-square test for proportion of missing values for entrepreneurial growth effort intensity

Waves	1	2	3	4	5	6	Total
Missing	0	0	4	1	7	9	21
	3.5	3.5	0.1	1.8	3.5	8.6	21.0
	0.0	0.0	21.05	5.26	36.84	47.37	18.42
Non-missing	19	19	15	18	12	10	93
	0.8	0.8	0.0	0.4	0.8	2	4.7
	100	100	78.95	94.74	63.16	52.63	81.58
Total	19	19	19	19	19	19	114
	4.3	4.3	0.1	2.2	4.3	10.6	25.7
	100	100	100	100	100	100	100

Pearson Chi2 = 25.7419	**Degrees of freedom (*df*) = 5**	***p*-value = 0.000**

Key:
frequency
chi2 contribution
column percentage

Table 4-5 indicates the results for the Pearson's Chi-square Test for the association between the proportion of missing values and study wave for the variable implementation intention. Pearson's Chi-square Test gave a p = .035 indicating an association between wave and missing implementation intention data.

The results indicate that there were higher than expected percentage of missing values in wave five (21.05%) and wave six (36.84%) and lower than expected percentage of missing values in wave one (0.00%), wave two, wave three, and wave four (10.53% each).

Table 4-5: Pearson's Chi-square test for proportion of missing values for implementation intention

Waves	1	2	3	4	5	6	Total
Missing	0	2	2	2	4	7	17
	2.8	0.2	0.2	0.2	0.5	6.1	10.2
	0.00	10.53	10.53	10.53	21.05	36.84	14.91
Non-missing	19	17	17	17	15	12	97
	0.5	0.0	0.0	0.0	0.1	1.1	1.8
	100	89.47	89.47	89.47	78.95	63.16	85.09
Total	19	19	19	19	19	19	114
	3.3	0.3	0.3	0.3	0.6	7.2	12.0
	100	100	100	100	100	100	100

Pearson Chi2 = 11.9600	**Degrees of freedom (*df*) = 5**	***p-value = 0.035***

Key:
frequency
chi2 contribution
column percentage

Table 4-6 indicates the results for the Pearson's Chi-square Test for the association between the proportion of missing values and study wave for the variable venture goal commitment. Pearson's Chi-square Test gave p = .082. Therefore, there was no statistical evidence for differences in the percentage of missing values for venture goal commitment over the six waves.

The results indicate that there were higher than expected percentage of missing values in wave five (15.79%) and wave six (21.05%) and lower than expected percentage of missing values in wave one and wave two (0.00% each). However, these results did not reach statistical significance.

Table 4-6: Pearson's Chi-square test for proportion of missing values for venture goal commitment

Waves	1	2	3	4	5	6	Total
Missing	0	0	1	1	3	4	9
	1.5	1.5	0.2	0.2	1.5	4.2	9.0
	0.00	0.00	5.26	5.26	15.79	21.05	7.89
Non-missing	19	19	18	18	16	15	105
	0.1	0.1	0.0	0.0	0.1	0.4	0.8
	100	100	94.74	94.74	84.21	78.95	92.11
Total	19	19	19	19	19	19	114
	1.6	1.6	0.2	0.2	1.6	4.5	9.8
	100	100	100	100	100	100	100

Pearson Chi2 = 9.7714	**Degrees of freedom (*df*) = 5**	***p*-value = 0.082**

Key:
frequency
chi2 contribution
column percentage

Table 4-7 indicates the results for the Pearson's Chi-square Test for the association between the proportion of missing values and study wave for the variable goal intention and strength. Pearson's Chi-square Test gave $p = .850$. Therefore, there was no statistical evidence for differences in the percentage of missing values for goal intention and strength over the three waves.

Close examination indicates that there were higher than expected percentage of missing values in wave three (15.79%). However, these results did not reach statistical significance.

Table 4-7: Pearson's Chi-square test for proportion of missing values for goal intention and strength

Waves	1	2	3	Total
Missing	2	2	3	7
	0.0	0.0	0.2	0.3
	10.53	10.53	15.79	12.28
Non-missing	17	17	16	50
	0.0	0.0	0.0	0.0
	89.47	89.47	84.21	87.72
Total	19	19	19	57
	0.1	0.1	0.2	0.3
	100	100	100	100

Pearson	Degrees of	*p*-value
Chi2 = 0.3257	**freedom (*df*) = 2**	**= 0.850**

Key:
frequency
chi2 contribution
column percentage

Table 4-8 indicates the results for the Pearson's Chi-square Test for the association between the proportion of missing values and study wave for the variable venture growth intention. Pearson's Chi-square Test gave p = .865. Therefore, there was no statistical evidence for differences in the percentage of missing values for venture growth intention over the three waves.

Close examination of the results indicates that there were lower than expected percentage of missing values in wave one (10.53%). However, these results did not reach statistical significance.

Table 4-8: Pearson's Chi-square test for proportion of missing values for venture growth intention

Waves	1	2	3	Total
Missing	2	3	3	8
	0.2	0.0	0.0	0.3
	10.53	15.79	15.79	14.04
Non-missing	17	16	16	49
	0.0	0.0	0.0	0.0
	89.47	84.21	84.21	85.96
Total	19	19	19	57
	0.2	0.0	0.0	0.3
	100	100	100	100

Pearson	Degrees of	*p*-value
Chi2 = 0.2908	**freedom (*df*) = 2**	**= 0.865**

Key:
frequency
chi2 contribution
column percentage

4.4 Cronbach's alpha for internal consistency of measures

Cronbach's alpha (α) (α = .65, α = .92, α = .82) indicated that the internal consistency of the scales for entrepreneurial growth effort intensity 95% CI (.499, .763), implementation intention 95% CI (.878, .958) and venture goal commitment 95% CI (.747, .868) respectively, was good.

Additionally, for each measure, a test was conducted to investigate if the effects of removing an item from the scale would strengthen the reliability of the measure. The results for the implementation intention measure indicated that by removing the first item, it would increase to α = .94. The results for the venture goal commitment measure indicated that by removing item nine, it would increase to α = .84.

Cronbach's α (α = .45) 95% CI (.230, .742) for goal intention and strength scale was low. Most likely, due to the low number of observations as the measurements for this variable were taken less frequently, as discussed earlier in this chapter. Cronbach's α could not be calculated for the venture growth intention scale as only one out of three items in this scale provided a Likert scale, and a minimum of two items are required to conduct the Cronbach's α test.

4.5 Descriptive statistics of the study variables

Table 4-9 illustrates the descriptive statistics for the study's continuous variables. The entrepreneurial growth effort intensity scale consisted of three questions, with each question providing a scale between one to five, which is represented by the minimum and maximum columns in this table. The mean for responses for this variable is 3.72, representing responses on the scale between 'none' and 'some'.

The implementation intention scale consisted of three questions with each question, providing a scale between one to four. The mean for responses for this variable is 2.70, representing responses between 'not true' and 'a little true'.

The venture goal commitment scale consisted of twelve questions, representing six subcategories (determination, urgency, willingness, opportunity, control, and support) with each question providing a scale between one to five. The mean for responses for this variable is 3.18, representing responses between 'neither agree nor disagree' and 'agree'.

The goal intention and strength scale consisted of two questions, with each question providing a scale between one and two. The first question measures goal intention towards venture growth tasks, and the second question measures the strength of goal intention for participants who expressed they do possess the intention. The mean for responses for this variable is 1.74.

The venture growth intention scale consisted of three questions. The first question provides a scale between one and four on venture growth intention for the next month. The remaining two questions are opened-ended and require participants to expand on their venture growth intention. The mean for the first question is 1.96, which indicates responses for 'grow moderately'.

The participants' age ranges from 26 to 48 years old, with a mean of 38.11. The majority (63.16%) of the participants have no prior entrepreneurial experience, while seven (36.84%) participants reported to have prior entrepreneurial experience. From the seven participants who have prior entrepreneurial experience, the number of years of experience ranges from three to 20 years, with a mean of 7.29 years.

Table 4-9: Descriptive statistics of continuous variables

	Variable	M	SD	Min	Max	Frequency	Percentage
1	Entrepreneurial growth effort intensity	3.72	0.92	1	5	n/a	n/a
						n/a	n/a
2	Implementation intention	2.70	0.86	1	4	n/a	n/a
						n/a	n/a
3	Venture goal commitment	3.18	0.40	1	5	n/a	n/a
						n/a	n/a
4	Goal intention & strength	1.74	0.37	1	2	n/a	n/a
						n/a	n/a
5	Venture growth intention	1.96	0.61	1	3	n/a	n/a
6	Age						
	26, 32, 33, 34, 36, 38, 42, 44, 45, 46, 48;	38.11	6.00	26	48	1	5.26
	30, 37, 40, 43					2	10.53
7	Years of entrepreneurial experience	7.29	5.46	3	20		
	3, 6, 20;					1	14.29
	4, 7					2	28.57

Notes: **M and SD are used to represent mean and standard deviation, respectively.**

Table 4-10 illustrates the descriptive statistics for the study's categorical variables. In the final sample for this study, there were 12 female and seven male participants. The minimum level of education among all the participants is associate degree or equivalent. One participant (or 5.26% of the total participants) had an associate degree or equivalent, nine participants (47.37%) had a bachelor's degree or equivalent, seven participants (36.84%) had a master's degree or equivalent, and two participants (10.53%) had a doctorate or equivalent.

The majority (52.63%) of the participants responded that both parents are not self-employed, while 21.05% of participants informed that one parent is self-employed, and a further 26.32% of participants informed that both parents are self-employed.

Participants have been asked about the type of their business activity. Results indicate that 10.53% of the participants have part-time businesses, 10.53% have a sole proprietorship employing only the founder, the majority (47.37%) of the participants have a small business employing a few people, while a further 31.58% have a business into which the aspiring entrepreneur intends to invest for growth.

Additionally, participants have been asked to provide the country in which they operate most of their business. The majority (52.63%) of the participants operate their business in Australia, 42.11% operate their business in Brazil, while a further 5.26% of the participants operate their business in the United States of America.

Table 4-10: Descriptive statistics of categorical variables

	Variable	Frequency	Percentage
1	Gender		
	1 = female;	12	63.16%
	0 = male	7	36.84%
2	Completed educational level		
	1 = high school degree or equivalent;		
	2 = associate degree or equivalent;	1	5.26%
	3 = bachelor's degree or equivalent;	9	47.37%
	4 = master's degree or equivalent;	7	36.84%
	5 = doctorate or equivalent	2	10.53%
3	Prior entrepreneurial experience		
	1 = yes;	7	36.84%
	2 = no	12	63.16%
4	Parents' entrepreneurial background		
	1 = both parents are not self-employed;	10	52.63%
	2 = one parent is self-employed;	4	21.05%
	3 = both parents are self-employed	5	26.32%
5	Business activity type		
	1 = part-time business;	2	10.53%
	2 = sole proprietorship employing only the founder;	2	10.53%
	3 = small business employing a few people;	9	47.37%
	4 = business into which the aspiring entrepreneur intends to invest for growth	6	31.58%
6	Country of operation		
	1 = Australia;	10	52.63%
	2 = USA;	1	5.26%
	3 = Brazil	8	42.11%

4.6 Correlations of the study variables

Table 4-11 illustrates the correlation matrix for the study's continuous variables using Pearson's Product-Moment Correlation (r). This matrix also includes the *p*-value from a two-tailed test for each correlation, which is presented in square brackets.

The results illustrate that ten correlations were statistically significant. There was a moderate positive linear relationship between entrepreneurial growth effort intensity and implementation intention (r(N87) = .51, $p < .001$). There was a weak positive linear relationship between implementation intention and venture goal

commitment (r(97) = .33, $p < .001$). The correlations of entrepreneurial growth effort intensity with goal intention and strength showed a moderate positive linear relationship (r(47) = .49, $p < .001$). There was a weak negative linear relationship between entrepreneurial growth effort intensity and venture growth intention (r(46) = -.32, $p = .03$). There was a moderate negative linear relationship between implementation intention and venture growth intention (r(47) = -.45, $p < .001$). The correlations of venture goal commitment with venture growth intention showed a weak negative linear relationship (r(49) = -.35, $p = .01$). There was a moderate negative linear relationship between goal intention and strength and venture growth intention (r(49) = -.46, $p < .001$). There was a weak positive linear relationship between entrepreneurial growth effort intensity and age (r(93) = .21, $p = .04$). The correlations of age with years of entrepreneurial experience showed a strong positive linear relationship (r(42) = .71, $p < .001$).

Table 4-11: Correlation matrix of the study variables

	Variable	1	2	3	4	5	6	7
1	Entrepreneurial growth effort intensity	1.00						
2	Implementation intention	0.51	1.00					
		[0.00]* **						
3	Venture goal commitment	-0.04	0.33	1.00				
		[0.70]	**[0.00]*** **					
4	Goal intention & strength	0.49	0.28	-0.04	1.00			
		[0.00]* **	**[0.05]* **	[0.79]				
5	Venture growth intention	-0.32	-0.45	-0.35	-0.46	1.00		
		**[0.03]* **	**[0.00]*** **	**[0.01]** **	**[0.00]*** **			
6	Age	0.21	0.14	-0.06	0.10	-0.12	1.00	
		**[0.04]* **	[0.18]	[0.53]	[0.50]	[0.41]		
7	Years of entrepreneurial experience	0.24	-0.13	-0.03	-0.18	0.16	0.71	1.00
		[0.17]	[0.44]	[0.84]	[0.48]	[0.53]	**[0.00]*** **	

Notes: Values in square brackets indicate the *p*-value for each correlation.
**P < .05*; ***P < .01*; ****P < .001*

4.7 Multilevel regression modeling

The following section provides the results of the multilevel regression models which have been applied. For categorical variables, dummy variables were used to assess average differences in the outcome between the levels using the base level as reference (Ref).

The first part is univariate regressions to investigate direct associations, and the second part is multivariable regressions with all the study variables being adjusted for. Thus, controlling for potential effects of relevant variables on entrepreneurial growth effort intensity.

Additionally, the univariate and the multivariable regression models were tested for random effects of within-person and study wave (time).

4.7.1 Univariate multilevel regressions

Table 4-12 illustrates the results of each univariate regression and its association with the outcome variable entrepreneurial growth effort intensity (EGEI). As there has been multiple measurements for each participant, the regression model has incorporated the possible dependence between responses from a participant. Thus, have applied a multilevel regression which has allowed for random effects within a participant. The univariate multilevel regression models showed that within-person random effect was statistically significant for all the variables, except for goal intention and strength, venture growth intention, and years of entrepreneurial experience as per the *p*-value provided in the last column in

Table 4-12.

The results of the univariate regressions revealed the following statistically significant unadjusted associations with EGEI:

- Implementation intention had a statistically significant positive association with EGEI, coefficient (β) = .487, $p < .001$ 95% CI (.236, .737) with intraclass correlation coefficient (ICC) = .239. The correlation within person was statistically significant $p = .0051$.
- Venture goal commitment was negatively associated with EGEI, β = -.371, $p = .147$ 95% CI (-.872, .130) with ICC = .427. The correlation within person was statistically significant $p < .00005$.
- Goal intention and strength had a statistically significant positive association with EGEI, β = 1.072, $p < .0005$ 95% CI (.478, 1.666) with ICC = .250.
- Venture growth intention had a statistically significant negative association with EGEI, β = -.468, $p = .021$ 95% CI (-.867, -.069) with ICC = .264.
- Females in comparison to males was negatively associated with EGEI, β = -.325, ICC = .387 (-.925, .274), $p = .287$. The correlation within person was statistically significant $P < .00005$.
- Age was positively associated with EGEI, β = .031, $p = .206$ 95% CI (-.017, .078) with ICC = .378. The correlation within person was statistically significant $p = .0427$.

- Participants with a Bachelor's degree or equivalent was negatively associated with EGEI, β = -.180, *p* = .785 95% CI (-1.474, 1.114), a Master's degree or equivalent was negatively associated, β = -.564, *p* = .400 95% CI (-1.877, .749), and a Doctorate or equivalent was positively associated, β = .140, *p* = .855 95% CI (-1.360, 1.639) with ICC = .357. The correlation within person for completed education level was statistically significant *p* < .00005.
- Participants with one parent is self-employed was negatively associated with EGEI, β = -.486, *p* = .178 95% CI (-1.194, .221), and with both parents are self-employed was also negatively associated β = -.393, *p* = .250 95% CI (-1.062, .277) with ICC = .375. The correlation within person for parents' entrepreneurial background was statistically significant *p* < .00005.
- Participants with no prior entrepreneurial experience was positively associated with EGEI, β = .151, *p* = .629 95% CI (-.461, .763) with ICC = .401. The correlation within person was statistically significant *p* < .00005.
- Years of entrepreneurial experience was positively associated with EGEI, β = .035, *p* = .283 95% CI (-.029, .100) with ICC = .155.
- Participants with a sole proprietorship employing only the founder was positively associated with EGEI, β = .209, *p* = .612 95% CI (-.598, 1.015), a small business employing only a few people was had a statistically significant positive association β = 1.199, *p* < .0005 95% CI (.547, 1.850), and a business into which they intend to invest for growth also had a statistically significant positive association β = 1.491, *p* < .0005 95% CI (.800, 2.182) with ICC = .131. The correlation within person for business activity type was statistically significant *p* = .0457.
- Participants operating their business in USA was positively associated with EGEI, β = .719, *p* = .268 95% CI (-.552, 1.989), and operating in Brazil was also positively associated, β = .179, *p* = .562 95% CI (-.425, .782) with ICC = .381. The correlation within person for country of operation was statistically significant *p* < .00005.
- Study wave had a statistically significant negative association with EGEI, β = -.101, *p* = .022 95% CI (-.187, -.014). The correlation within person for study wave was statistically significant *p* < .00005.

Table 4-12: Results for univariate multilevel regressions for association with EGEI

	Variable	*B*	*SE*	*P*-value	95% Confidence interval	Intraclass correlation coefficient (ICC)	*P*-value
1	Implementation intention	0.487	0.128	< .0005	0.236, 0.737	0.239	0.0051
2	Venture goal commitment	-0.371	0.256	0.147	-0.872, 0.130	0.427	<.00005
3	Goal intention & strength	1.072	0.303	< .0005	0.478, 1.666	0.250	0.0626
4	Venture growth intention	-0.468	0.203	0.021	-0.867, -0.069	0.264	0.0569
5	Gender					0.387	<.00005
	male	Ref					
	female	-0.325	0.306	0.287	-0.925, 0.274		
6	Age	0.031	0.024	0.206	-0.017, 0.078	0.378	0.0427
7	Completed educational level					0.357	<.00005
	associate degree or equivalent	Ref					
	Bachelor's degree or equivalent	-0.180	0.660	0.785	-1.474, 1.114		
	Master's degree or equivalent	-0.564	0.670	0.400	-1.877, 0.749		
	Doctorate or equivalent	0.140	0.765	0.855	-1.360, 1.639		
8	Parents' entrepreneurial background					0.375	<.00005
	both parents are not self-employed	Ref					
	one parent is self-employed	-0.486	0.361	0.178	-1.194, 0.221		
	both parents are self-employed	-0.393	0.342	0.250	-1.062, 0.277		
9	Prior entrepreneurial experience					0.401	<.00005
	yes	Ref					
	no	0.151	0.312	0.629	-0.461, 0.763		
10	Years of entrepreneurial experience	0.035	0.033	0.283	-0.029, 0.100	0.155	0.1079
11	Business activity type					0.131	0.0457
	part-time business	Ref					
	sole proprietorship employing only the founder	0.209	0.412	0.612	-0.598, 1.015		
	small business employing a few people	1.199	0.332	< .0005	0.547, 1.850		
	business into which the aspiring entrepreneur intends to invest for growth	1.491	0.352	< .0005	0.800, 2.182		
12	Country of operation					0.381	<.00005
	Australia	Ref					
	USA	0.719	0.648	0.268	-0.552, 1.989		
	Brazil	0.179	0.308	0.562	-0.425, 0.782		
13	Study wave	-0.101	0.044	0.022	-0.187, -0.014	0.430	<.00005

Notes: B = regression coefficients (are unstandardized); SE = standard errors.

4.7.2 Multivariable multilevel regressions adjusted for all study variables

Table 4-13 illustrates the results of the multivariable multilevel regressions with all study variables and their associations with the outcome variable EGEI. As these variables were entered simultaneously, the association for each variable with EGEI is adjusted for all other variables.

The results showed that study wave is linear and not categorial, tested through a likelihood ratio-test p = .5409. As shown in Table 4-13, study wave as a fixed effect had a negative linear relationship with EGEI, β = -.053.

The results of the multivariable multilevel regressions indicated that three variables had a statistically significant association with EGEI:

- Implementation intention, adjusted for all other variables, was positively associated with EGEI, β = .482, *p* = .034 95% CI (.036, .927).
- Participants with Doctorate or equivalent completed level of education, adjusted for all other variables, was negatively associated with EGEI, β = -1.835, *p* = .015 95% CI (-3.307, -.363).
- Participants with one parent is self-employed was negatively associated with EGEI, β = -.726, *p* = .046 95% CI (-1.437, -.014).

With the multivariable regressions, the difference between participants was zero. The control variables prior entrepreneurial experience and years of entrepreneurial experience as expected were highly correlated. Therefore, the model rejected both variables for collinearity; thus, decided only to use prior entrepreneurial experience.

Table 4-13: Results for multivariable multilevel regressions for association with EGEI (includes variables goal intention & strength and venture growth intention)

	Variable	*B*	*SE*	*P* -value	95% Confidence interval
1	Implementation intention	0.482	0.227	0.034	.036, .927
2	Venture goal commitment	-0.549	0.454	0.227	-1.439, .342
3	Goal intention & strength	0.525	0.368	0.154	-.196, 1.245
4	Venture growth intention	-0.243	0.230	0.291	-.693, .208
5	Gender				
	male	Ref			
	female	0.178	0.374	0.633	-.554, .910
6	Age	-0.016	0.026	0.555	-.067, .036
7	Completed educational level				
	associate degree or equivalent	Ref			
	Bachelor's degree or equivalent	-1.117	0.699	0.110	-2.487, .253
	Master's degree or equivalent	-0.960	0.611	0.116	-2.157, .238
	Doctorate or equivalent	-1.835	0.751	0.015	-3.307, -.363
8	Parents' entrepreneurial background				
	both parents are not self-employed	Ref			
	one parent is self-employed	-0.726	0.363	0.046	-1.437, -.014
	both parents are self-employed	-0.322	0.515	0.532	-1.331, .687
9	Prior entrepreneurial experience				
	yes	Ref			
	no	-0.096	0.414	0.817	-.906, .715
10	Business activity type				
	part-time business	Ref			
	sole proprietorship employing only the founder	0.353	0.670	0.598	-.960, 1.666
	small business employing a few people	-0.041	0.471	0.931	-.964, .882
	business into which the aspiring entrepreneur intends to invest for growth	0.699	0.549	0.202	-.376, 1.775
11	Country of operation				
	Australia	Ref			
	USA	0.739	0.510	0.148	-.261, 1.738
	Brazil	0.181	0.440	0.681	-.682, 1.044
12	Study wave	-0.053	0.115	0.641	-.278, .171

Notes: B = regression coefficients (are unstandardized); SE = standard errors. The ICC for this multivariable model was zero.

4.7.3 Multivariable multilevel regressions excluding intention variables

Table 4-14 illustrates the results of the multivariable multilevel regressions with the exclusion of the variables goal intention and strength and venture growth intention as measurements for these have been taken for three study waves in comparison to six study waves, and therefore, show as missing values.

The results showed that five variables had a statistically significant association with EGEI:

- Implementation intention was positively associated with EGEI, β = .299, *p* = .039 95% CI (.015, .584).
- Participants with a Doctorate or equivalent completed level of education was negatively associated with EGEI, β = -.1.202, *p* = .049 95% CI (-2.401, -.003).
- Participants with one parent is self-employed was negatively associated with EGEI, β = -.605, *p* = .040 95% CI (-1.184, -.026).
- For business activity type, participants with small business employing a few people was positively associated with EGEI, β = .689, *p* = .030 95% CI (.068, 1.309). Participants with business into which the aspiring entrepreneur intends to invest for growth was also positively associated, β = 1.390, *p* < .0005 95% CI (.656, 2.124).
- Study wave was negatively associated with EGEI, β = -.089, *p* = .037 95% CI (-.172, -.005) with ICC = 0.

4.7.4 Comparison between the regressions

Comparison of the results of the multilevel regressions between univariate (model 1) and multivariable (with the exclusion of the intention variables) (model 2) revealed the following similarities and differences:

- Implementation intention had a statistically significant positive association with EGEI in both models, model 1, β = .487, model 2, β = .299.
- Age was positively associated in model 1, β = .031, and negatively associated in model 2, β = -.002.
- Doctorate or equivalent completed level of education was positively associated in model 1, β = .140 and had a statistically significant negative association in model 2, β = -1. 202, *p* = .049.

- One parent is self-employed was negatively associated in both models, model 1, β = -.486, model 2, β = -.605. The association was statistically significant in model 2 *p* = .040.
- For business activity type, participants with both small business employing a few people model 1, β = 1.199, model 2, β = .689 and business into which the aspiring entrepreneur intends to invest for growth model 1, β = 1.491, model 2, β = 1.390 had a statistically significant positive association in both models.
- Study wave had a statistically significant negative association in both models, model 1 β = -.101, model 2 β = -.089.

Comparison between the multivariable regressions, including the intention variables (model 1) and excluding the intention variables (model 2) revealed the following:

- Implementation intention had a statistically significant positive association in both models, model 1, β = .482, model 2, β = .299.
- Female participants was positively associated in model 1, β = .178 and was negatively associated in model 2, β = -.274.
- Doctorate or equivalent completed level of education had a statistically significant negative relationship in both models, model 1, β = -1.835, model 2, β = -1.202.
- Participants with one parent is self-employed had a statistically significant negative association in both models, model 1, β = -.726, model 2, β = -.605.
- Participants with no prior entrepreneurial experience was negatively associated in model 1, β = -.096 and positively associated in model 2, β = .390.
- Participants with small business employing a few people was negatively associated in model 1, β = -.041 and had a statistically significant positive relationship in model 2, β = .689. Business into which the aspiring entrepreneur intends to invest for growth was positively associated in model 1, β = .699 and had a statistically significant positive association in model 2, β = 1.390.
- Study wave was negatively associated in model 1, β = -.053 and had a statistically significant negative association in model 2, β = -.089.

Table 4-14: Results for multivariable multilevel regressions for association with EGEI (excludes variables goal intention & strength and venture growth intention)

	Variable	*B*	*SE*	*P* -value	95% Confidence interval
1	Implementation intention	0.299	0.145	0.039	.015, .584
2	Venture goal commitment	-0.522	0.280	0.062	-1.070, .027
3	Gender				
	male	Ref			
	female	-0.274	0.285	0.336	-.832, .284
4	Age	-0.002	0.018	0.899	-.037, .033
5	Completed educational level				
	associate degree or equivalent	Ref			
	Bachelor's degree or equivalent	-0.240	0.512	0.640	-1.244, .764
	Master's degree or equivalent	-0.549	0.451	0.223	-1.432, .334
	Doctorate or equivalent	-1.202	0.612	0.049	-2.401, -.003
6	Parents' entrepreneurial background				
	both parents are not self-employed	Ref			
	one parent is self-employed	-0.605	0.295	0.040	-1.184, -.026
	both parents are self-employed	-0.117	0.343	0.734	-.788, .555
7	Prior entrepreneurial experience				
	yes	Ref			
	no	0.390	0.256	0.127	-.111, .891
8	Business activity type				
	part-time business	Ref			
	sole proprietorship employing only the founder	0.332	0.389	0.394	-.431, 1.094
	small business employing a few people	0.689	0.317	0.030	.068, 1.309
	business into which the aspiring entrepreneur intends to invest for growth	1.390	0.375	< .0005	.656, 2.124
9	Country of operation				
	Australia	Ref			
	USA	0.194	0.377	0.607	-.544, .932
	Brazil	0.466	0.322	0.148	-.165, 1.097
10	Study wave	-0.089	0.042	0.037	-.172, -.005

Notes: B = regression coefficients (are unstandardized); SE = standard errors. The ICC for this multivariable model was zero.

4.8 Moderating effect of goal intention and strength

Multilevel regression models with the application of interaction terms have been conducted to investigate the moderating effect of goal intention and strength.

The findings for the direct effect hypotheses are concluded from the results of the regression models provided in Table 4-14, which exclude the intention variables. This

is due to eliminating the impact of missing values as these variables were measured over three waves rather than six waves.

4.8.1 Moderating effect of goal intention and strength on the impact of implementation intention on EGEI

Table 4-15 provides the results of the multilevel regression models with the application of interaction terms to investigate the moderating effect of goal intention and strength on the relationship between implementation intention and EGEI. The hypotheses are:

> **Hypothesis 4:** Implementation intention has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.
>
> **Hypothesis 1:** Among early-stage entrepreneurs, goal intention and strength moderates the positive relationship between implementation intention and subsequent entrepreneurial growth effort intensity, such that the relationship is stronger when goal intention strength is high.

As previously stated, the results indicated that there is a statistically significant positive association between implementation intention and EGEI, $\beta = .299$, $p = .039$.

The interaction between goal intention and strength and implementation intention was positive, $\beta = .619$, $p = .184$ 95% CI (-.294, 1.532). Thus, the results indicated that goal intention and strength positively moderated the association between implementation intention and EGEI. With the interaction term in the model, the coefficients for implementation intentions changed from .299 to -.630.

A likelihood-ratio test indicated that the interaction term did not improve model fit, $p = .1884$ and therefore, was dropped from the multivariable model. Overall model goodness of fit for the multivariable model was assessed by a Wald statistic of 55.46, $p < .00005$.

Table 4-15: Results for moderating effect of goal intention and strength on the impact of implementation intention on EGEI

	B	*SE*	*P* -value	95% Confidence interval
Interaction term (moderation)	0.619	0.466	0.184	-.294, 1.532
Log likelihood of model				
-36.596				
Likelihood-ratio test				
LR Chi2 (1) = 1.73 *P* -value = .1884				

Notes: B = regression coefficients (are unstandardized); SE = standard errors

4.8.2 Moderating effect of goal intention and strength on the impact of venture goal commitment on EGEI

Table 4-16 provides the results of the multilevel regressions with the application of interaction terms to investigate the moderating effects of goal intention and strength on the relationship between venture goal commitment and EGEI. The hypotheses are:

> **Hypothesis 10:** Venture goal commitment has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.
>
> **Hypothesis 9:** Among early-stage entrepreneurs, goal intention and strength moderates the positive relationship between venture goal commitment and subsequent entrepreneurial growth effort intensity, such that the relationship is stronger when goal intention strength is high.

The results indicated that there is a negative association between venture goal commitment and EGEI, β = -.522, *p* = .062. The interaction between goal intention and strength and venture goal commitment was negative, β = -.192, *p* = .850 95% CI (-2.189, 1.804). Thus, the results indicated that goal intention and strength negatively moderated the association between venture goal commitment and EGEI. With the

interaction term in the model, the coefficients for venture goal commitment changed from -.522 to -.198.

A likelihood-ratio test indicated that the interaction term did not improve model fit, p = .8502 and therefore, was also dropped from the multivariable model. Overall model goodness of fit was assessed by a Wald statistic of 55.54, p < .00005.

Table 4-16: Results for moderating effect of goal intention and strength on the impact of venture goal commitment on EGEI

	B	***SE***	***P*-value**	**95% Confidence interval**
Interaction term (moderation)	-0.192	1.019	0.850	-2.189, 1.804
Log likelihood of model				
-37.443				
Likelihood-ratio test				
LR Chi2 (1) = 0.04 *P*-value = .8502				

Notes: B = regression coefficients (are unstandardized); SE = standard errors

4.9 Estimating mediation of implementation intention and venture goal commitment

The following section shows the results of the multilevel structural equation modeling (MSEM) for estimating mediation of implementation intention and venture goal commitment.

4.9.1 Mediation of implementation intention on the effect of the goal intention and strength

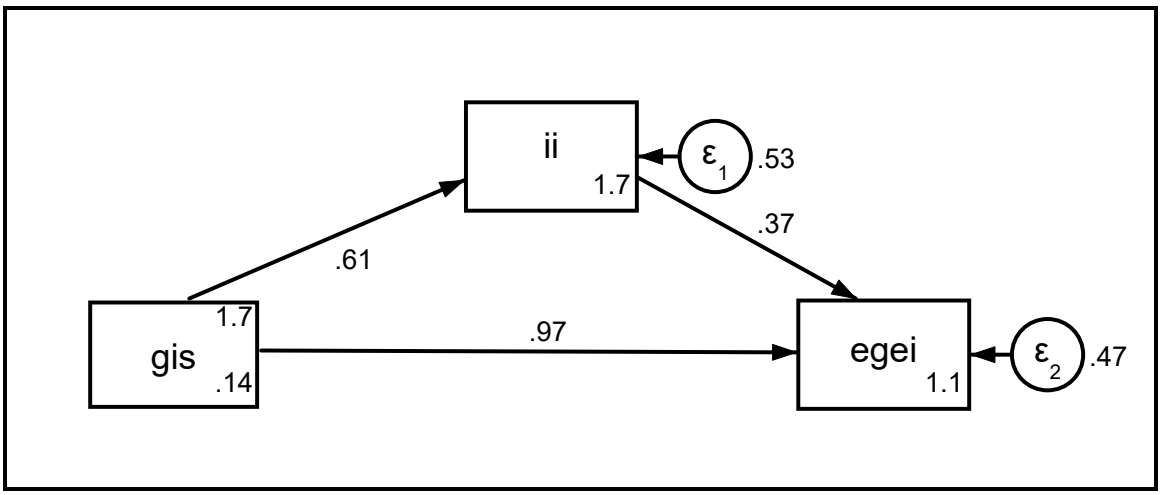
Figure 4-3 shows the measurement model for the mediation of implementation intention (II) on the relationship between goal intention and strength (GIS) and entrepreneurial growth effort intensity (EGEI). The direct effect between GIS and II is .61, II and EGEI is .37 and GIS, and EGEI is .97. The variance of II is .53, and the variance of EGEI is .47. The hypotheses are:

> **Hypothesis 2:** Goal intention and strength has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.

Hypothesis 5: Among early-stage entrepreneurs, implementation intention mediates the effect of the goal intention and strength to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.

Table 4-17 shows the results of the MSEM. The coefficient for the direct effect is .975 and is statistically significant p = .001. The coefficient for the mediating effect is .223 95% CI (-.044, .490), and is not statistically significant at the .05 level p = .102. The total effect coefficient is 1.198, 95% CI (.622, 1.774). The R-squared test for this model is .275, indicating 28% of the variability in EGEI is explained by the relationship between II and GIS and their relationship with EGEI.

Figure 4-3: Model on mediation of implementation intention on the effect of goal intention on EGEI



Notes: gis = goal intention and strength, ii = implementation intention, egei = entrepreneurial growth effort intensity

Table 4-17: Results for mediation of implementation intention on the effect of goal intention and strength on EGEI

	B	*SE*	*P*-value	95% Confidence interval
Indirect effect	0.223	0.136	0.102	-.044, .490
Direct effect	0.975	0.287	0.001	.412, 1.538
Total effect	1.198	0.294	<.00005	.622, 1.774
R^2 - Model goodness of fit				
0.275				

Notes: B = regression coefficients (are unstandardized); SE = standard errors

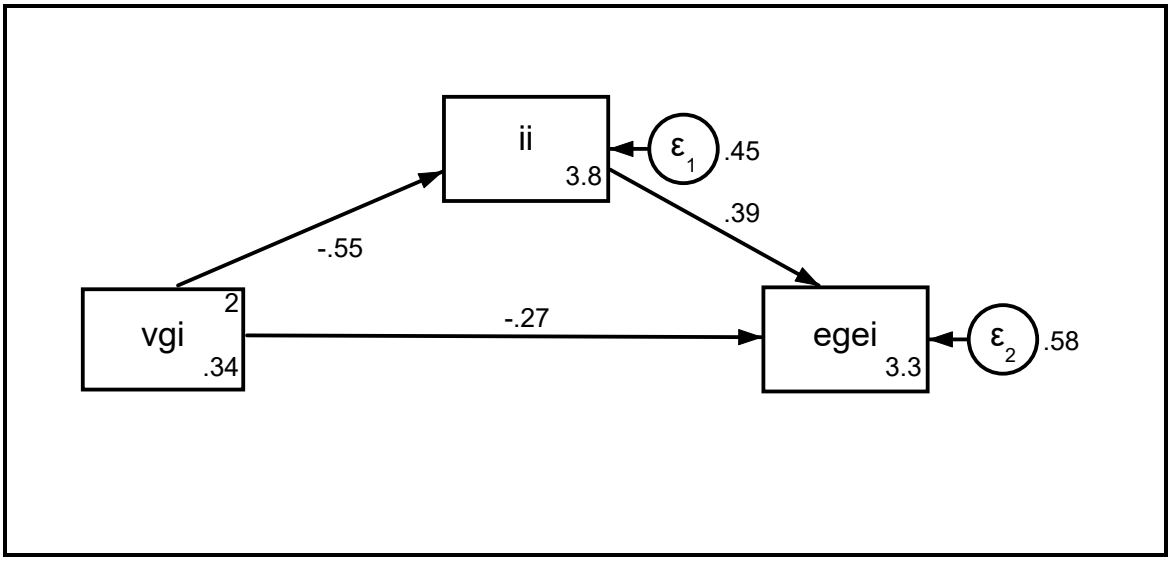
4.9.2 Mediation of implementation intention on the effect of the venture growth intention

Figure 4-4 shows the measurement model for the mediation of II on the relationship between venture growth intention (VGI) and EGEI. The direct effect between VGI and II is -.55, II and EGEI is .39 and VGI, and EGEI is -.27. The variance of II is .45, and the variance of EGEI is .58. The hypotheses are:

> **Hypothesis 3:** Venture growth intention has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.
>
> **Hypothesis 6:** Among early-stage entrepreneurs, implementation intention mediates the effect of the venture growth intention to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.

Table 4-18 shows the results of the MSEM. The coefficient for the direct effect is -.266 and is not statistically significant p = .223. The coefficient for the mediating effect is -.216 95% CI (-.443, .012), and is marginally statistically significant p = .063. The total effect coefficient is -.482, 95% CI (-.889, -.074). The R-squared test for this model is .214, indicating 21% of the variability in EGEI is explained by the relationship between II and VGI and their relationship with EGEI.

Figure 4-4: Model on mediation of implementation intention on the effect of venture growth intention on EGEI



Notes: vgi = venture goal intention, ii = implementation intention, egei = entrepreneurial growth effort intensity

Table 4-18: Results for mediation of implementation intention on the effect of venture growth intention on EGEI

	B	*SE*	*P* -value	95% Confidence interval
Indirect effect	-0.216	0.116	0.063	-.443, .012
Direct effect	-0.266	0.218	0.223	-.693, .162
Total effect	-0.482	0.208	0.021	-.889, -.074
R^2 - Model goodness of fit				
0.214				

Notes: B = regression coefficients (are unstandardized); SE = standard errors

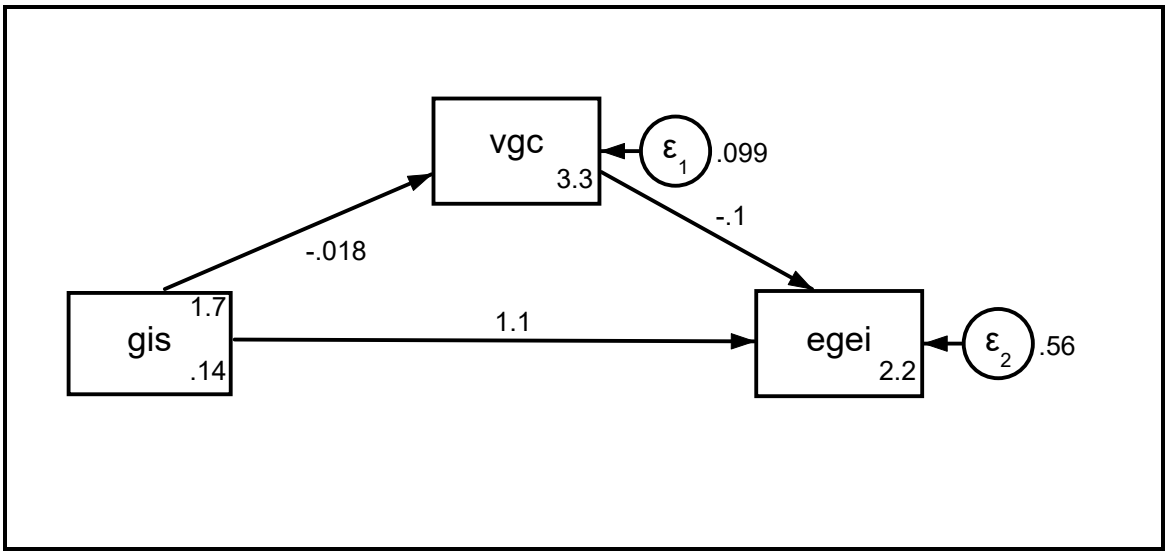
4.9.3 Mediation of venture goal commitment on the effect of the goal intention and strength

Figure 4-5 shows the measurement model for the mediation of venture goal commitment (VGC) on the relationship between GIS and EGEI. The direct effect between GIS and VGC is -.018, VGC and EGEI is -.1, and GIS and EGEI is 1.1. The variance of VGC is .099, and the variance of EGEI is .56. The hypothesis is:

> **Hypothesis 7:** Among early-stage entrepreneurs, venture goal commitment mediates the effect of the goal intention and strength to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.

Table 4-19 shows the results of the MSEM. The coefficient for the direct effect is 1.122 and is statistically significant $p < .00005$. The coefficient for the mediating effect is .002 95% CI (-.026, .030), and is not statistically significant $p = .897$. The total effect coefficient is 1.123, 95% CI (.544, 1.703). The R-squared test for this model is .235, indicating 24% of the variability in EGEI is explained by the relationship between VGC and GIS and their relationship with EGEI.

Figure 4-5: Model on mediation of venture goal commitment on the effect of goal intention and strength on EGEI



Notes: gis = goal intention and strength, vgc = venture goal commitment, egei = entrepreneurial growth effort intensity

Table 4-19: Results for mediation of venture goal commitment on the effect of goal intention and strength on EGEI

	B	***SE***	***P*-value**	**95% Confidence interval**
Indirect effect	0.002	0.014	0.897	-.026, .030
Direct effect	1.122	0.295	<.00005	.543, 1.700
Total effect	1.123	0.295	<.00005	.544, 1.703
R^2 - Model goodness of fit				
0.235				

Notes: B = regression coefficients (are unstandardized); SE = standard errors

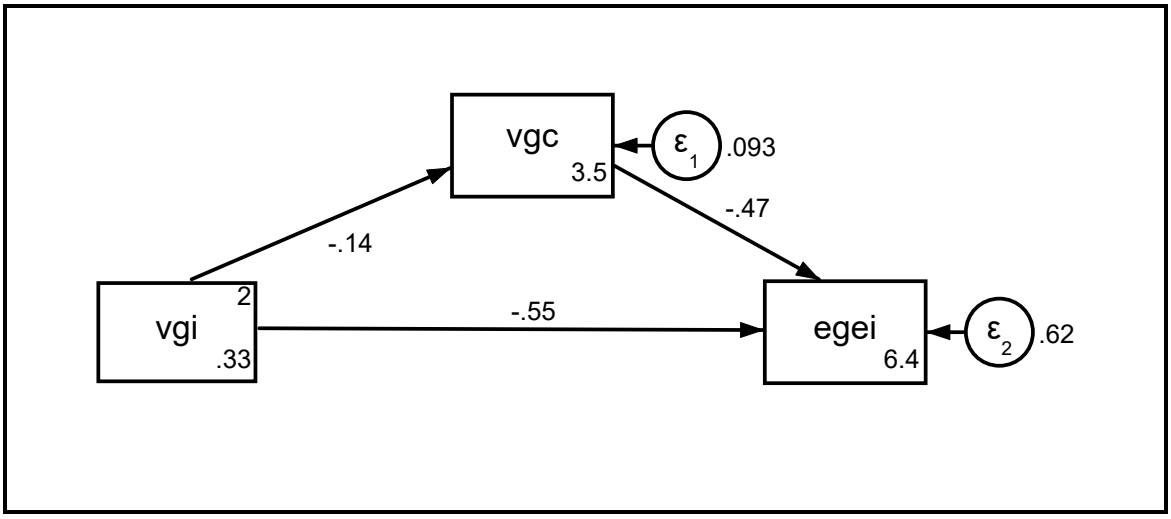
4.9.4 Mediation of venture goal commitment on the effect of the venture growth intention

Figure 4-6 shows the measurement model for the mediation of VGC on the relationship between VGI and EGEI. The direct effect between VGI and VGC is -.14, VGC and EGEI is -.47, and VGI and EGEI is -.55. The variance of VGC is .093, and the variance of EGEI is .62. The hypothesis is:

> **Hypothesis 8:** Among early-stage entrepreneurs, venture goal commitment mediates the effect of the venture growth intention to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.

Table 4-20 shows the results of the MSEM. The coefficient for the mediating effect is .065 95% CI (-.062, .193), and is not statistically significant p = .313. The total effect coefficient is -.481, 95% CI (-.886, -.076). The R-squared test for this model is .184, indicating 18% of the variability in EGEI is explained by the relationship between VGC and VGI and their relationship with EGEI.

Figure 4-6: Model on mediation of venture goal commitment on the effect of venture growth intention on EGEI



Notes: vgi = venture growth intention, vgc = venture goal commitment, egei = entrepreneurial growth effort intensity

Table 4-20: Results for mediation of venture goal commitment on the effect of venture growth intention on EGEI

	B	*SE*	*P* -value	95% Confidence interval
Indirect effect	0.065	0.065	0.313	-.062, .193
Direct effect	-0.546	0.210	0.009	-.959, 1.134
Total effect	-0.481	0.207	0.020	-.886, -.076
R^2 - Model goodness of fit				
0.184				

Notes: B = regression coefficients (are unstandardized); SE = standard errors

4.10 Assumptions of linear regression

As previously mentioned in Chapter 3: Methodology, the three assumptions tested to justify the use of linear regression models are the normal distribution of the residuals, homoscedasticity, and linearity of the association between the continuous explanatory variables and the outcome.

The residual plot, shown in Figure 4-7, displayed no indication of grossly changing variance. The Breusch-Pagan test result showed p = .1160 for testing heteroskedasticity in the linear regression model. The Q-Q plot showed the residuals were lower than expected in the negative range, although not grossly bad, evidenced by the p-value of .257 from skewness kurtosis combined test.

As illustrated in the correlation matrix in Table 4-11, all the study variables were linearly related, except for venture goal commitment. The Locally Weighted Scatterplot Smoothing (Lowess) plot showed a fit that may be non-linear but not strongly so, as illustrated in Figure 4-8.

The nonlinearity was further assessed by adding venture goal commitment squared, and venture goal commitment cubed to the regression models. However, the fits were not statistically significant, p = .632 and .604 respectively, and were, therefore, dropped from the model.

Figure 4-7: Residual plot

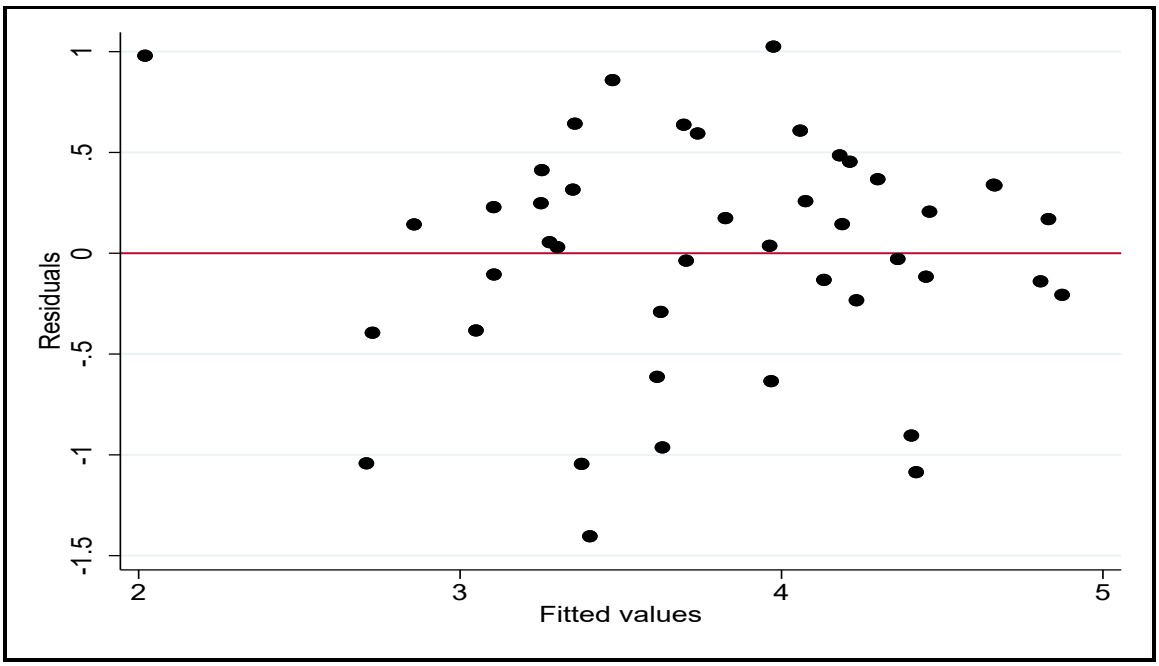
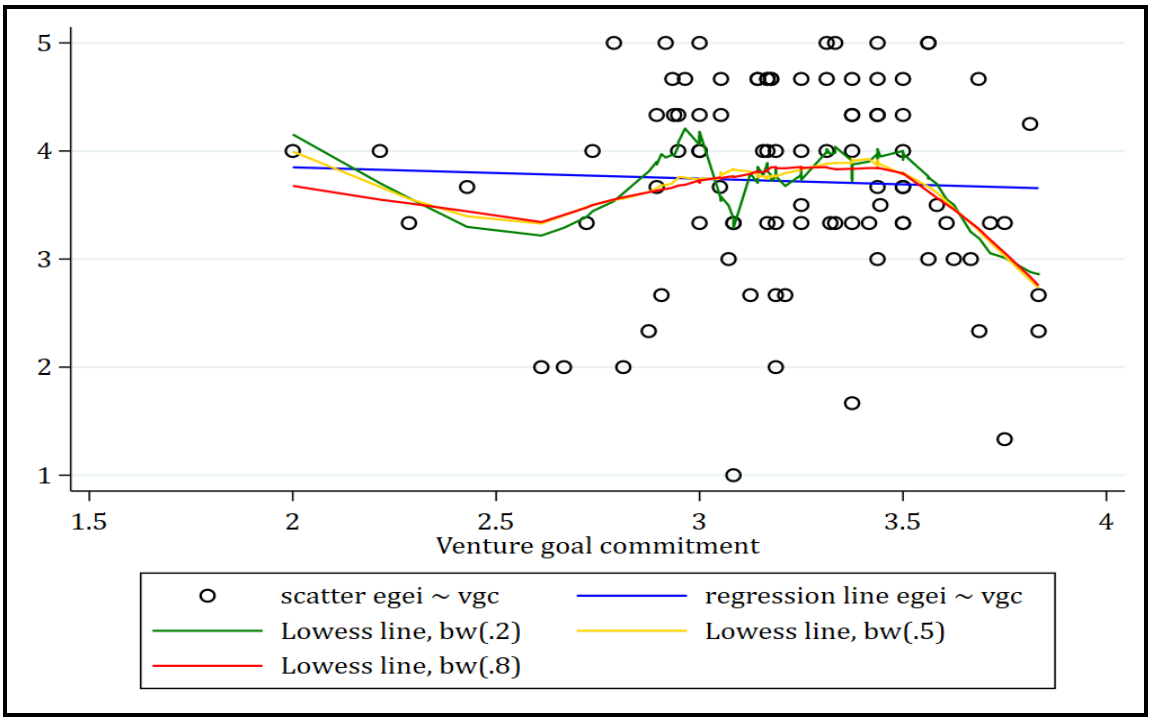


Figure 4-8: Lowess plot checking linearity between entrepreneurial growth effort intensity and venture goal commitment



4.11 Chapter conclusion

This chapter has provided a thorough and rigorous analysis using multilevel regression models to assess moderating effects through the application of interaction terms. Furthermore, the analysis has estimated mediation through structural

equation modeling (SEM). The results of each of the hypotheses have been stated and explained to provide a comprehensive insight into the dynamic fluctuation of entrepreneurial growth effort intensity among early-stage entrepreneurs. Table 4-21 provides a summary of the results for the study's hypotheses, and as it can be seen hypotheses 2 and 4 were supported, and hypotheses 6 and 10 were marginally statistically significant. The findings for each of the hypotheses are discussed in the next chapter, Chapter 5: Discussion, Recommendations, and Conclusion.

The aim of the detailed investigation of missing data through item nonresponse and moment nonresponse has been to provide further understanding on ESM studies. Moreover, to encourage future research not to overlook this crucial aspect of ESM analysis, as the missing data patterns offer a fundamental insight into participant response rate.

Lastly, the multiple tests conducted for assumptions of linear regression are also an essential part of this analysis. Linear associations between the variables should never be assumed but confirmed through testing, as this will indicate whether the correct type of analysis has been applied.

The following chapter is Chapter 5: Discussion, Recommendations, and Conclusion.

Table 4-21: Summary of results for the study's hypotheses

	Hypothesis	*p*-value
1	Among early-stage entrepreneurs, goal intention and strength moderates the positive relationship between implementation intention and subsequent entrepreneurial growth effort intensity, such that the relationship is stronger when goal intention strength is high.	.184
2	Goal intention and strength has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.	.001
3	Venture growth intention has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.	.223
4	Implementation intention has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.	.039
5	Among early-stage entrepreneurs, implementation intention mediates the effect of the goal intention and strength to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.	.102
6	Among early-stage entrepreneurs, implementation intention mediates the effect of the venture growth intention to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.	.063
7	Among early-stage entrepreneurs, venture goal commitment mediates the effect of the goal intention and strength to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.	.897
8	Among early-stage entrepreneurs, venture goal commitment mediates the effect of the venture growth intention to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity.	.313
9	Among early-stage entrepreneurs, goal intention and strength moderates the positive relationship between venture goal commitment and subsequent entrepreneurial growth effort intensity, such that the relationship is stronger when goal intention strength is high.	.850
10	Venture goal commitment has a positive effect to engage in venture growth tasks through entrepreneurial growth effort intensity among early-stage entrepreneurs.	.062

Chapter 5: Discussion, Recommendations, and Conclusion

5.1 Chapter introduction

This chapter provides the discussion, recommendations, and conclusion for this study. Figure 5-1 illustrates the chapter structure. This study has aimed to investigate entrepreneurial effort towards venture growth tasks among early-stage entrepreneurs, to provide further insight into understanding sustaining effort while working towards the goal of new venture growth. The investigation of the effects of implementation intention and venture goal commitment on entrepreneurial effort is fundamental in further understanding the entrepreneurial process, as planning and commitment are explained to impact on behaviour. Goal intention and venture growth intention have also been measured to contribute further to existing research on the transition of intended behaviour into actual behaviour.

The missing data for this ESM study has been discussed, through investigating item nonresponse and moment nonresponse. Furthermore, the within-person and between-person effects which have been investigated are also further discussed as it is an essential dimension of ESM studies.

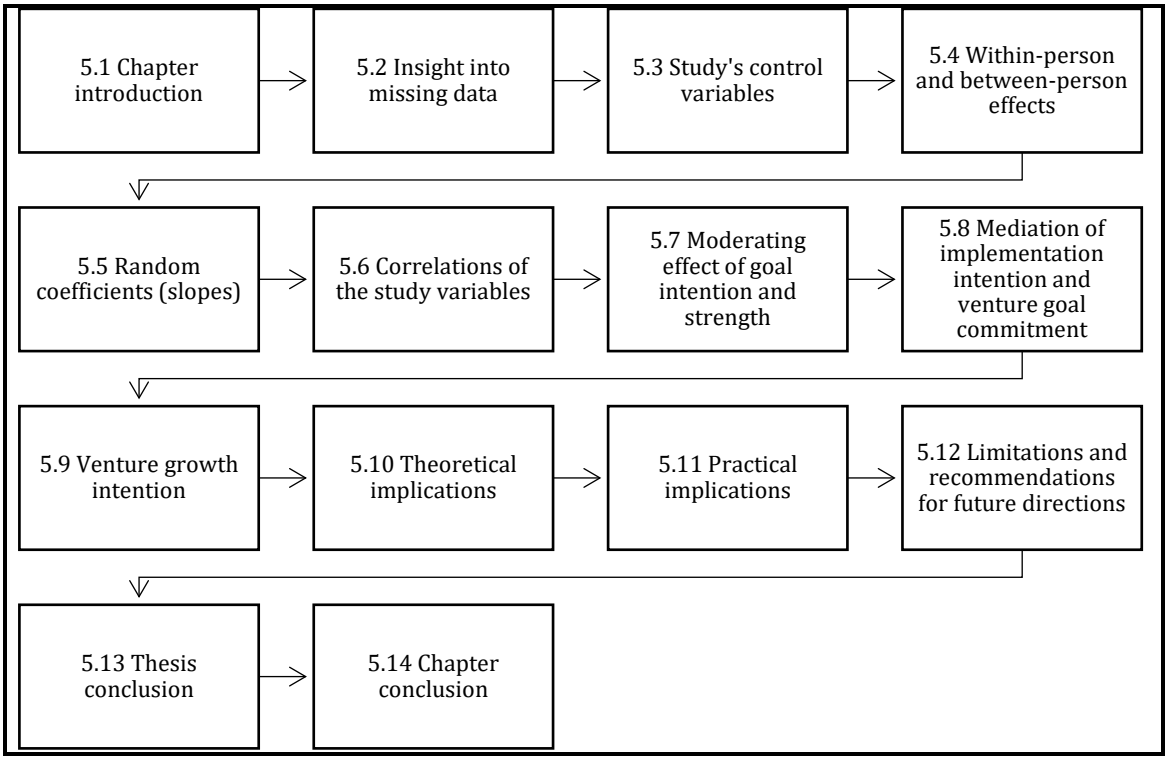
Prior to discussing the results of the multilevel regression modeling, the correlations of the study variables are explained to provide a further understanding of the associations between the dependent variable and each of the four independent variables. Discussions and possible explanations are provided on the study's results which have investigated moderating effects and mediation. The findings offer in-depth insight on entrepreneurial effort towards venture growth tasks among early-stage entrepreneurs.

Furthermore, the outcomes for the open-ended questions for venture growth intention are deliberated. The investigation has been on how early-stage entrepreneurs intend to grow, and the challenges which have interfered with achieving their growth intentions. These findings provide further insight on the link between entrepreneurial intentions and effort towards venture growth tasks.

Following the discussions on the results, the study's theoretical and practical implications are explained. The discussions are then continued to the limitations of

the study and recommendations for future research. The final part of this chapter provides a concluding review of the study.

Figure 5-1: Discussion, recommendations, and conclusion chapter structure



5.2 Insight into missing data

In this study, similar to most ESM studies, missing data has been a challenging factor. As this study design was based on an application platform, missing data has been mainly due to technological failures. These failures relate to software crashes, participants changing or upgrading their mobile phones and failing to reinstall and login to the application correctly. Thus, resulting in participants not receiving the total number of scheduled notification prompts as the application had not been running actively on their mobile phones.

Regular communication and reminders via email (of high importance to their nominated email address) were sent to those participants who were not regularly responding or had stopped responding to the notification prompts. Although these reminders were at times effective, unfortunately, some participants did not always follow through, and their commitment to respond to the notification prompts progressively decreased throughout the study.

5.2.1 Item nonresponse

Item nonresponse in this study refers to the percentage of items/responses missing out of the total of 144 items per participant across the three-months study period. Item nonresponse has been calculated for each of the study variables across six study waves, except for the two intention variables (goal intention and venture growth intention) which have been measured across three study waves.

In the first wave, as per expected and in line with previous ESM studies, item nonresponse percentages have been very low, as participant commitment to responding to the notification prompts is very high at the beginning of the study. The two intention variables had higher percentages of item nonresponse as these variables were the first to be measured. Therefore, participants were adjusting to the frequency of the notification prompts and how to provide responses within the application.

In the second wave, all the study variables had a low percentage of item nonresponse expect for the variable implementation intention (11.76%). This is likely due to this variable being measured last. Thus, participant fatigue caused a decrease in commitment levels.

In the third wave, all the study variables had a high percentage of item nonresponse, and the highest missing percentages were for the variables; entrepreneurial growth effort intensity, implementation intention and venture goal commitment (19.05%, 11.76%, and 11.11% respectively). Again, this is due to participant fatigue from a high frequency of notification prompts sent per day (x 4) and the repetition in measurements for each variable.

In the fourth wave, the item nonresponse percentage had decreased for the variable entrepreneurial growth effort intensity, which among the three variables was the first variable to be measured. Thus, participant fatigue was at its lowest at the beginning of this wave.

In the fifth and sixth waves, the item nonresponse percentages were extremely high as expected. In wave five the item nonresponse missing percentage for entrepreneurial growth effort intensity, implementation intention, and venture goal commitment was: 33.33%, 23.53%, and 33.33% respectively, and in wave six it was: 42.86%, 41.18%, and 44.44% respectively.

These results were as expected, as Dimotakis et al. (2013) discussion on missing data in ESM studies explain that it is more problematic in comparison to other types of research. The reason is mainly due to the high frequency of notification prompts per day, as participants are completely unsupervised. At the same time dealing with their daily routines and challenges, thus, the sampling procedure becomes burdensome.

5.2.2 Moment nonresponse

The analysis part of this study has excluded eight participants, resulting in the final sample of 19 participants. These eight participants have not provided a minimum of 48 responses which is 1/3 of the total of 144 notifications per participant. Thus, as per ESM experts' guide (e.g., Hektner et al., 2007), these participants have been excluded from the analysis.

5.3 Study's control variables

The analysis has controlled for the potential effects of relevant variables on entrepreneurial growth effort intensity. The control variables include (1) gender, (2) age, (3) completed educational level, (4) parents' entrepreneurial background, (5) prior entrepreneurial experience, (6) years of entrepreneurial experience, (7) business activity type, and (8) country of operation. These variables were measured prior to participants starting the ESM study. As all these variables have been entered into the multilevel regression model simultaneously, therefore, the relationship for each variable with entrepreneurial growth effort intensity (outcome variable) has been adjusted for all other variables.

Although the control variables have been controlled for in the analysis, bias in the results may be probable as this is a small sample size. This study unlike most studies contains a higher number of female participants/entrepreneurs (12) in comparison to male (seven). Furthermore, the participants' completed educational level is fairly above average, as majority of the participants have gained a bachelor's degree or equivalent (nine) or master's degree or equivalent (seven). However, this is in line with previous studies which have found a positive association between educational attainment and entrepreneurship.

5.4 Within-person and between-person effects

This study has used the post estimation Stata command 'lincom' (or linear combination, cf. Rabe-Hesketh and Skrondal, 2008), to investigate differences for within-person and between-person effect. The estimated between-person effects of the following study variables on entrepreneurial growth effort intensity showed there was no statistical difference: implementation intention (p = .894), venture goal commitment (p = .175), goal intention and strength (p = .905), and venture growth intention (p = .414).

Therefore, the results indicate that the between-person effect is not significant, and thus, the modeling in the analysis has accounted for within-person effect only. There are two possible explanations for the lack of statistical evidence for differences in within-person and between-person effects. The first reason is that it may be due to a smaller sample size, thus, not generating sufficient statistical power. The second reason may be that there is no statistical difference comparing within-person and between-person effects. As the p-values provided above are very large, this indicates more towards the latter explanation that for the investigation of these particular variables, there is no difference regardless of the sample size.

5.5 Random coefficients (slopes)

This study has analysed the effect of random slopes in the regression models. The random slopes, in addition to fixed effects for each participant, showed that the variance/standard deviation of all the slopes were very close to zero. Thus, it was not included in the regression models. This result showed that the effect of the four covariates (implementation intention, venture goal commitment, goal intention and strength, and venture growth intention) on entrepreneurial growth effort intensity differed very little between participants.

These results may be due to small sample size (not sufficient statistical power) or there is no difference between participants regarding the effect of these four covariates on entrepreneurial growth effort intensity as the standard deviations were so close to zero. This indicates that the lack of difference in effect may have had more of an impact on the results rather than the sample size, although, the sample size would still have an influence.

5.6 Correlations of the study variables

The correlations between the dependent variable (entrepreneurial growth effort intensity) and three out of the four independent variables show significant association (please see Table 4-11). Two of these correlations have been in the direction hypothesised: entrepreneurial growth effort intensity is positively correlated with implementation intention and goal intention. The third correlation has not been in the direction hypothesised, as entrepreneurial growth effort intensity is negatively correlated with venture growth intention.

The correlations provide an initial suggestion that entrepreneurial effort towards venture growth among early-stage entrepreneurs is related to implementation intention and goal intention as per the study's model, and in the hypothesised direction. The negative correlation between entrepreneurial growth effort intensity and venture growth intention was weak; thus, this association may become positive in a larger sample size. Additionally, the result may be impacted by the measurement of a single-item scale for venture growth intention, as two out of the three items were open-ended questions and thus, were not included in the statistical analysis. However, this finding is similar to recent studies which have also found that a large proportion of individuals with intentions do not follow through with actions (Gielnik et al., 2014; Kautonen et al., 2015; Obschonka et al., 2015; Reuel Johnmark et al., 2016; Van Gelderen et al., 2015). Thus, not all intended entrepreneurs act on their intentions (Dholakia and Pbagozzi, 2003) which in this case is intention towards venture growth.

5.7 Moderating effect of goal intention and strength

Multivariable multilevel regression modeling with the application of interactions has been conducted to investigate the moderating effect of goal intention and strength. The regression results have indicated that the random effects were not significant in the multivariable regression. Thus, the models have accounted for and controlled for all the variables as fixed effects, which has shown to model mean entrepreneurial growth effort intensity more comprehensively.

The next section discusses the findings for the moderating effect of goal intention and strength. It must be noted that all the participants in the study have had the intention to perform venture growth tasks throughout the study period.

5.7.1 Moderating effect of goal intention and strength on the impact of implementation intention on entrepreneurial growth effort intensity

This study has investigated the moderating effect of goal intention and strength on the impact of implementation intention towards venture growth tasks on entrepreneurial growth effort intensity. Firstly, the results have shown a significant positive relationship between implementation intention and subsequent entrepreneurial growth effort intensity (p = .039) once the influence of all other variables was taken into account in the model. This finding is consistent with prior research discovering positive effects associated with implementation intention on attaining complex goals which can be completed through various ways (van Hooft et al., 2005). Moreover, it complements entrepreneurship scholars' discussion on implementation intentions promoting commitment to act (Ajzen et al., 2009; Fayolle and Liñán, 2014).

Furthermore, the results also support the expectations that goal intention and its level of strength positively moderates the relationship between implementation intention and subsequent entrepreneurial growth effort intensity. However, this moderating effect has not been significant (p = .184). A closer look into the results has revealed that the moderating effect of goal intention and strength reduces the strength of the relationship between implementation intention and entrepreneurial growth effort intensity.

This finding is important as the results confirm that there is a positive relationship between goal intention and its level of strength and implementation intention, which translates into entrepreneurial growth effort intensity. The strength of the relationship has been assessed as per suggestions made by Adam and Fayolle (2015) and van Gelderen et al. (2017) to gain further insight into entrepreneurial actions.

More importantly, the findings indicate that the relationship between implementation intention on subsequent entrepreneurial growth effort intensity is stronger without the effect of goal intention and strength. This finding is contrary to the study conducted by Sheeran et al. (2005), as they concluded that if individuals had weak goal intentions, implementation intention did not affect behavioural performance. A potential explanation for the difference in the findings is that this study has investigated entrepreneurial effort intensity specifically towards venture growth tasks among early-stage entrepreneurs.

Thus, the findings suggest that once early-stage entrepreneurs develop their implementation intention towards venture growth, they continue to exert effort towards growth tasks as this is the volitional phase in behaviour achievement (Sheeran and Silverman, 2003). This explanation supports the view that due to the automaticity developed by the joining of the what, when, and where components of action, actions can be carried out even with relatively low intention strength (van Gelderen et al., 2017).

The findings contribute to the literature on the link between entrepreneurial intention and behaviour. Furthermore, they suggest that when investigating intentions on subsequent behaviour, it is important to consider the stage of the venture process the entrepreneurs are operating in, which helps to define their venture intentions and goals at the time. Thus, defining the exact entrepreneurial behaviour such as effort towards venture creation tasks or venture growth tasks. As this study has investigated early-stage entrepreneurs, the results may be different for entrepreneurs at the growth stage of the venture. Therefore, future research could investigate the effect of goal intentions on the relationship between implementation intentions and subsequent effort among entrepreneurs in the venture growth stage.

5.7.2 Moderating effect of goal intention and strength on the impact of venture goal commitment on entrepreneurial growth effort intensity

The moderating effect of goal intention and strength on the impact of venture goal commitment towards venture growth on entrepreneurial growth effort intensity has been investigated. Contrary to expectations, a marginally significant relationship has been found between venture goal commitment towards venture growth and subsequent entrepreneurial growth effort intensity (p = .062). However, this result is close to significance, therefore, not completely conclusive due to the likelihood of the smaller sample size. The results may have supported the prediction in a larger sample size with higher statistical power.

The relationship between venture goal commitment and entrepreneurial growth effort intensity was found to be negative. Majority of the previous studies have focused on investigating commitment towards the intention of creating a venture, rather than commitment towards effort during the venture process. De Clercq et al. (2009) have recommended that further insight is required on an entrepreneur's commitment during the venture process, such as in the survival and growth stages.

This finding contributes to the literature on commitment while sustaining entrepreneurial effort towards venture growth. The findings suggest that while commitment may be positively associated with venture creation tasks, during effort towards venture growth tasks, this association is found to be negative as these tasks may seem more complex and overwhelming. A possible explanation for this negative association is entrepreneurs who are committed to venture growth are actively searching for ways to grow, thus, may become overwhelmed by the complexity and challenge of the growth tasks they need to complete. This may lead to procrastination (inaction) due to action uncertainty (van Gelderen, 2009). Steel and König (2006) discuss the temporal motivational theory, which explains to manage procrastination one must increase the value of tasks, decrease the delay in both effort and its rewards, and minimise the risk of temptation through eliminating distractions.

Furthermore, the findings do not support the prediction that goal intention and its level of strength positively moderates the relationship between venture goal commitment and subsequent entrepreneurial growth effort intensity. The results have shown that the moderating effect of goal intention and strength was negative, although not significant (p = .850). However, a closer look into these findings revealed that the moderating effect of goal intention and strength did improve the negative relationship between venture goal commitment and subsequent entrepreneurial growth effort intensity.

There are two important findings. Firstly, among early-stage entrepreneurs, the relationship between venture goal commitment and entrepreneurial growth effort intensity is negative, which indicates that venture creation tasks may not seem as overwhelming and complex in comparison to venture growth tasks. Secondly, the moderating effect of goal intention and strength improves the negative relationship between venture goal commitment and subsequent entrepreneurial growth effort intensity, such that the negative relationship becomes weaker. This finding supports the view by Ajzen et al. (2009) that intentions, in combination with a commitment to the intended behaviour, increase the probability of performing the behaviour.

The next section discusses the findings for the mediation of implementation intention and venture goal commitment.

5.8 Mediation of implementation intention and venture goal commitment

This study has conducted multilevel structural equation modeling (MSEM) to estimate the mediation of implementation intention and venture goal commitment on the effects of goal intention and strength and venture growth intention on entrepreneurial growth effort intensity.

5.8.1 Mediation of implementation intention on the effect of the goal intention and strength on entrepreneurial growth effort intensity

This study has investigated the mediation of implementation intention towards venture growth tasks on the effect of the goal intention and strength on entrepreneurial growth effort intensity. Firstly, the results have supported the prediction and shown a significant positive direct effect between goal intention and its level of strength and subsequent entrepreneurial growth effort intensity (p = .001). This finding supports the view that the level of intensity of desired goals may contribute to the decision to take action (Edelman et al., 2010).

As per recommendations by Churchill and Jessop (2010) on the lack of studies on non-induced implementation intentions, this study contributes to the investigation of non-induced, self-generated, and spontaneous implementation intentions towards venture growth tasks among early-stage entrepreneurs. The findings indicate no significance for implementation intention mediating the effect of the goal intention and strength to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity (p = .102). However, this result is suggestive but not completely conclusive, as the confidence interval (CI) indicates most values are within the positive range. This may be as a result of limited statistical power due to the smaller sample size.

The model has shown that 28% of the variability in entrepreneurial growth effort intensity is explained by the relationship between implementation intention and goal intention and strength, and their relationship with entrepreneurial growth effort intensity. Furthermore, the model has shown that the direct effect between goal intention and strength and entrepreneurial growth effort intensity was stronger than the mediating effect of implementation intention towards venture growth.

The positive mediation of implementation intention towards venture growth tasks extends on the work by van Gelderen et al. (2017) who found that implementation intention mediates the effects of goal intentions on performing entrepreneurial action

related to start-up activities. Thus, providing insight into the next phase of venture tasks which are focused on growth, which also involves a high level of uncertainty and a wide range of activities that are carried out in different sequences.

5.8.2 Mediation of implementation intention on the effect of the venture growth intention on entrepreneurial growth effort intensity

The mediation of implementation intention on the effect of the venture growth intention on entrepreneurial growth effort intensity has been investigated. Contrary to expectations, a negative relationship has been found between venture growth intention and entrepreneurial growth effort intensity. However, this relationship was not significant (p = .223). A potential explanation for this finding is that early-stage entrepreneurs may become more focused on tasks associated with the daily operations of their new ventures, and as a result, may not be effectively dealing with competing goals. Thus, despite developing venture growth intentions, this may lead to action uncertainty which may then lead to inaction.

For early-stage entrepreneurs to release their venture growth intentions, they need to priorities their goals to ensure that venture growth intention is on top of the list of goals to achieve as explained by Frese (2007). In addition to prioritising, early-stage entrepreneurs need to effectively allocate time, energy, and resources for realising their venture growth intention. Venture growth is a long-term goal and thus, requires effective time management techniques (Covey, 1990), so that it is not overlooked by more urgent and short-term goals (Frese, 2007).

Furthermore, the findings indicate marginal significance for implementation intention mediating the effect of the venture growth intention to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity (p = .063). Once again, this result is close to significance; therefore, it is not completely conclusive, which may be due to smaller sample size. The results may have supported the prediction in a larger sample size with higher statistical power. Additionally, contrary to expectations, the mediating effect of implementation intention was shown as negative. One possible explanation for the mediation being negative is action control problems due to intention instability, as a result of lack of clear direction and detail on the specific actions to take (Sheeran, 2002).

The model has shown that 21% of the variability in entrepreneurial growth effort intensity is explained by the relationship between implementation intention and

venture goal intention, and their relationship with entrepreneurial growth effort intensity. The findings suggest that defining the type of intentions being investigated is fundamental, as the direct effect on subsequent entrepreneurial growth effort intensity and the mediation of implementation intention was positive for goal intention and negative for venture growth intention.

Thus, to gain further insight into the entrepreneurial process, it is fundamental to clearly define and set boundaries for the particular type of relating factors being investigated, such as venture growth intentions and not intentions in general. Furthermore, the type of entrepreneurial action should also be clearly defined, such as effort towards venture growth tasks.

As per suggestions by Doern (2009), it is imperative to initially measure whether the entrepreneurs possess venture growth intentions, rather than assuming all entrepreneurs have the intention to grow their ventures, which is a false assumption made by the majority of empirical research on growth.

The next section discusses the findings for the mediation of venture goal commitment.

5.8.3 Mediation of venture goal commitment on the effect of the goal intention and strength on entrepreneurial growth effort intensity

This study has investigated the mediation of venture goal commitment towards venture growth on the effect of the goal intention and strength on entrepreneurial growth effort intensity. The findings indicate no significance for venture goal commitment mediating the effect of the goal intention and strength to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity (p = .897). The model has shown that 24% of the variability in entrepreneurial growth effort intensity is explained by the relationship between venture goal commitment and goal intention and strength, and their relationship with entrepreneurial growth effort intensity.

The model indicates that the direct effect between goal intention and strength and entrepreneurial growth effort intensity was much stronger than the mediating effect of venture goal commitment towards venture growth. This finding suggests that early-stage entrepreneurs who possess goal intention towards venture growth tasks are more likely to exert effort towards venture growth, despite the presence of venture goal commitment. This result is supported by Conner et al. (2000) and

Sheeran et al. (1999) explaining that the stability and strength of intentions better predict behaviour, such that relatively stable and strong intentions are more likely to lead to action.

A potential explanation for the lack of findings for the mediation of venture goal commitment is that the scale may be measuring commitment more towards intention and decision rather than commitment towards exerting effort. Also, this finding supports the view that the more an individual performs a behaviour, the more committed they become (Beauvois and Joule, 1981). Thus, commitment is as a result of a series of actions and decisions which are performed towards attaining a desired outcome (Fayolle and Liñán, 2014).

A further explanation may be that among early-stage entrepreneurs, venture goal commitment towards venture growth is partial rather than total. Fully committed individuals reach a point where they will go all the way through, as the costs of giving up appears to be too high (Fayolle et al., 2011). Thus, early-stage entrepreneurs may not view themselves as 'too far' into the venture process, and therefore, may be partially committed to venture growth in comparison to entrepreneurs who have reached the venture growth stage.

5.8.4 Mediation of venture goal commitment on the effect of the venture growth intention on entrepreneurial growth effort intensity

The mediation of venture goal commitment on the effect of the venture growth intention on entrepreneurial growth effort intensity has been investigated. Similarly, the findings indicate no significance for venture goal commitment mediating the effect of the venture growth intention to engage in venture growth tasks on subsequent entrepreneurial growth effort intensity (p = .313). The model has shown that 18% of the variability in entrepreneurial growth effort intensity is explained by the relationship between venture goal commitment and venture growth intention, and their relationship with entrepreneurial growth effort intensity. Furthermore, the model indicates that the direct effect between venture growth intention and entrepreneurial growth effort intensity is negative. In contrast, the mediating effect of venture goal commitment towards growth is positive as per the study's predictions.

The lack of significant finding in the mediation of venture goal commitment may again be due to the lack of measuring commitment to act. One possible solution may be to add a seventh item subcategory to this scale, measuring commitment towards

effort. As previously discussed in Chapter 3: Methodology, this scale measures two aspects, an individual's commitment to pursue a goal and their evaluation of attaining that goal. Thus, a third aspect may be added to measure an individual's commitment to act on their goal. This measurement is important as individuals demonstrate commitment to a goal or overcoming a challenge through a succession of various actions (Fayolle and Liñán, 2014).

The positive mediation of venture goal commitment on the effect of venture growth intention, extends on the work of Fayolle et al. (2014) on the application of the theory of commitment in entrepreneurship. The authors explain that individuals who have developed an intention towards a goal and have started taking action towards attaining the goal, will not stop until they complete performing the behaviour, thus, not risk failing (Adam and Fayolle, 2015). Therefore, this finding suggests that once early-stage entrepreneurs develop commitment towards venture growth, this acts as a force which directs them to perform entrepreneurial tasks (Tasnim and Singh, 2016) relating to venture growth.

These findings once more demonstrate the importance of defining what the commitment being investigated is towards, and the type of intention being measured. As previously explained, action uncertainty which may lead to inaction, may be impacting on the negative relationship between venture growth intention and entrepreneurial growth effort intensity. Therefore, for early-stage entrepreneurs, it is important to start shifting some of the priority towards venture growth tasks, and one such way could be to begin to redistribute their efforts as suggested by McCarthy et al. (1991).

5.9 Venture growth intention

As previously mentioned in Chapter 4: Results and Analysis, the venture growth intention scale consisted of two open-ended questions, which could not be included in the statistical analysis. Therefore, the outcomes of these questions are discussed in this section.

The responses for these open-ended questions have been summarised for each of the participants. The repeated themes have then been drawn from these responses, explaining how the participants intend to grow their new ventures and if anything has prevented them with their attempts to achieve their growth intentions. The aim of

these questions has been to gain further insight into growth activities and challenges among early-stage entrepreneurs.

Firstly, participants have been asked to rank their level of intention to grow their new venture in the next coming month. The second question asked the participants how they intend to grow the new venture. Summary of the responses are shown in Table 5-1. The responses showed the following growth strategies to be common among the participants: increase sales, increase marketing, expand product and service range, expand market reach, improve current products, and hire staff.

For these early-stage entrepreneurs to achieve the above growth strategies, they require attaining financial, human, and social capital. These findings complement prior research conducted by Baum et al. (2001), Liao and Welsch (2003), and Samuelsson and Davidsson (2009), as they explain these three types of resources are positively related to new venture growth.

For most early-stage entrepreneurs, it is highly challenging to attract resources into a new venture to achieve their growth intentions. This challenge is mainly due to their lack of reputation and track record, thus, being perceived as high risk by resource provides (Brush et al., 2001). To gain further insight into venture growth among early-stage entrepreneurs, the participants responded to a third question which asked them what has prevented them (challenges) from achieving their growth intentions. Summary of the responses are shown in Table 5-2.

The findings suggest that the biggest challenges these early-stage entrepreneurs have been facing are lack of access to resources. In specific lack of access to financial capital was the most common challenge for these early-stage entrepreneurs. Participants also expressed challenges with having access to human capital to improve expertise among teams. This is highly crucial as higher knowledge within the venture team, is positively correlated to the success of new ventures (Davidsson and Honig, 2003). These findings reinforce previous research which has shown that financial and human capital are two resources which are highly related to new venture growth (Cooper et al., 1994; Lee et al., 2001).

Further common challenges for achieving growth intentions among the participants have included: lack of founder experience and knowledge, high competition, and lack of time. Understanding these venture growth challenges among early-stage entrepreneurs is highly important as it contributes to the limited

literature on how to attain new venture growth (Gilbert et al., 2006). The majority of prior studies have focused on ventures which have already achieved growth; therefore, it could be more insightful to investigate the challenges which prevent entrepreneurs from achieving new venture growth. Thus, developing strategies to overcome some common challenges and in turn, improve the rate of new ventures entering the growth stage.

Table 5-1: Summary of responses to venture growth intention (how)

Question	Participant	Summarised responses
How do you intend to grow the new venture?	1	Increase sales with new products. Expand product range and increase market budget.
	2	Increase customer base and sectors. Expand product range and market reach. Target new markets.
	3	Expand to more retailers. Increase sales in stores.
	4	Expand to overseas markets.
	5	Increase marketing efforts via social media ads.
	6	New products. Get funding to develop MVP.
	7	Increase marketing. Expand online sales.
	8	New projects and customers. Hire personnel. Expand products. Expand to overseas markets.
	9	Develop MVP and launch first product.
	10	Further product development. Improve website sales.
	11	Increase marketing. Increase inbound inquiries. Build new website.
	12	Increase marketing. Hire sales personnel. Increase marketing investment.
	13	Launch streaming platform to increase marketing and sales.
	14	Expand to overseas markets. Developing events to attract new customers. Increase services.
	15	Increase marketing and sales. Create new products. Open a new shop.
	16	Hire more staff. Expand into new markets. Create new products. Expand market share.
	17	Develop new marketing material. Improve the website. Work on growth plan.
	18	Expand number of services. Increase sales.
	19	Expand the services and products.

Table 5-2: Summary of responses to venture growth intention (challenges)

Question	Participant	Summarised responses
Has anything prevented or interfered in any way with your attempts to achieve your growth intentions?	1	Competition is slowing growth. Delays in tax registration.
	2	Lack of time for marketing.
	3	Lack of access to capital.
	4	Lack of access to capital.
	5	Lack of access to capital.
	6	Lack of experience.
	7	Cash flow. Too much bureaucracy.
	8	Lack of technical development team. Lack of expertise in digital product design. Slow funding release. Lack of technical decision making and poor internal communication.
	9	Lack of access to capital. Cynicism around preventive, proactive models for healthcare and perception of business being "too young" despite founders being in their mid 40's and with years of experience. Not enough time.
	10	Paying the bills and rent. In debt.
	11	Lack of access to capital. Working full time and managing family.
	12	Lack of access to capital. Lack of human capital.
	13	Lack of access to capital.
	14	Team training and reviewing too many marketing proposals at the same time.
	15	Lack of access to capital. High competition. Lack of access to skilled labour.
	16	Need for investor for growth plan. Lack of market knowledge. Lack of access to capital.
	17	Time availability.
	18	High competition.
	19	Lack of access to capital.

5.10 Theoretical implications

Investigating entrepreneurial growth effort intensity as a dynamic and fluctuating variable through repeated measure designs enriches the literature on new venture growth and entrepreneurial behaviour (Foo et al., 2009; Gielnik et al., 2015; Uy et al., 2015). To the best of the researcher's knowledge, this study is the first to apply both the theory of implementation intention and the concept of commitment in investigating entrepreneurial effort towards venture growth tasks among early-stage entrepreneurs using a process-oriented research design. This investigation has been in response to Bateman and Barry (2012), who have called for further studies on effort while trying to achieve long-term goals.

Entrepreneurial behavioural is explained as an individual-level behaviour, and not a firm-level behaviour (Lumpkin et al., 2009; Wiklund and Shepherd, 2001). A further consideration is that at the individual level of analysis, there is a lack of clear differentiation between entrepreneurial behavioural terms, such as behaviours, actions, and activities. Therefore, this study has aimed to provide clear definitions with a focus on new venture growth to distinguish between the various entrepreneurial behavioural terms.

This study makes a significant contribution to the field of entrepreneurship as the investigation of all relevant variables are specific towards venture growth among early-stage entrepreneurs. To contribute to the literature on new venture growth, insight into the different stages of the venture process contributes to our understanding of this phenomenon. Thus, this study extends knowledge on the early-stage entrepreneurs' goal and growth intentions, implementation intention, venture goal commitment and entrepreneurial effort towards venture growth tasks.

Moreover, this study answers the call for more research on empirical studies investigating implementation intentions to advance our understanding of this theory, as its application is relatively new in the field of entrepreneurship (van Gelderen et al., 2017). Similarly, there is a lack of studies on non-induced and spontaneous implementation intentions (Prestwich et al., 2015). Thus, this study contributes to filling this gap by expanding knowledge on implementation intentions which are self-generated as they are described to be more relevant to each entrepreneur's needs (Armitage, 2009; Wieber and Gollwitzer, 2017).

The findings indicate that implementation intention towards venture growth tasks positively mediates on the effect of goal intention and negatively mediates on the effect of venture growth intention on entrepreneurial growth effort intensity among early-stage entrepreneurs. Thus, indicating that future studies should make a clear distinction between the type of intentions being investigated, as well as the specific goal of the implementation intentions at the different stages of the venture process. Additionally, future research should clearly define what the entrepreneurial behaviour is directed towards, such as whether it is towards venture creation tasks or venture growth tasks.

This study extends on prior research investigating entrepreneurial effort (Foo et al., 2009; Gielnik et al., 2015; Uy et al., 2015) and venture goal commitment (Uy et al., 2015) using a process approach. An insightful finding has been a negative relationship between venture goal commitment towards venture growth and subsequent entrepreneurial growth effort intensity. Raising an important question which is 'Why if early-stage entrepreneurs possess commitment towards venture growth, this may not translate into subsequent effort towards venture growth tasks?' As previously explained, a possible explanation may be action uncertainty which may lead to inaction. Thus, future research could investigate the contributing factors for this

negative relationship, as it could provide further insight into understanding why there is a high rate of new ventures not reaching the growth stage.

5.11 Practical implications

Entrepreneurship occurs through effort towards entrepreneurial tasks by the individual. Though, despite this simple understanding, the common practice in the field of entrepreneurship is to investigate people or organisations rather than the specific actions and processes of entrepreneurship itself. As a result, the majority of articles in highly ranked journals fail to discuss entrepreneurial action in detail. Shaver (2012a) describes entrepreneurial action not only being limited to new venture creation, but also innovation and growth. Entrepreneurship occurs through performing actions, although thought and planning may be necessary, it is not sufficient as entrepreneurship requires action (Corbett and Katz, 2012).

This study takes a similar view as scholars such as Schumpeter, Knight, Kirzner, and Mises. They have made significant contributions to the economic theory of entrepreneurship through modeling entrepreneurship as a function, behaviour, or activity. Thus, focusing on behaviours within the context of a process. Understanding entrepreneurial effort towards entrepreneurial tasks at various stages of the venture process is crucial, as it sheds light on how new ventures are created and the efforts required to attain venture growth.

As previously explained, the findings of this study demonstrate a positive relationship between implementation intention and subsequent entrepreneurial growth effort intensity. Venture growth is a long-term and complex goal, and similarly, previous studies have found positive effects associated with implementation intention in achieving long-term goals (van Hooft et al., 2005). This insight is not only valuable for entrepreneurs, but also entrepreneurship educators and business incubator directors. Entrepreneurs with intentions to grow their new ventures can be educated, as they are more likely to pursue and continue with their ventures. Furthermore, it is essential to recognise and investigate the limitations and challenges which prevent them from pursuing and growing their new ventures (Botha and Ras, 2016). One way to address these challenges is to practice developing implementation intentions that are specifically focused on venture growth tasks, rather more general implementation intentions. As general plans may lack proper direction, thus, lead to action uncertainty. Additionally, the findings suggest that non-

induced and self-generated implementation intentions are effective, supporting the view that individual's cues and responses are most relevant to their needs, when they are non-induced (Armitage, 2009; Wieber and Gollwitzer, 2017). Thus, more likely to translate into subsequent entrepreneurial effort.

The finding that goal intention towards venture growth tasks has a positive effect, and venture growth intention has a negative effect on subsequent entrepreneurial growth effort intensity is as equally important. The venture growth intention scale has measured the size of the growth intended, specific ways to achieve the growth, and challenges faced while trying to achieve venture growth. Early-stage entrepreneurs may become overwhelmed in dealing with challenges and competing goals, thus, leading to action uncertainty. If venture growth intention is not at the top of the goal hierarchy, this may lead to a lack of effort, as explained by van Gelderen (2009). Thus, these findings provide support that early-stage entrepreneurs require guidance and training from educators and mentors on how to prioritise their venture growth intentions so that resources such as time and attention are effectively allocated, to promote entrepreneurial effort towards venture growth tasks.

Managers within organisations may also encourage employees to develop implementations intentions which are specific and in line with their goals to provide a clear path on how to achieve them and reduce action uncertainty. The results have shown that plans on how, when, and where of specific actions lead to an increase in the probability of performing the behaviour. Furthermore, managers can minimise inaction as a result of action uncertainty by encouraging employees to set realistic goals and to prioritise their goals. Competing goals and challenges can have a negative impact on an individual's level of effort, therefore, these need to be addressed through realistic and specific planning which are self-generated by the employees themselves rather than more general plans with broad goals. Effective training could ensure that employees develop the skills to prioritise their goals and develop action plans which accurately address the specific goals. Support and adequate resources should also be provided to those who are facing challenges so that they can overcome and resolve these challenges rather than avoid or allow them to become permanent barriers.

In conclusion, the early-stage entrepreneurs in this study have all expressed an intention to grow their ventures. Thus, it is important for their support networks, mentors, and educators to guide and encourage them on growth tasks, which would

promote entrepreneurial effort towards venture growth tasks. The increased effort towards growth tasks may, in turn, improve the rate of new ventures entering the growth stage.

5.12 Limitations and recommendations for future directions

This study has considered the individual entrepreneur's perspective only through conducting within-individual analysis. Future research can adapt a team perspective, as entrepreneurial effort towards venture growth may be distributed between the team members. Furthermore, future research can investigate external contributing factors which may have an impact on entrepreneurial effort towards venture growth tasks leading to new venture growth. One such investigation could examine the role of the external enablers discussed by (Davidsson, Recker and von Briel, 2018) throughout the venture growth process. External enablers are explained as aggregate-level phenomena which emerging ventures may benefit. Thus, future research may show that these external enablers are also beneficial for new venture growth. Without entrepreneurs' initiative, external enablers cannot promote entrepreneurial action (Reynolds, 2005), which demonstrates the importance of investigating if and how entrepreneurial effort towards venture growth tasks is as a result of pursuing and exploiting opportunities created by the external enablers.

Further investigation of external factors could examine the impact of resource scarcity on entrepreneurial effort towards venture growth tasks. Prior research has demonstrated that resources (financial, human, and social capital) positively impact on new venture growth and effort towards venture growth tasks (Baum et al., 2001; Liao and Welsch, 2003; Samuelsson and Davidsson, 2009). Therefore, the lack of these resources is expected to have a significant negative impact on new venture growth. The findings of this study have indicated that these resources are commonly scarce among early-stage entrepreneurs. Future research can explore how early-stage entrepreneurs overcome some of the challenges faced with the lack of resources while focusing on venture growth. Therefore, providing in-depth insight into the coping strategies when facing challenges and setbacks specific to attempting to achieve the goal of new venture growth.

The focus of this study has been on early-stage entrepreneurs. Thus, future research can extend the theorising and empirical examination of entrepreneurial growth effort intensity beyond the early stages of the venture, to expand knowledge

on entrepreneurs' growth behaviour. The further understanding of growth behaviour is fundamental as there is a relative scarcity of studies in the area of new venture growth (Gilbert et al., 2006). Examining the growth behaviour of entrepreneurs at later stages of the venture process could support in motivating and training early-stage entrepreneurs to manage and implement venture growth tasks more effectively.

This study has been conducted for three months. Therefore, some of the relationships that were hypothesised and have not been supported could demonstrate more significant effects over a longer period. This period was chosen by the researcher with the consideration of minimising participant fatigue. This ESM study has had intense data collection periods with four notification prompts per day for six consecutive days over the study period. Thus, future research can investigate the relationships and effects of implementation intention and venture goal commitment on entrepreneurial growth effort intensity over longer periods.

However, studies investigating for longer periods may develop scales with fewer items when using ESM to reduce participant fatigue. Thus, increasing the level of commitment from the participants resulting in larger sample sizes. This study has not reduced the number of items in the validated scales and thus, has experienced reduced levels in participant commitment due to experiencing the burden of highly intensive sampling. However, ESM is fundamental in moving the field of entrepreneurship forward as it allows to investigate dynamic processes rather than capturing relationships in a static manner (Uy et al., 2010). Process-oriented research contributes to knowledge on understanding the 'how' in entrepreneurship (Davidsson and Wiklund, 2007; Low and MacMillan, 1988).

Lastly, it would be essential for future research to focus on strategic decisions relating to venture growth among early-stage entrepreneurs. To investigate which of these decisions (how to grow, or where the growth will occur) (Gilbert et al., 2006) are more likely to promote entrepreneurial growth effort intensity. Providing valuable insight on understanding the relationship between intention, decision, and action and thus, contributing to entrepreneurial commitment research.

5.13 Thesis conclusion

This study's main aim has been to conduct a process-oriented research to investigate the fluctuations in entrepreneurial effort towards venture growth tasks among early-stage entrepreneurs, as entrepreneurs tendency to act is crucial to the

entrepreneurial process. In the absence of effort towards growth by individual entrepreneurs, new venture growth would not exist. Furthermore, the investigation of the effects of implementation intention and venture goal commitment is fundamental to comprehend the complexity of the entrepreneurial process further. Further insight provided on goal intention and venture growth intention improve our understanding of the link between intentions and actual behaviour.

Process-oriented research is explained as crucial in contributing to the field of entrepreneurship (Shane and Venkataraman, 2000). This has been achieved through the implementation of smartphone-based experience sampling methodology (mESM), which involves repeated measures of the variables of interest over time. Thus, allowing to explain variation in fluctuating constructs, which have previously mainly been measured as stable constructs. As previously mentioned, the perspective this study takes on entrepreneurship is similar to scholars such as Schumpeter, Knight, Kirzner, and Mises, which is a focus on behaviours within the context of a process, as entrepreneurship requires action (Corbett and Katz, 2012). Therefore, the focus of the investigation has been on entrepreneurial effort towards venture growth tasks among early-stage entrepreneurs. Insight on entrepreneurial effort at different stages of the venture process is important as it creates further understanding on how new ventures are created and how new venture growth is attained.

Furthermore, this study has focused on within-individual variability through the implementation of ESM, as dynamic variables demonstrate patterns of change within the individual entrepreneur over time. Processes are examined as they unfold, rather than relationships being measured in a static manner (Uy et al., 2010). Therefore, the analysis for this study has focused on investigating the individual early-stage entrepreneur over the study period, and not making comparisons between the entrepreneurs.

This study contributes to the literature in the following areas which there is relative scarcity in knowledge within the field of entrepreneurship: (1) entrepreneurial effort while achieving long-term goals, (2) non-induced implementation intentions, (3) venture goal commitment, and (4) process-oriented research in entrepreneurship. Furthermore, the findings of this study have demonstrated the importance of clearly defining each of the constructs being investigated rather using a general definition. One such example is the construct

intention, which must be clearly defined and measured towards a specific goal, thus, being able to provide a more thorough understanding and contribution. Therefore, the constructs investigated in this study have been clearly defined, these include implementation intention towards venture growth tasks, venture goal commitment towards venture growth, goal intention towards venture growth tasks and venture growth intention.

The findings of this study have provided valuable insight into entrepreneurial effort towards venture growth tasks among early-stage entrepreneurs. Non-induced implementation intentions which are most specific to the entrepreneur's needs, are shown to have a positive effect on subsequent entrepreneurial growth effort intensity. Thus, demonstrating the importance of specific if-then plans which provide entrepreneurs more clarity and action certainty.

The findings showing a negative association between venture goal commitment towards venture growth and entrepreneurial growth effort intensity has demonstrated that venture growth tasks may be perceived as more complex and overwhelming in comparison to venture creation tasks. This perception of the complexity of venture growth tasks, thus, may lead to action uncertainty and in turn, inaction (van Gelderen, 2009). This finding re-emphasises the importance of implementation intentions to provide the entrepreneurs with a clearer direction for performing growth specific tasks. The negative association may also suggest that among early-stage entrepreneurs, venture goal commitment towards venture growth is partial rather than total. This can also be addressed by ensuring that early-stage entrepreneurs effectively allocate time, energy, and resources towards venture growth tasks.

The direct effect on subsequent entrepreneurial growth effort intensity and the mediation of implementation intention being positive for goal intention and negative for venture growth intention, demonstrates the importance of defining the type of intention. As previously mentioned, these definitions should provide a clear insight into the goals the entrepreneurs are working towards. Furthermore, it is important to measure commitment towards effort as the current scale is measuring commitment more towards intention and decision rather than actual behaviour, as commitment is demonstrated through behaviour (Beauvois and Joule, 1981). When measuring

entrepreneurial effort, it is also important to define what the behaviour is directed towards, such as it may be towards venture creation tasks or venture growth tasks.

Understanding the challenges and obstacles which limit entrepreneurial effort towards venture growth tasks among early-stage entrepreneurs is crucial, as some of these prevent new ventures reaching the growth stage. The most common challenges reported by the participants have been lack of access to financial capital, lack of access to human capital, lack of founder experience and knowledge, high competition, and lack of time. A thorough investigation of these challenges among early-stage entrepreneurs would allow for the implementation of effective strategies to promote entrepreneurial effort towards venture growth tasks.

In conclusion, this study aims to make a significant contribution to the field of entrepreneurship through a process-oriented research, emphasising the importance of viewing and investigating entrepreneurship as a dynamic and complex process which occurs over time.

5.14 **Chapter conclusion**

This is the final chapter in this thesis. The main aim of this chapter has been to discuss the results of the multilevel regression models and the missing data associated with this ESM study. Furthermore, discussion on the responses for the open-ended questions for the construct venture growth intention have provided insight into the early-stage entrepreneurs' strategies and challenges relating to venture growth. This insight has been extremely valuable in further understanding the difficulties faced while operating a new venture and trying to achieve venture growth.

The discussions on the theoretical and practical implications of this study have highlighted the contributions this study has made in enhancing knowledge on new venture growth and effort towards venture growth tasks. Entrepreneurship educators and incubator directors can promote effort towards growth-related tasks among early-stage entrepreneurs through the training of developing effective implementation intentions. The explanations on the limitations and recommendations for future directions aim to encourage researchers to extend on this study, as entrepreneurial effort towards venture growth tasks is fundamental to the survival of new ventures.

Reference List

Aarts, H., Dijksterhuis, A. & Midden, C. 1999. To plan or not to plan? Goal achievement or interrupting the performance of mundane behaviors. *European Journal of Social Psychology,* 29**,** 971-979.

Abernathy, W. J. & Clark, K. B. 1985. Innovation: Mapping the winds of creative destruction. *Research policy,* 14**,** 3-22.

Acs, Z. J. & Armington, C. 2006. *Entrepreneurship, geography, and American economic growth*, Cambridge University Press.

Acs, Z. J. & Audretsch, D. B. 1990. The determinants of small-firm growth in US manufacturing. *Applied Economics,* 22**,** 143-153.

Adam, A.-F. & Fayolle, A. 2016. Can implementation intention help to bridge the intention–behaviour gap in the entrepreneurial process? An experimental approach. *The International Journal of Entrepreneurship and Innovation,* 17**,** 80-88.

Adam, A. F. & Fayolle, A. 2015. Bridging the entrepreneurial intention–behaviour gap: the role of commitment and implementation intention. *International Journal of Entrepreneurship and Small Business,* 25**,** 36-54.

Adriaanse, M. A., Vinkers, C. D., De Ridder, D. T., Hox, J. J. & De Wit, J. B. 2011. Do implementation intentions help to eat a healthy diet? A systematic review and meta-analysis of the empirical evidence. *Appetite,* 56**,** 183-193.

Afshartous, D. 1995. Determination of sample size for multilevel model design. *American Educational Research Association.* San Francisco, CA.

Aguinis, H., Ansari, M. A., Jayasingam, S. & Aafaqi, R. 2008. Perceived entrepreneurial success and social power. *Management Research: Journal of the Iberoamerican Academy of Management,* 6**,** 121-137.

Aguinis, H. & Harden, E. E. 2009. *Sample size rules of thumb*, Routledge: New York.

Aiken, L. S., West, S. G. & Reno, R. R. 1991. *Multiple regression: Testing and interpreting interactions*, Sage.

Ajzen, I. 1991. The theory of planned behavior. *Organizational behavior and human decision processes,* 50**,** 179-211.

Ajzen, I. 1987. Attitudes, traits, and actions: Dispositional prediction of behavior in personality and social psychology. *Advances in experimental social psychology.* Elsevier.

Ajzen, I. 1988. *Attitudes, personality and behavior,* Milton Keynes, Open University Press.

Ajzen, I., Czasch, C. & Flood, M. G. 2009. From intentions to behavior: Implementation intention, commitment, and conscientiousness. *Journal of Applied Social Psychology,* 39**,** 1356-1372.

Aldrich, H. 1999. *Organizations evolving*, Sage.

Aldrich, H. & Wiedenmayer, G. 1993. From traits to rates: An ecological perspective on organizational foundings. J. Katz, R. Brockhaus, eds. Advances in Entrepreneurship, Firm Emergence, and Growth, Vol. I. JAI Press, Greenwich, CT.

Aldrich, H., Zimmer, C., Sexton, D. & Smilor, R. 1986. The art and science of entrepreneurship. *Ballinger, Cambridge, MA***,** 3-23.

Aldrich, J. 1997. RA Fisher and the making of maximum likelihood 1912-1922. *Statistical science,* 12**,** 162-176.

Alliger, G. M. & Williams, K. J. 1993. Using signal-contingent experience sampling methodology to study work in the field: A discussion and illustration examining task perceptions and mood. *Personnel Psychology,* 46**,** 525-549.

Allison, P. D. Handling missing data by maximum likelihood. SAS global forum, 2012. Statistical Horizons Haverford, PA, USA, 1-21.

Alvarez, S. & Barney, J. B. 2007. The entrepreneurial theory of the firm. *Journal of Management Studies,* 44**,** 1057-1063.

Alvarez, S. A. & Barney, J. B. 2005. How do entrepreneurs organize firms under conditions of uncertainty? *Journal of management,* 31**,** 776-793.

Amabile, T. M. & Kramer, S. J. 2011. The power of small wins. *Harvard Business Review,* 89**,** 70-80.

Amason, A. C., Shrader, R. C. & Tompson, G. H. 2006. Newness and novelty: Relating top management team composition to new venture performance. *Journal of Business Venturing,* 21**,** 125-148.

An, W., Zhang, J., You, C. & Guo, Z. 2018. Entrepreneur's creativity and firm-level innovation performance: bricolage as a mediator. *Technology Analysis & Strategic Management,* 30**,** 838-851.

Anderson, C. J. 2003. The psychology of doing nothing: Forms of decision avoidance result from reason and emotion. *Psychol. Bull.*

Ansoff, H. I. 1965. *Corporate strategy: business policy for growth and expansion*, McGraw-Hill.

Ardichvili, A., Cardozo, R. & Ray, S. 2003. A theory of entrepreneurial opportunity identification and development. *Journal of Business venturing,* 18**,** 105-123.

Armitage, C. J. 2009. Effectiveness of experimenter-provided and self-generated implementation intentions to reduce alcohol consumption in a sample of the general population: a randomized exploratory trial. *Health Psychology,* 28**,** 545.

Armitage, C. J. & Conner, M. 2001. Efficacy of the theory of planned behaviour: A meta-analytic review. *British journal of social psychology,* 40**,** 471-499.

Armstrong, S. & Wilkinson, A. 2007. Processes, procedures and journal development: past, present and future. *International Journal of Management Reviews,* 9**,** 81-93.

Arthurs, J. D. & Busenitz, L. W. 2006. Dynamic capabilities and venture performance: The effects of venture capitalists. *Journal of business venturing,* 21**,** 195-215.

Atkinson, J. W. & Birch, D. 1974. The dynamics of achievement-oriented activity. *Motivation and achievement,* 271**,** 325.

Audretsch, D. B., Keilbach, M. & Lehmann, E. 2005. The knowledge spillover theory of entrepreneurship and technological diffusion. *University entrepreneurship and technology transfer.* Emerald Group Publishing Limited.

Austin, J. T. & Vancouver, J. B. 1996. Goal Constructs in Psychology: Structure, Process, and Content. *Psychological Bulletin,* 122**,** 338-375.

Baker, T. & Nelson, R. E. 2005. Creating something from nothing: Resource construction through entrepreneurial bricolage. *Administrative science quarterly,* 50**,** 329-366.

Bamford, C., Dean, T. & McDougall, P. Entry strategies and the growth of bank start-ups in the US: A critical examination of the niche prescription for new ventures. ICSB World Conference, Brisbane, Australia, June, 2000.

Bamford, C. E., Dean, T. J. & Douglas, T. J. 2004. The temporal nature of growth determinants in new bank foundings: implications for new venture research design. *Journal of Business Venturing,* 19**,** 899-919.

Banbury, C. M. & Mitchell, W. 1995. The effect of introducing important incremental innovations on market share and business survival. *Strategic management journal,* 16**,** 161-182.

Bandura, A. 1997. *Self-efficacy: The exercise of control*, Macmillan.

Bandura, A. & Jourden, F. J. 1991. Self-regulatory mechanisms governing the impact of social comparison on complex decision making. *Journal of personality and social psychology,* 60**,** 941.

Bargh, J. & Chartrand, T. 1999. The unbearable automaticity of being. *The American Psychologist,* 54**,** 462-479.

Barney, J. B. 2001. Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of management,* 27**,** 643-650.

Barney, J. B. & Hesterly, W. 1996. Organizational economics: Understanding the relationship between organizations and economic analysis. *In:* Clegg, S. R. & Hardy, C. (eds.) *Hanbook of Organization Studies.* Thousand Oaks, CA: Sage Publications.

Baron, R. A. 2004. The cognitive perspective: a valuable tool for answering entrepreneurship's basic " why" questions. *Journal of Business Venturing,* 19**,** 221-239.

Baron, R. A. 2006a. Entrepreneurship: A process perspective. *In:* Baum, J. R., Frese, M. & Baron, R. A. (eds.) *The psychology of entrepreneurship.* Mahwah, NJ.

Baron, R. A. 2006b. Opportunity recognition as pattern recognition: how entrepreneurs 'connect the dots' to recognize new business opportunities. *Academy of Management Perspectives,* 20**,** 104-119.

Baron, R. A. 1998. Cognitive mechanisms in entrepreneurship: Why and when enterpreneurs think differently than other people. *Journal of Business Venturing,* 13**,** 275-294.

Baron, R. A. 2007. Behavioral and cognitive factors in entrepreneurship: Entrepreneurs as the active element in new venture creation. *Strategic entrepreneurship journal,* 1**,** 167-182.

Baron, R. A. & Ensley, M. D. 2006. Opportunity recognition as the detection of meaningful patterns: Evidence from comparisons of novice and experienced entrepreneurs. *Management science,* 52**,** 1331-1344.

Baron, R. A. & Markman, G. D. 2000. Beyond social capital: How social skills can enhance entrepreneurs' success. *Academy of Management Perspectives,* 14**,** 106-116.

Baron, R. A. & Markman, G. D. 2003. Beyond social capital: The role of entrepreneurs' social competence in their financial success. *Journal of business venturing,* 18**,** 41-60.

Baron, R. A. & Tang, J. 2007. Entrepreneurs' social skills and new venture performance: Mediating mechanisms and cultural generality. *Journal of Management (in press)*.

Barrett, L. F. & Barrett, D. J. 2001. An introduction to computerized experience sampling in psychology. *Social Science Computer Review,* 19**,** 175-185.

Barringer, B. R., Jones, F. F. & Neubaum, D. O. 2005. A quantitative content analysis of the characteristics of rapid-growth firms and their founders. *Journal of business venturing,* 20**,** 663-687.

Barta, W. D., Tennen, H. & Litt, M. D. 2011. Measurement reactivity in diary research. *In:* Mehl, M. R. & Conner, T. A. (eds.) *Handbook of research methods for studying daily life.* New York, NY: Guilford Press.

Bateman, T. S. & Barry, B. 2012. Masters of the long haul: Pursuing long-term work goals. *Journal of Organizational Behavior,* 33**,** 984-1006.

Battistelli, A., Galletta, M., Portoghese, I. & Vandenberghe, C. 2013. Mindsets of commitment and motivation: Interrelationships and contribution to work outcomes. *Journal of Psychology,* 147**,** 17-48.

Baum, J. R. & Locke, E. A. 2004. The relationship of entrepreneurial traits, skill, and motivation to subsequent venture growth. *Journal of applied psychology,* 89**,** 587.

Baum, J. R., Locke, E. A. & Smith, K. G. 2001. A multidimensional model of venture growth. *Academy of management journal,* 44**,** 292-303.

Baumeister, R., Gailliot, M., Dewall, C. & Oaten, M. 2006. Self-Regulation and Personality: How Interventions Increase Regulatory Success, and How Depletion Moderates the Effects of Traits on Behavior. *Journal of Personality,* 74**,** 1773-1801.

Baumeister, R. F., Campbell, J. D., Krueger, J. I. & Vohs, K. D. 2003. Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological science in the public interest,* 4**,** 1-44.

Baumeister, R. F. & Heatherton, T. F. 1996. Self-Regulation Failure: An Overview. *Psychological Inquiry,* 7**,** 1-15.

Baumeister, R. F., Vohs, K. D., Dewall, C. N. & Zhang, L. 2007. How emotion shapes behavior: feedback, anticipation, and reflection, rather than direct causation. *Personality and social psychology review : an official journal of the Society for Personality and Social Psychology, Inc,* 11**,** 167.

Baysinger, B. D., Meiners, R. E. & Zeithaml, C. P. 1982. *Barriers to corporate growth,* Lexington, MA, Lexington Books.

Beal, R. M. 2000. Competing effectively: environmental scanning, competitive strategy, and organizational performance in small manufacturing firms. *Journal of small business management,* 38**,** 27.

Beauvois, J.-L. & Joule, R. 1981. *Soumission et idéologies: psychosociologie de la rationalisation*, Presses universitaires de France.

Becker, H. S. 1960. Notes on the concept of commitment. *American journal of Sociology,* 66**,** 32-40.

Bélanger-Gravel, A., Godin, G. & Amireault, S. 2013. A meta-analytic review of the effect of implementation intentions on physical activity. *Health psychology review,* 7**,** 23-54.

Belitski, M. & Heron, K. 2017. Expanding entrepreneurship education ecosystems. *Journal of Management Development,* 36**,** 163-177.

Bem, D. J. 1972. Self-perception theory1. *Advances in experimental social psychology.* Elsevier.

Benyovszki, A., Nagy, Á. & Petru, T. P. 2013. Is there a difference between intrapreneurs and early-stage entrepreneurs in Romania? *Theoretical and Applied Economics,* 20**,** 53-60.

Bergkvist, L. & Rossiter, J. R. 2009. Tailor-made single-item measures of doubly concrete constructs. *International Journal of Advertising,* 28**,** 607-621.

Beynon, M. J., Jones, P. & Pickernell, D. 2016. Country-based comparison analysis using fsQCA investigating entrepreneurial attitudes and activity. *Journal of Business Research,* 69**,** 1271-1276.

Bhide, A. 1994. How entrepreneurs craft strategies that work. *Harvard Business Review,* 72**,** 150-161.

Bird, B. 1988. Implementing entrepreneurial ideas: The case for intention. *Academy of management Review,* 13**,** 442-453.

Bird, B. & Schjoedt, L. 2009. Entrepreneurial behavior: Its nature, scope, recent research, and agenda for future research. *Understanding the entrepreneurial mind.* Springer.

Bird, B., Schjoedt, L. & Baum, J. R. 2012. Editor's introduction. Entrepreneurs' behavior: Elucidation and measurement. *Entrepreneurship theory and practice,* 36**,** 889-913.

Birley, S. 1987. New ventures and employment growth. *Journal of business venturing,* 2**,** 155-165.

Bitler, M. P., Moskowitz, T. J. & Vissing-Jørgensen, A. 2005. Testing agency theory with entrepreneur effort and wealth. *The Journal of Finance,* 60**,** 539-576.

Bloodgood, J. M., Sapienza, H. J. & Almeida, J. G. 1996. The internationalization of new high-potential US ventures: Antecedents and outcomes. *Entrepreneurship theory and practice,* 20**,** 61-76.

Boeker, W. & Wiltbank, R. 2005. New venture evolution and managerial capabilities. *Organization Science,* 16**,** 123-133.

Bollen, K. A. & Curran, P. J. 2006. *Latent curve models: A structural equation perspective*, John Wiley & Sons.

Bonett, D. G. & Wright, T. A. 2015. Cronbach's alpha reliability: Interval estimation, hypothesis testing, and sample size planning. *Journal of Organizational Behavior,* 36**,** 3-15.

Botha, M. & Ras, R. 2016. Entrepreneurship education: Enhancing or discouraging graduate start-up at the University of Pretoria. *Africa Education Review,* 13**,** 96-114.

Bouma, G. D., Atkinson, G. B. J. & Dixon, B. R. 1995. *A handbook of social science research*, Oxford University Press, USA.

Boutaiba, S. 2004. A moment in time. *Narrative and discursive approaches in entrepreneurship: a second movements in entrepreneurship book***,** 22-56.

Box, T. M., White, M. A. & Barr, S. H. 1994. A contingency model of new manufacturing firm performance. *Entrepreneurship Theory and Practice,* 18**,** 31-45.

Brandstätter, V., Lengfelder, A. & Gollwitzer, P. M. 2001. Implementation intentions and efficient action initiation. *Journal of Personality and Social Psychology,* 81**,** 946.

Bresson, R. 1975. *Notes on the cinematrographer, '1950-1958: The real',* Paris, Green Integer.

Brickell, T. A., Chatzisarantis, N. L. & Pretty, G. M. 2006. Using past behaviour and spontaneous implementation intentions to enhance the utility of the theory of planned behaviour in predicting exercise. *British journal of health psychology,* 11**,** 249-262.

Brieckman, P. 1987. *Commitment, Conflict and Caring,* Englewood Cliffs, NJ, Prentice Hall.

Brockhaus, R. H. 1982. The psychology of the entrepreneur. *Encyclopedia of entrepreneurship***,** 39-57.

Brodack, F. & Sinell, A. 2017. Promoting Entrepreneurial Commitment: The Benefits of Interdisciplinarity. *Technology Innovation Management Review,* 7.

Brouthers, K. D. & Nakos, G. 2004. SME entry mode choice and performance: A transaction cost perspective. *Entrepreneurship theory and practice,* 28**,** 229-247.

Brown, S. P. & Leigh, T. W. 1996. A new look at psychological climate and its relationship to job involvement, effort, and performance. *Journal of Applied Psychology,* 81**,** 358.

Browne, W. J. & Draper, D. 2000. Implementation and performance issues in the Bayesian and likelihood fitting of multilevel models. *Computational Statistics,* 15**,** 391-420.

Brüderl, J., Preisendörfer, P. & Ziegler, R. 1992. Survival chances of newly founded business organizations. *American sociological review***,** 227-242.

Brundin, E. 2007. 11 Catching it as it happens. *Handbook of qualitative research methods in entrepreneurship***,** 279.

Brunstein, J. C. 1993. Personal goals and subjective well-being: A longitudinal study. *Journal of Personality and Social Psychology,* 65**,** 1061.

Brunstein, J. C. & Gollwitzer, P. M. 1996. Effects of failure on subsequent performance: The importance of self-defining goals. *Journal of personality and social psychology,* 70**,** 395.

Brush, C. G. & Chaganti, R. 1998. Business without glamour? An analysis of resources on performance by size and age in small service and retail firms. *Journal of Business Venturing,* 14**,** 233-257.

Brush, C. G., Greene, P. G. & Hart, M. M. 2001. From initial idea to unique advantage: The entrepreneurial challenge of constructing a resource base. *Academy of Management Perspectives,* 15**,** 64-78.

Brush, C. G., Manolova, T. S. & Edelman, L. F. 2008. Properties of emerging organizations: An empirical test. *Journal of business venturing,* 23**,** 547-566.

Bruyat, C. 1993. *Création d'entreprise: contributions épistémologiques et modélisation.* Université Pierre Mendès-France-Grenoble II.

Bruyat, C. & Julien, P.-A. 2001. Defining the field of research in entrepreneurship. *Journal of business venturing,* 16**,** 165-180.

Buchele, R. B. 1967. *Business policy in growing firms: A manual for evaluation*, Chandler Pub. Co.

Buederal, J., Preisendoerfer, P. & Ziegler, R. 1992. Survival chances of newly founded business organizations. *American Sociological Review,* 57**,** 227-242.

Burt, R. S. 1992. Structural Holes: The Social Structure of Competition.

Busing, F. 1993. Distribution characteristics of variance estimates in two-level models. Netherlands: Leiden University.

Bygrave, W. & Zacharakis, A. 2007. Opportunity Recognition, Shaping and Reshaping. *Entreprenuership. John Wiley &Sons, Inc, USA. Cap,* 3.

Bygrave, W. D. 2020. *Entrepreneurship, 5th Australia and New Zealand Edition*, New York : Wiley.

Cantner, U., Goethner, M. & Silbereisen, R. K. 2017. Schumpeter's entrepreneur–A rare case. *Journal of Evolutionary Economics,* 27**,** 187-214.

Capelleras, J. L., Greene, F. J., Kantis, H. & Rabetino, R. 2010. Venture creation speed and subsequent growth: Evidence from South America. *Journal of Small Business Management,* 48**,** 302-324.

Cardon, M. S., Wincent, J., Singh, J. & Drnovsek, M. 2009. The nature and experience of entrepreneurial passion. *Academy of management Review,* 34**,** 511-532.

Cardon, M. S., Zietsma, C., Saparito, P., Matherne, B. P. & Davis, C. 2005. A tale of passion: New insights into entrepreneurship from a parenthood metaphor. *Journal of Business Venturing,* 20**,** 23-45.

Carraro, N. & Gaudreau, P. 2013. Spontaneous and experimentally induced action planning and coping planning for physical activity: A meta-analysis. *Psychology of Sport and Exercise,* 14**,** 228-248.

Carsrud, A. & Brännback, M. 2011. Entrepreneurial motivations: what do we still need to know? *Journal of Small Business Management,* 49**,** 9-26.

Carter, L.-A. 2016. *Rigorous methods for the analysis, reporting and evaluation of ESM style data.* University of Manchester.

Carter, N. M., Gartner, W. B. & Reynolds, P. D. 1996. Exploring start-up event sequences. *Journal of Business Venturing,* 11**,** 151-166.

Carver, C. S., Sutton, S. & Scheier, M. 2000. Action, emotion, and personality: Emerging conceptual integration. *Personality And Social Psychology Bulletin,* 26**,** 741-751.

Casson, M. 2000. *Enterprise and leadership: studies on firms, markets, and networks*, Edward Elgar Publishing.

Castrogiovanni, G. J. 1991. Environmental munihcence; a theoretical assessment. *Academy of management review,* 16**,** 542-565.

Chaiken, S. & Trope, Y. 1999. *Dual-process theories in social psychology,* New York, New York : Guilford Press.

Chan, D. 1998. Functional relations among constructs in the same content domain at different levels of analysis: A typology of composition models. *Journal of applied psychology,* 83**,** 234.

Chandler, G. N. & Hanks, S. H. 1994a. Market attractiveness, resource-based capabilities, venture strategies, and venture performance. *Journal of business venturing,* 9**,** 331-349.

Chandler, G. N. & Hanks, S. H. 1994b. Founder competence, the environment, and venture performance. *Entrepreneurship theory and practice,* 18**,** 77-89.

Chen, H. S., Mitchell, R. K., Brigham, K. H., Howell, R. & Steinbauer, R. 2018. Perceived psychological distance, construal processes, and abstractness of entrepreneurial action. *Journal of Business Venturing,* 33**,** 296-314.

Chen, P.-C., Chan, W.-C., Hung, S.-W. & Lin, D.-Z. 2020. How entrepreneurs recognise entrepreneurial opportunity and its gaps: a cognitive theory perspective. *Technology Analysis & Strategic Management,* 32**,** 223-238.

Chia, R. & Holt, R. 2006. Strategy as practical coping: A Heideggerian perspective. *Organization studies,* 27**,** 635-655.

Chrisman, J. J., Bauerschmidt, A. & Hofer, C. W. 1998. The determinants of new venture performance: An extended model. *Entrepreneurship Theory and Practice,* 23**,** 5-29.

Chrisman, J. J., McMullan, E. & Hall, J. 2005. The influence of guided preparation on the long-term performance of new ventures. *Journal of Business Venturing,* 20**,** 769-791.

Churchill, N. 1997. Breaking down the wall: scaling the ladder. *Mastering Enterprise, Financial Times/Pitman, London*.

Churchill, N. C. & Lewis, V. L. 1983. The five stages of small business growth. *Harvard business review,* 61**,** 30-50.

Churchill, S. & Jessop, D. 2010. Spontaneous implementation intentions and impulsivity: Can impulsivity moderate the effectiveness of planning strategies? *British Journal of Health Psychology,* 15**,** 529-541.

Cianciolo, A. T., Matthew, C., Sternberg, R. J. & Wagner, R. K. 2006. Tacit knowledge, practical intelligence, and expertise. *The Cambridge handbook of expertise and expert performance***,** 613-632.

Clifton, D. & Harding, R. 1986. A statistical analysis of the psychometric properties of the SRI entrepreneur interview. *Gallup Report*.

Conner, M., Sheeran, P., Norman, P. & Armitage, C. J. 2000. Temporal stability as a moderator of relationships in the theory of planned behaviour. *British Journal of Social Psychology,* 39**,** 469-493.

Cooper, A., Ramachandran, M. & Schoorman, D. 1998. Time allocation patterns of craftsmen and administrative entrepreneurs: Implications for financial performance. *Entrepreneurship theory and practice,* 22**,** 123-136.

Cooper, A. C. 1985. The role of incubator organizations in the founding of growth-oriented firms. *Journal of business Venturing,* 1**,** 75-86.

Cooper, A. C., Gimeno-Gascon, F. J. & Woo, C. Y. 1994. Initial human and financial capital as predictors of new venture performance. *Journal of business venturing,* 9**,** 371-395.

Corbett, A. C. & Hmieleski, K. M. 2007. The conflicting cognitions of corporate entrepreneurs. *Entrepreneurship Theory and Practice,* 31**,** 103-121.

Corbett, A. C. & Katz, J. A. 2012. Introduction: The action of entrepreneurs. *Entrepreneurial action.* Emerald Group Publishing Limited.

Costa, S. F., Santos, S. C., Wach, D. & Caetano, A. 2018. Recognizing Opportunities across Campus: The Effects of Cognitive Training and Entrepreneurial Passion on the Business Opportunity Prototype. *Journal of small business management,* 56**,** 51-75.

Courvoisier, D. S., Eid, M., Lischetzke, T. & Schreiber, W. H. 2010. Psychometric properties of a computerized mobile phone method for assessing mood in daily life. *Emotion,* 10**,** 115.

Covey, S. R. 1990. *The seven habits of highly effective people : restoring the character ethic,* New York, New York : Simon and Schuster.

Coviello, N. E. & Munro, H. J. 1995. Growing the entrepreneurial firm: networking for international market development. *European journal of marketing,* 29**,** 49-61.

Cranford, J. A., Shrout, P. E., Iida, M., Rafaeli, E., Yip, T. & Bolger, N. 2006. A procedure for evaluating sensitivity to within-person change: Can mood measures in diary studies detect change reliably? *Personality and Social Psychology Bulletin,* 32**,** 917-929.

Cronbach, L. J. 1951. Coefficient alpha and the internal structure of tests. *psychometrika,* 16**,** 297-334.

Csikszentmihalyi, M. & Larson, R. 2014. Validity and reliability of the experience-sampling method. *Flow and the foundations of positive psychology.* Springer.

D'agostino, R. B., Belanger, A. & D'Agostino Jr, R. B. 1990. A suggestion for using powerful and informative tests of normality. *The American Statistician,* 44**,** 316-321.

D'souza, D. E. & McDougall, P. P. 1989. Third world joint venturing: a strategic option for the smaller firm. *Entrepreneurship Theory and Practice,* 13**,** 19-34.

Davidsson, P. 2005. Researching Entrepreneurship. *International Studies in Entrepreneurship ReDIF-Book*.

Davidsson, P. 1991. Continued entrepreneurship: Ability, need, and opportunity as determinants of small firm growth. *Journal of business venturing,* 6**,** 405-429.
Davidsson, P. 2006. Nascent entrepreneurship: empirical studies and developments. *Foundations and Trends® in Entrepreneurship,* 2**,** 1-76.
Davidsson, P. & Honig, B. 2003. The role of social and human capital among nascent entrepreneurs. *Journal of business venturing,* 18**,** 301-331.
Davidsson, P., Recker, J. & von Briel, F. 2018. External enablement of new venture creation: A framework. *Academy of Management Perspectives*.
Davidsson, P. & Wiklund, J. 2007. Levels of analysis in entrepreneurship research: Current research practice and suggestions for the future. *Entrepreneurship.* Springer.
De Clercq, D., Menzies, T. V., Diochon, M. & Gasse, Y. 2009. Explaining nascent entrepreneurs' goal commitment: An exploratory study. *Journal of Small Business & Entrepreneurship,* 22**,** 123-139.
de Vet, H. C., Mokkink, L. B., Mosmuller, D. G. & Terwee, C. B. 2017. Spearman–Brown prophecy formula and Cronbach's alpha: different faces of reliability and opportunities for new applications. *Journal of Clinical Epidemiology,* 85**,** 45-49.
Delespaul, P. 1995. Assessing schizophrenia in daily life: the experience sampling method.
Delmar, F., Davidsson, P. & Gartner, W. B. 2003. Arriving at the high-growth firm. *Journal of business venturing,* 18**,** 189-216.
Delmar, F. & Shane, S. 2004. Legitimating first: Organizing activities and the survival of new ventures. *Journal of business venturing,* 19**,** 385-410.
Delmar, F. & Wiklund, J. Growth motivation and growth: Untangling causal relationships Academy of Management Proceedings, 2003. Academy of Management Briarcliff Manor, NY 10510, H1-H6.
Dew, N., Read, S., Sarasvathy, S. D. & Wiltbank, R. 2009. Effectual versus predictive logics in entrepreneurial decision-making: Differences between experts and novices. *Journal of business venturing,* 24**,** 287-309.
Dholakia, U. M. & Pbagozzi, R. 2003. As Time Goes By: How Goal and Implementation Intentions Influence Enactment of Short-Fuse Behaviors1. *Journal of Applied Social Psychology,* 33**,** 889-922.
Diener, E. & Seligman, M. E. 2002. Very happy people. *Psychological science,* 13**,** 81-84.
Dillman, D. A. Procedures for conducting government-sponsored establishment surveys: Comparisons of the total design method (TDM), a traditional cost-compensation model, and tailored design. Proceedings of American Statistical Association, Second International Conference on Establishment Surveys, 2000. 343-352.
Dimotakis, N., Ilies, R. & Judge, T. A. 2013. Experience sampling methodology. *Modern Research Methods for the Study of Behavior in Organizations***,** 319-348.
Dirks, K. T. & Ferrin, D. L. 2001. The role of trust in organizational settings. *Organization science,* 12**,** 450-467.
Doern, R. 2009. Investigating barriers to SME growth and development in transition environments: A critique and suggestions for developing the methodology. *International Small Business Journal,* 27**,** 275-305.
Doern, R. 2011. Understanding how perceived barriers influence growth intentions and behaviours. *International Journal of Entrepreneurial Behaviour & Research,* 17**,** 488-514.
Drucker, P. F. 1985. *Innovation and entrepreneurship,* New York, NY, Harper & Row.

Dube, L., Jodoin, M. & Kairouz, S. 1997. Development and validation of three-factor model commitment: From dynamic process to personal disposition. *In:* Montreal, U. D. (ed.) *Manuscrit soumis pour publication.*

Duckworth, A. L., Peterson, C., Matthews, M. D. & Kelly, D. R. 2007. Grit: perseverance and passion for long-term goals. *Journal of personality and social psychology,* 92**,** 1087.

Durand, R. & Coeruderoy, R. 2001. Age, order of entry, strategic orientation, and organizational performance. *Journal of Business Venturing,* 16**,** 471-494.

Dutta, D. K. & Thornhill, S. 2008. The evolution of growth intentions: Toward a cognition-based model. *Journal of business venturing,* 23**,** 307-332.

Eccles, J. S. & Wigfield, A. 2002. Motivational beliefs, values, and goals. *Annual review of psychology,* 53**,** 109-132.

Edelman, L. & Yli-Renko, H. 2010. The impact of environment and entrepreneurial perceptions on venture-creation efforts: bridging the discovery and creation views of entrepreneurship. *Entrepreneurship Theory and Practice,* 34**,** 833-856.

Edelman, L. F., Brush, C. G., Manolova, T. S. & Greene, P. G. 2010. Start-up motivations and growth intentions of minority nascent entrepreneurs. *Journal of Small Business Management,* 48**,** 174-196.

Edmondson, A. C. & McManus, S. E. 2007. Methodological fit in management field research. *Academy of management review,* 32**,** 1246-1264.

Eisenhardt, K. M. & Martin, J. A. 2000. Dynamic capabilities: what are they? *Strategic management journal,* 21**,** 1105-1121.

Eisenhardt, K. M. & Schoonhoven, C. B. 1990. Organizational growth: Linking founding team, strategy, environment, and growth among US semiconductor ventures, 1978-1988. *Administrative science quarterly***,** 504-529.

Ekelund Jr, R. B. & Hebert, R. F. 1990. Alternative visions of the entrepreneur: Cantillon, Say, Dupuit. *Perspectives on the History of Economic Thought,* 3**,** 117-123.

Elfring, T. & Hulsink, W. 2003. Networks in entrepreneurship: The case of high-technology firms. *Small business economics,* 21**,** 409-422.

Erikson, T. 2002. Goal-setting and entrepreneurial self-efficacy. *The International Journal of Entrepreneurship and Innovation,* 3**,** 183-189.

Farmer, S. M., Yao, X. & Kung–Mcintyre, K. 2011. The behavioral impact of entrepreneur identity aspiration and prior entrepreneurial experience. *Entrepreneurship Theory and practice,* 35**,** 245-273.

Fayolle, A. 2013. Personal views on the future of entrepreneurship education. *Entrepreneurship & Regional Development,* 25**,** 692-701.

Fayolle, A. 2007. *Entrepreneurship and new value creation: the dynamic of the entrepreneurial process*, Cambridge university press.

Fayolle, A., Basso, O. & Tornikoski, E. T. 2011. 10 Entrepreneurial commitment and new venture creation: a conceptual exploration. *Handbook of research on new venture creation***,** 160.

Fayolle, A. & Liñán, F. 2014. The future of research on entrepreneurial intentions. *Journal of Business Research,* 67**,** 663-666.

Fayolle, A., Liñán, F. & Moriano, J. A. 2014. Beyond entrepreneurial intentions: values and motivations in entrepreneurship. *International Entrepreneurship and Management Journal,* 10**,** 679-689.

Feldman, M. P. & Florida, R. 1994. The Geographic Sources of Innovation: Technological Infrastructure and Product Innovation in the United States. *Annals of the Association of American Geographers,* 84**,** 210-229.

Ferris, G. R., Witt, L. A. & Hochwarter, W. A. 2001. Interaction of social skill and general mental ability on job performance and salary. *Journal of Applied Psychology,* 86**,** 1075.

Festinger, L. 1964. Conflict, decision, and dissonance.

Festinger, L. 1957. 1957 A Theory of Cognitive Dissonance. Stanford, Calif.: Stanford University Press.

Fiet, J. O., Clouse, V. G. & Norton Jr, W. I. 2004. Systematic search by repeat entrepreneurs. *Opportunity identification and entrepreneurial behavior***,** 1-27.

Fishbach, A. & Dhar, R. 2005. Goals as excuses or guides: The liberating effect of perceived goal progress on choice. *Journal of Consumer Research,* 32**,** 370-377.

Fisher, C. D. & To, M. L. 2012. Using experience sampling methodology in organizational behavior. *Journal of Organizational Behavior,* 33.

Fisher, R. A. 1954. *Statistical methods for research workers* Edinburgh, Oliver and Boyd.

Florin, J., Lubatkin, M. & Schulze, W. 2003. A social capital model of high-growth ventures. *Academy of Management Journal,* 46**,** 374-384.

Flügel, J. 1925. A Quantitative Study of Feeling and Emotion in Everyday Life. *British Journal of Psychology*.

Folta, T. B., Cooper, A. C. & Baik, Y.-s. 2006. Geographic cluster size and firm performance. *Journal of business venturing,* 21**,** 217-242.

Foo, M.-D., Uy, M. A. & Baron, R. A. 2009. How do feelings influence effort? An empirical study of entrepreneurs' affect and venture effort. *The Journal of applied psychology,* 94**,** 1086.

Foo, M. D., Sin, H. P. & Yiong, L. P. 2006. Effects of team inputs and intrateam processes on perceptions of team viability and member satisfaction in nascent ventures. *Strategic Management Journal,* 27**,** 389-399.

Foss, N. J. & Klein, P. G. 2012. *Organizing entrepreneurial judgment: A new approach to the firm*, Cambridge University Press.

Freeman, J. & Hannan, M. T. 1983. Niche width and the dynamics of organizational populations. *American journal of Sociology,* 88**,** 1116-1145.

Frese, M. 2009. Towards a psychology of entrepreneurship—an action theory perspective. *Foundations and Trends® in Entrepreneurship,* 5**,** 437-496.

Frese, M. 2007. The psychological actions and entrepreneurial success: An action theory approach. *The psychology of entrepreneurship,* 151.

Frese, M. & Zapf, D. 1994. Action as the core of work psychology: A German approach. *Handbook of industrial and organizational psychology,* 4**,** 271-340.

G Miner, A., M Glomb, T. & Hulin, C. 2005. Experience sampling mood and its correlates at work. *Journal of Occupational and Organizational Psychology,* 78**,** 171-193.

Gable, S., Reis, H. & Elliot, A. 2000. Behavioral activation and inhibition in everyday life. *Journal of Personality and Social Psychology,* 78**,** 1135-1149.

Gallo, I. S. & Gollwitzer, P. M. 2007. lmplementation intentions: A look back at fifteen years of progress.

Garnsey, E. 1998. A theory of the early growth of the firm. *Industrial and corporate change,* 7**,** 523-556.

Gartner, W., Starr, J. & Bhat, S. 1999. Predicting new venture survival: An analysis of "anatomy of a start-up." cases from Inc. Magazine. *Journal of Business Venturing,* 14**,** 215-232.
Gartner, W. B. 1985. A conceptual framework for describing the phenomenon of new venture creation. *Academy of management review,* 10**,** 696-706.
Gartner, W. B., Bird, B. J. & Starr, J. A. 1992. Acting as if: Differentiating entrepreneurial from organizational behavior. *Entrepreneurship theory and practice,* 16**,** 13-32.
Gartner, W. B., Carter, N. M. & Hills, G. E. 2003. 7. The language of opportunity1. *New movements in entrepreneurship,* 103.
Gartner, W. B., Carter, N. M. & Reynolds, P. D. 2010. Entrepreneurial behavior: Firm organizing processes. *Handbook of entrepreneurship research.* Springer.
Garud, R. & Giuliani, A. P. 2013. A narrative perspective on entrepreneurial opportunities. *Academy of Management Review,* 38**,** 157-160.
Gibb, A. A. 1993. Enterprise culture and education: Understanding enterprise education and its links with small business, entrepreneurship and wider educational goals. *International small business journal,* 11**,** 11-34.
Gielnik, M. M., Barabas, S., Frese, M., Namatovu-Dawa, R., Scholz, F. A., Metzger, J. R. & Walter, T. 2014. A temporal analysis of how entrepreneurial goal intentions, positive fantasies, and action planning affect starting a new venture and when the effects wear off. *Journal of Business Venturing,* 29**,** 755-772.
Gielnik, M. M., Spitzmuller, M., Schmitt, A., Klemann, D. K. & Frese, M. 2015. "I put in effort, therefore I am passionate": Investigating the path from effort to passion in entrepreneurship. *Academy of Management Journal,* 58**,** 1012-1031.
Gielnik, M. M., Zacher, H. & Wang, M. 2018. Age in the entrepreneurial process: The role of future time perspective and prior entrepreneurial experience. *The Journal of applied psychology,* 103**,** 1067.
Gilad, B. & Levine, P. 1986. A behavioral model of entrepreneurial supply. *Journal of small business management,* 24**,** 45.
Gilbert, B. A., McDougall, P. P. & Audretsch, D. B. 2006. New venture growth: A review and extension. *Journal of management,* 32**,** 926-950.
Goldberg, L. R. 1981. Language and individual differences: The search for universals in personality lexicons. *Review of personality and social psychology,* 2**,** 141-165.
Goldstein, H. 1995. *Multilevel statistical models,* New York: Halstead, Edwards Arnold.
Gollwitzer, P. 2012. *Mindset theory of action phases*.
Gollwitzer, P. M. 2014. Weakness of the will: Is a quick fix possible? *Motivation and Emotion,* 38**,** 305-322.
Gollwitzer, P. M. 1996. Benefits of planning. *The psychology of action: Linking cognition and motivation to behavior*, 287-312.
Gollwitzer, P. M. 1993. Goal achievement: The role of intentions. *European review of social psychology,* 4**,** 141-185.
Gollwitzer, P. M. 1999. Implementation intentions: Strong effects of simple plans. *American psychologist,* 54**,** 493.
Gollwitzer, P. M. 1990. Action phases and mind-sets. *Handbook of motivation and cognition: Foundations of social behavior,* 2**,** 53-92.
Gollwitzer, P. M. & Bayer, U. 1999. Deliberative versus implemental mindsets in the control of action. *Dual-process theories in social psychology*, 403-422.
Gollwitzer, P. M. & Brandstätter, V. 1997. Implementation intentions and effective goal pursuit. *Journal of personality and social psychology,* 73**,** 186.

Gollwitzer, P. M. & Oettingen, G. 2015. *Motivation and Actions, Psychology of*, Elsevier Ltd.

Gollwitzer, P. M. & Schaal, B. 1998. Metacognition in action: The importance of implementation intentions. *Personality and social psychology review,* 2**,** 124-136.

Gollwitzer, P. M. & Sheeran, P. 2006. Implementation intentions and goal achievement: A meta-analysis of effects and processes. *Advances in experimental social psychology,* 38**,** 69-119.

Graham, S. & Weiner, B. 1996. Theories and principles of motivation. *Handbook of educational psychology,* 4**,** 63-84.

Green, G. P. & McNamara, K. T. 1987. Traditional and nontraditional opportunities and alternatives for local economic development. *In:* Beaulieu, L. J. (ed.) *The rural south in crisis: Challenges of the future.* Boulder, CO: Westview.

Greening, D. W., Barringer, B. R. & Macy, G. 1996. A qualitative study of managerial challenges facing small business geographic expansion. *Journal of Business Venturing,* 11**,** 233-256.

Greve, W. 2001. Traps and gaps in action explanation: Theoretical problems of a psychology of human action. *Psychological review,* 108**,** 435.

Griffin, D., Kahneman, D., Aspinwall, L. & Staudinger, U. 2002. Judgmental Heuristics: Human Strengths or Human Weaknesses? *A psychology of human strengths: Perspectives on an emerging field*.

Gruber, M. & MacMillan, I. C. 2017. Entrepreneurial behavior: A reconceptualization and extension based on identity theory. *Strategic Entrepreneurship Journal,* 11**,** 271-286.

Gunthert, K. & Wenze, S. 2011. Daily diary methods. *In:* Mehl, M. R., Conner, T.A. (ed.) *Handbook of research methods for studying daily life.* New York, NY: Guilford Press.

Hackett, R. D., Bycio, P. & Hausdorf, P. A. 1994. Further assessments of Meyer and Allen's (1991) three-component model of organizational commitment. *Journal of applied psychology,* 79**,** 15.

Hagger, M. S. & Luszczynska, A. 2014. Implementation intention and action planning interventions in health contexts: State of the research and proposals for the way forward. *Applied Psychology. Health and Well-Being,* 6**,** 1-47.

Hambrick, D. C. & Crozier, L. M. 1985. Stumblers and stars in the management of rapid growth. *Journal of business venturing,* 1**,** 31-45.

Hanks, S. H. & Chandler, G. N. 1994. Patterns of functional specialization in emerging high tech. *Journal of Small Business Management,* 32**,** 23.

Hanks, S. H., Watson, C. J., Jansen, E. & Chandler, G. N. 1994. Tightening the life-cycle construct: A taxonomic study of growth stage configurations in high-technology organizations. *Entrepreneurship theory and Practice,* 18**,** 5-29.

Hanson, G. H. 2000. Firms, workers, and the geographic concentration of economic activity. *In:* Clark, G. L., Feldman, M. P. & Gertler, M. S. (eds.) *The Oxford handbook of economic geography.* New York, NY: Oxford University Press.

Harriman, D. 2010. *The logical leap: Induction in physics*, Penguin.

Hart, C. 1998. *Doing a literature review: Releasing the social science research imagination*, Sage.

Hayek, F. A. 1968. Competition as a discovery procedure. *Quarterly Journal of Austrian Economics,* 5**,** 9-23.

Hébert, R. F. & Link, A. N. 2009. *A history of entrepreneurship*, Routledge.

Heckhausen, H. 1991. Motivation and action (PK Leppmann, Trans.).
Heider, F. 1958. *The Psychology of Interpersonal Relations*, Psychology Press.
Hektner, J. M., Schmidt, J. A. & Csikszentmihalyi, M. 2007. *Experience sampling method: Measuring the quality of everyday life*, Sage.
Higgins, E. T., Friedman, R. S., Harlow, R. E., Idson, L. C., Ayduk, O. N. & Taylor, A. 2001. Achievement orientations from subjective histories of success: Promotion pride versus prevention pride. *European Journal of Social Psychology,* 31**,** 3-23.
Hisrich, R. D. 1990. Entrepreneurship/intrapreneurship. *American psychologist,* 45**,** 209.
Hoang, H. & Gimeno, J. 2010. Becoming a founder: How founder role identity affects entrepreneurial transitions and persistence in founding. *Journal of Business Venturing,* 25**,** 41-53.
Hofmann, D. A., Griffin, M. A. & Gavin, M. B. 2000. The application of hierarchical linear modeling to organizational research.
Hogg, M. H. & Abrams, D. 1988. *Social identifications: a social psychology of intergroup relations and group processes,* London, Routledge.
Hopkins, H. D. 1987. Acquisition strategy and the market position of acquiring firms. *Strategic Management Journal,* 8**,** 535-547.
Hox, J. & Maas, C. 2005. Multilevel Analysis, Encyclopedia of Social Measurement. *Elsvier. Iversen L., Sabroe S.(1988). Psychological well-being among unemployed and employed people after a company closedown: A longitudinal study. Journal of Social Issues,* 44**,** 141-152.
Hox, J. J. 2018. *Multilevel analysis : techniques and applications*, New York, New York
London, England : Routledge.
Hrebiniak, L. G. & Alutto, J. A. 1972. Personal and role-related factors in the development of organizational commitment. *Administrative science quarterly***,** 555-573.
Huang, S.-c., Zhang, Y. & Broniarczyk, S. M. 2012. So near and yet so far: The mental representation of goal progress. *Journal of Personality and Social Psychology,* 103**,** 225.
Hudson, D. 2012. Entrepreneurial Effort in the Theory of the Firm. *Technology Innovation Management Review,* 2.
Huggins, R. 2000. The success and failure of policy-implanted inter-firm network initiatives: motivations, processes and structure. *Entrepreneurship & Regional Development,* 12**,** 111-135.
Ikuenobe, P. 2004. Logical positivism, analytic method, and criticisms of ethnophilosophy. *Metaphilosophy,* 35**,** 479-503.
Ilies, R., Dimotakis, N. & De Pater, I. E. 2010a. Psychological and physiological reactions to high workloads: Implications for well-being. *Personnel Psychology,* 63**,** 407-436.
Ilies, R., Dimotakis, N. & Watson, D. 2010b. Mood, blood pressure, and heart rate at work: An experience-sampling study. *Journal of Occupational Health Psychology,* 15**,** 120.
Ilies, R. & Judge, T. A. 2002. Understanding the dynamic relationships among personality, mood, and job satisfaction: A field experience sampling study. *Organizational behavior and human decision processes,* 89**,** 1119-1139.
Ilies, R., Schwind, K. M. & Heller, D. 2007. Employee well-being: A multilevel model linking work and nonwork domains. *European Journal of Work and Organizational Psychology,* 16**,** 326-341.

Ireland, R. D., Hitt, M. A., Camp, S. M. & Sexton, D. L. 2001. Integrating entrepreneurship and strategic management actions to create firm wealth. *Academy of Management Perspectives,* 15**,** 49-63.

Jayawickreme, E., Tsukayama, E. & Kashdan, T. B. 2017. Examining the effect of affect on life satisfaction judgments: A within-person perspective. *Journal of Research in Personality,* 68**,** 32-37.

Johannisson, B. 2011. Towards a practice theory of entrepreneuring. *Small Business Economics,* 36**,** 135-150.

John, O. P., Donahue, E. & Kentle, R. 1991. The big five inventory: Versions 4a and 54 [Technical Report]. *Berkeley, CA: University of California, Institute of Personality and Social Research*.

John, O. P. & Srivastava, S. 1999. The Big Five trait taxonomy: History, measurement, and theoretical perspectives. *Handbook of personality: Theory and research,* 2**,** 102-138.

Joule, R.-V. & Beauvois, J.-L. 1989. Une théorie psychosociale: la théorie de l'engagement. Perspectives commerciales. *Recherche et Applications en Marketing (French Edition),* 4**,** 79-90.

Kanfer, R. 2009. Work motivation: Identifying use-inspired research directions. *Industrial and Organizational Psychology,* 2**,** 77-93.

Kannadhasan, M., Charan, P., Singh, P. & Sivasankaran, N. 2018. Relationships among social capital, self-efficacy, and new venture creations. *Management Decision*.

Kao, R. W. Y. 1989. *Entrepreneurship and enterprise development,* Toronto, Holt, Rinehart and Winston of Canada, Limited.

Kaplan, J. 1996. Startup: A Silicon Valley Adventure.

Katz, J. & Gartner, W. B. 1988. Properties of emerging organizations. *Academy of management review,* 13**,** 429-441.

Katz, J. A. 1992. A psychosocial cognitive model of employment status choice. *Entrepreneurship Theory and Practice,* 17**,** 29-37.

Kautonen, T., Hatak, I., Kibler, E. & Wainwright, T. 2015. Emergence of entrepreneurial behaviour: The role of age-based self-image. *Journal of Economic Psychology,* 50**,** 41-51.

Kazanjian, R. K. & Drazin, R. 1990. A stage-contingent model of design and growth for technology based new ventures. *Journal of business venturing,* 5**,** 137-150.

Kelley, D., Bosma, N. & Amorós, J. E. 2011. Global entrepreneurship monitor 2010 executive report.

Kerin, R. A., Varadarajan, P. R. & Peterson, R. A. 1992. First-mover advantage: A synthesis, conceptual framework, and research propositions. *Journal of marketing,* 56**,** 33-52.

Kerlinger, F. N. & Lee, H. 2000. Survey research. *Foundations of behavioral research***,** 599-619.

Kets de Vries, M. F. 1996. Leaders who make a difference. *European Management Journal,* 14.

Kiesler, C. A. 1971. The psychology of commitment.

Kiesler, C. A. & Sakumura, J. 1966. A test of a model for commitment. *Journal of personality and social psychology,* 3**,** 349.

Kim, K.-S. 1990. Multilevel data analysis: A comparison of analytical alternatives. University of California at Los Angeles.

Kirchhoff, B. A. & Phillips, B. D. 1988. The effect of firm formation and growth on job creation in the United States. *Journal of Business Venturing,* 3**,** 261-272.

Kirzner, I. M. 1983. Entrepreneurs and the entrepreneurial function: a commentary. *Entrepreneurship: Where Did It Come From, and Where Is It Going*, 281-290.

Kirzner, I. M. 1978. Entrepreneurship, entitlement, and economic justice. *Eastern Economic Journal,* 4, 9-25.

Kish, L. 1965. Sampling organizations and groups of unequal sizes. *American sociological review*, 564-572.

Klein, H. J. 1991. Further evidence on the relationship between goal setting and expectancy theories. *Organizational behavior and human decision processes,* 49, 230-257.

Klein, H. J., Wesson, M. J., Hollenbeck, J. R. & Alge, B. J. 1999. Goal commitment and the goal-setting process: conceptual clarification and empirical synthesis. *Journal of applied psychology,* 84, 885.

Klein, P. G. 2008a. Opportunity discovery, entrepreneurial action, and economic organization. *Strategic Entrepreneurship Journal,* 2, 175-190.

Klein, P. G. 2008b. The mundane economics of the Austrian school. *The Quarterly Journal of Austrian Economics,* 11, 165-187.

Klofsten, M. 1994. Technology-based firms: critical aspects of their early development. *Journal of enterprising culture,* 2, 535-557.

Koberg, C. S., Uhlenbruck, N. & Sarason, Y. 1996. Facilitators of organizational innovation: The role of life-cycle stage. *Journal of business venturing,* 11, 133-149.

Koo, T. K. & Li, M. Y. 2016. A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *Journal of chiropractic medicine,* 15, 155-163.

Kreft, I. G. 1996. Are multilevel techniques necessary? An overview, including simulation studies. *Unpublished manuscript, California State University, Los Angeles*.

Kriauciunas, A., Parmigiani, A. & Rivera-Santos, M. 2011. Leaving our comfort zone: Integrating established practices with unique adaptations to conduct survey-based strategy research in nontraditional contexts. *Strategic Management Journal,* 32, 994-1010.

Krueger, N. 2009. Entrepreneurial intentions are dead: Long live entrepreneurial intentions. *Understanding the entrepreneurial mind.* Springer.

Krueger, N. F. & Carsrud, A. L. 1993. Entrepreneurial intentions: applying the theory of planned behaviour. *Entrepreneurship & Regional Development,* 5, 315-330.

Krueger, N. F., Reilly, M. D. & Carsrud, A. L. 2000. Competing models of entrepreneurial intentions. *Journal of Business Venturing,* 15, 411-432.

Krull, J. L. & MacKinnon, D. P. 1999. Multilevel mediation modeling in group-based intervention studies. *Evaluation review,* 23, 418-444.

Krull, J. L. & MacKinnon, D. P. 2001. Multilevel modeling of individual and group level mediated effects. *Multivariate behavioral research,* 36, 249-277.

La Trobe University. 2019a. *Human research ethics*. Available: https://www.latrobe.edu.au/researchers/research-office/ethics/human-ethics [Accessed 21 May 2019].

La Trobe University. 2019b. *Database information - Business Source Complete (EBSCO)*: La Trobe University. Available: http://www.lib.latrobe.edu.au/databases/info.php?I=ARL22760 [Accessed 10 April 2018].

La Trobe University. 2019c. *Database information - Web of Science (ISI)*: La Trobe University. Available: http://www.lib.latrobe.edu.au/databases/info.php?I=ARL08633 [Accessed 25 March 2018].
Lamp, J. 2010. *1503: Business and Management*: Data provided by Australian Research Council. Available: http://lamp.infosys.deakin.edu.au/era/?page=jfordet15&selfor=1503 [Accessed 05-04 2020].
2011. *Measuring the reliability of within-person change over time: a dynamic factor analysis approach*,
Langlois, R. N. 1998. Personal capitalism as charismatic authority: the organizational economics of a Weberian concept. *Industrial and Corporate Change,* 7**,** 195-214.
Larson, R. & Csikszentmihalyi, M. 1983. The experience sampling method. *New directions for methodology of social & behavioral science*.
Lebrasseur, R., Zanibbi, L. & Zinger, T. J. 2003. Growth momentum in the early stages of small business start-ups. *International Small Business Journal,* 21**,** 315-330.
Lechner, C. & Dowling, M. 2003. Firm networks: external relationships as sources for the growth and competitiveness of entrepreneurial firms. *Entrepreneurship & regional development,* 15**,** 1-26.
Lee, C., Lee, K. & Pennings, J. 2001. Internal capabilities, external networks, and performance: A study on technology-based ventures. *Strateg. Manage. J.,* 22**,** 615-640.
Lengfelder, A. & Gollwitzer, P. M. 2001. Reflective and reflexive action control in patients with frontal brain lesions. *Neuropsychology,* 15**,** 80.
Leskinen, R. 2011. *A longitudinal case study of an entrepreneurial networking process*, Aalto University, School of Economics, Department of Management and ….
Lewin, K. 1935. *A dynamic theory of personality: Selected papers (DK Adams & KE Zener, Trans.),* New York, McGraw.
Li, J. & Dutta, D. K. 2018. Founding team experience, industry context, and new venture creation. *New England Journal of Entrepreneurship*.
Liao, J. & Welsch, H. 2003. Social capital and entrepreneurial growth aspiration: a comparison of technology-and non-technology-based nascent entrepreneurs. *The Journal of high technology management research,* 14**,** 149-170.
Liberman, N. & Förster, J. 2008. Expectancy, value and psychological distance: A new look at goal gradients. *Social Cognition,* 26**,** 515-533.
Lichtenstein, B. B., Carter, N. M., Dooley, K. J. & Gartner, W. B. 2007. Complexity dynamics of nascent entrepreneurship. *Journal of Business Venturing,* 22**,** 236-261.
Lichtenstein, B. B., Dooley, K. J. & Lumpkin, G. T. 2006. Measuring emergence in the dynamics of new venture creation. *Journal of business Venturing,* 21**,** 153-175.
LifeData. 2018. *Experience Sampling Methodology*. Available: https://www.lifedatacorp.com/ [Accessed 30 October 2018].
1987. *Statistical analysis with missing data*,
Locke, E. A. 2007. The case for inductive theory building. *Journal of Management,* 33**,** 867-890.
Locke, E. A., Latham, G. P. & Erez, M. 1988. The determinants of goal commitment. *Academy of management review,* 13**,** 23-39.
Loewenstein, G., Hsee, C., Weber, E. & Welsh, N. 2001. Risk as feelings. *Psychological Bulletin,* 127**,** 267-286.

Louro, M. J., Pieters, R. & Zeelenberg, M. 2007. Dynamics of multiple-goal pursuit. *Journal of personality and social psychology,* 93**,** 174.

Low, M. B. & MacMillan, I. C. 1988. Entrepreneurship: Past research and future challenges. *Journal of management,* 14**,** 139-161.

Lumpkin, G. T., Cogliser, C. C. & Schneider, D. R. 2009. Understanding and measuring autonomy: An entrepreneurial orientation perspective. *Entrepreneurship theory and practice,* 33**,** 47-69.

Lumpkin, G. T. & Dess, G. G. 1996. Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of management Review,* 21**,** 135-172.

Lundström, A. & Stevenson, L. 2005. *Entrepreneurship policy: Theory and practice*, Springer.

Maas, C. J. & Hox, J. J. 2005. Sufficient sample sizes for multilevel modeling. *Methodology,* 1**,** 86-92.

Mai, Y. & Zheng, Y. 2013. How On-the-Job Embeddedness Influences New Venture Creation and Growth. *Journal of Small Business Management,* 51**,** 508-524.

Marco, C. A. & Suls, J. 1993. Daily stress and the trajectory of mood: Spillover, response assimilation, contrast, and chronic negative affectivity. *Journal of personality and social psychology,* 64**,** 1053.

Marsonet, M. 2019. Philosophy and Logical Positivism. *Academicus***,** 32.

Martijn, C., Alberts, H., Sheeran, P., Peters, G.-J. Y., Mikolajczak, J. & De Vries, N. K. 2008. Blocked goals, persistent action: Implementation intentions engender tenacious goal striving. *Journal of Experimental Social Psychology,* 44**,** 1137-1143.

Mathias, B. D. & Williams, D. W. 2018. Giving up the hats? Entrepreneurs' role transitions and venture growth. *Journal of Business Venturing,* 33**,** 261-277.

Matlin, M. W. 2004. *Cognition,* New York: NY, John Wiley and Sons.

Maxwell, S. E. & Cole, D. A. 2007. Bias in cross-sectional analyses of longitudinal mediation. *Psychological methods,* 12**,** 23.

McCarthy, A. M., Krueger, D. A. & Schoenecker, T. S. 1991. Changes in the time allocation patterns of entrepreneurs. *Entrepreneurship Theory and Practice,* 15**,** 7-18.

McCarthy, A. M., Schoorman, F. D. & Cooper, A. C. 1993. Reinvestment decisions by entrepreneurs: Rational decision-making or escalation of commitment? *Journal of Business Venturing,* 8**,** 9-24.

McDonald, R. P. 1999. Test theory: A unified approach.

McDougall, P. P. 1989. International versus domestic entrepreneurship: New venture strategic behavior and industry structure. *Journal of Business Venturing,* 4**,** 387-400.

McElwee, G. & Al-Riyami, R. 2003. Women entrepreneurs in Oman: some barriers to success. *Career Development International,* 8**,** 339-346.

McGee, G. W. & Ford, R. C. 1987. Two (or more?) dimensions of organizational commitment: Reexamination of the affective and continuance commitment scales. *Journal of applied psychology,* 72**,** 638.

McGee, J. E., Dowling, M. J. & Megginson, W. L. 1995. Cooperative strategy and new venture performance: The role of business strategy and management experience. *Strategic Management Journal,* 16**,** 565-580.

McGrath, R. G. 1997. A real options logic for initiating technology positioning investments. *Academy of Management Review,* 22**,** 974-996.

McGrath, R. G. & MacMillan, I. C. 2000. *The entrepreneurial mindset: Strategies for continuously creating opportunity in an age of uncertainty*, Harvard Business Press.

McKelvie, A. & Wiklund, J. 2010. Advancing firm growth research: A focus on growth mode instead of growth rate. *Entrepreneurship theory and practice,* 34**,** 261-288.

McMullen, J. S. & Dimov, D. 2013. Time and the Entrepreneurial Journey: The Problems and Promise of Studying Entrepreneurship as a Process. *Journal of Management Studies,* 50**,** 1481-1512.

McMullen, J. S. & Shepherd, D. A. 2002. Regulatory focus and entrepreneurial intention: Action bias in the recognition and evaluation of opportunities. *Frontiers of Entrepreneurship research,* 22**,** 61-72.

Merriam-Webster.com. 2017. *Behavior*. Available: https://www.merriam-webster.com/dictionary/behavior [Accessed].

Meyer, J. P. & Allen, N. J. 1997. *Commitment in the workplace: Theory, research, and application*, Sage.

Meyer, J. P. & Herscovitch, L. 2001. Commitment in the workplace: Toward a general model. *Human resource management review,* 11**,** 299-326.

Miller, G. A., Galanter, E. & Pribram, K. H. 1960. Plans and the structure of behavior.

Mitchell, R. K., Smith, J. B., Morse, E. A., Seawright, K. W., Peredo, A. M. & McKenzie, B. 2002. Are entrepreneurial cognitions universal? Assessing entrepreneurial cognitions across cultures. *Entrepreneurship theory and practice,* 26**,** 9-32.

Mohiyeddini, C., Pauli, R. & Bauer, S. 2009. The role of emotion in bridging the intention–behaviour gap: The case of sports participation. *Psychology of Sport & Exercise,* 10**,** 226-234.

Moore, C. F. 1986. Understanding entrepreneurial behavior. *In:* Helle, N. & John, P. U. (eds.) *Handbook of qualitative research methods in entrepreneurship.* Cheltenham, UK: Edward Elgar.

Morris, M. H., van Vuuren, J., Cornwall, J. R. & Scheepers, R. 2009. Properties of balance: A pendulum effect in corporate entrepreneurship. *Business Horizons,* 52**,** 429-440.

Morrison, A., Breen, J. & Ali, S. 2003. Small business growth: intention, ability, and opportunity. *Journal of small business management,* 41**,** 417-425.

Mowday, R., Porter, L. & Steers, R. 1982. Employee-Organisation Linkages: The Psychology of.

Mueller, S., Volery, T. & Von Siemens, B. 2012. What do entrepreneurs actually do? An observational study of entrepreneurs' everyday behavior in the start-up and growth stages. *Entrepreneurship Theory and Practice,* 36**,** 995-1017.

Murphy, G. B., Trailer, J. W. & Hill, R. C. 1996. Measuring performance in entrepreneurship research. *Journal of business research,* 36**,** 15-23.

Muthén, B., Kaplan, D. & Hollis, M. 1987. On structural equation modeling with data that are not missing completely at random. *Psychometrika,* 52**,** 431-462.

Muthen, L. K. & Muthén, B. O. 2010. Mplus user's guide, v. 6.1. *Los Angeles, CA: Muthén & Muthén*.

Nahapiet, J. & Ghoshal, S. 1998. Social capital, intellectual capital and the organizational advantage Academy of Management Review 23 (2): 242–266. *CrossRef Google Scholar*.

Nayak, A. & Chia, R. 2011. Thinking becoming and emergence: process philosophy and organization studies. *Philosophy and organization theory.* Emerald Group Publishing Limited.

Nieman, G. & Bennett, A. 2002. *Business Management: A Value Chain Approach,* Pretoria, Van Schaik.

Nola, R. & Sankey, H. 2007. Theories of scientific method (Montreal: McGill-Queen's University Press).

Nunnally, J. C. & Bernstein, I. 1994. *Psychometric Theory (McGraw-Hill Series in Psychology)*, McGraw-Hill New York.

Obschonka, M., Silbereisen, R. K., Cantner, U. & Goethner, M. 2015. Entrepreneurial self-identity: predictors and effects within the theory of planned behavior framework. *Journal of Business and Psychology,* 30**,** 773-794.

Oettingen, G., Mayer, D., Timur Sevincer, A., Stephens, E. J., Pak, H.-j. & Hagenah, M. 2009. Mental contrasting and goal commitment: The mediating role of energization. *Personality and Social Psychology Bulletin,* 35**,** 608-622.

Olson, J. M., Roese, N. J. & Zanna, M. P. 1996. Expectancies. *Social Psychology: A Handbook of Basic Principles.* Guilford Press.

Olson, P. D. & Bokor, D. W. 1995. Strategy process-content interaction: Effects on growth perf. *Journal of small business management,* 33**,** 34.

Ong, A. D., Bergeman, C. S., Bisconti, T. & Wallace, K. 2006. Psychological resilience, positive emotions, and successful adaptation to stress in later life. *J. Pers. Soc. Psychol.,* 91**,** 730-749.

Orbeil, S., Hodgldns, S. & Sheeran, P. 1997. Implementation intentions and the theory of planned behavior. *Personality and Social Psychology Bulletin,* 23**,** 945-954.

Orbell, S. & Sheeran, P. 2000. Motivational and volitional processes in action initiation: A field study of the role of implementation intentions. *Journal of Applied Social Psychology,* 30**,** 780-797.

Ormerod, R. J. 2009. The history and ideas of critical rationalism: the philosophy of Karl Popper and its implications for OR. *Journal of the Operational Research Society,* 60**,** 441-460.

Ozgen, E. & Baron, R. A. 2007. Social sources of information in opportunity recognition: Effects of mentors, industry networks, and professional forums. *Journal of business venturing,* 22**,** 174-192.

Papadaki, E., Chami, B. & Branch, S. B. P. 2002. *Growth determinants of micro-businesses in Canada*, Citeseer.

Parente, R. & Feola, R. 2013. Entrepreneurial intent and entrepreneurial commitment of young researchers. *International Journal of Technology Management & Sustainable Development,* 12**,** 155-166.

Park, S. H., Chen, R. & Gallagher, S. 2002. Firm resources as moderators of the relationship between market growth and strategic alliances in semiconductor start-ups. *Academy of management Journal,* 45**,** 527-545.

Parker, S. C. 2009. *The economics of entrepreneurship*, Cambridge University Press.

Parker, S. C. 2004. *The economics of self-employment and entrepreneurship*, Cambridge University Press.

Parks–Stamm, E. J., Gollwitzer, P. M. & Oettingen, G. 2007. Action control by implementation intentions: Effective cue detection and efficient response initiation. *Social Cognition,* 25**,** 248-266.

Pejovic, V., Lathia, N., Mascolo, C. & Musolesi, M. 2016. Mobile-based experience sampling for behaviour research. *Emotions and Personality in Personalized Services.* Springer.

Penrose, E. 1959. *The theory of the growth of the firm,* New York, NY, Oxford University Press.

Petticrew, M. & Roberts, H. 2008. *Systematic reviews in the social sciences: A practical guide*, John Wiley & Sons.

Pinder, C. C. 1998. *Work motivation in organizational behavior,* Upper Saddle River, NJ, Prentice Hall.

Ployhart, R. E. & Vandenberg, R. J. 2010. Longitudinal Research: The Theory, Design, and Analysis of Change. *Journal of Management,* 36**,** 94-120.

Porter, M. E. 1995. The competitive advantage of the inner city. *Harvard business review,* 73**,** 55-71.

Powell, E. E. & Baker, T. 2014. It's what you make of it: Founder identity and enacting strategic responses to adversity. *Academy of Management Journal,* 57**,** 1406-1433.

Prestwich, A., Lawton, R. & Conner, M. 2003. The use of implementation intentions and the decision balance sheet in promoting exercise behaviour. *Psychology and Health,* 18**,** 707-721.

Prestwich, A., Sheeran, P., Webb, T. L. & Gollwitzer, P. M. 2015. Implementation intentions. *Predicting health behavior***,** 321-357.

Quan, X. 2012. Prior experience, social network, and levels of entrepreneurial intentions. *Management Research Review,* 35**,** 945-957.

Rabe-Hesketh, S. & Skrondal, A. 2008. *Multilevel and longitudinal modeling using Stata*, STATA press.

Rachman, S. J. 2004. Fear and courage: A psychological perspective. *Social Research,* 71**,** 149-176.

Rauch, A. & Frese, M. 2007. Let's put the person back into entrepreneurship research: A meta-analysis on the relationship between business owners' personality traits, business creation, and success. *European Journal of work and organizational psychology,* 16**,** 353-385.

Rauch, A. & Hulsink, W. 2015. Putting entrepreneurship education where the intention to act lies: An investigation into the impact of entrepreneurship education on entrepreneurial behavior. *Academy of management learning & education,* 14**,** 187-204.

Raudenbush, S. W. & Bryk, A. S. 2002. *Hierarchical linear models: Applications and data analysis methods*, Sage.

Renko, M., Kroeck, K. G. & Bullough, A. 2012. Expectancy theory and nascent entrepreneurship. *Small Business Economics,* 39**,** 667-684.

Reuel Johnmark, D., Munene, J. C. & Balunywa, W. 2016. Robustness of personal initiative in moderating entrepreneurial intentions and actions of disabled students. *Cogent Business & Management,* 3**,** 1169575.

Reynolds, P. & Miller, B. 1992. New firm gestation: Conception, birth, and implications for research. *Journal of business venturing,* 7**,** 405-417.

Reynolds, P. D. 2005. Understanding business creation: Serendipity and scope in two decades of business creation studies. *Small Business Economics,* 24**,** 359-364.

Reynolds, P. D. & Curtin, R. T. 2010. *New business creation: An international overview*, Springer Science & Business Media.

Reynolds, P. D. & White, S. B. 1997. *The entrepreneurial process: Economic growth, men, women, and minorities*, Praeger Pub Text.
Rindova, V., Barry, D. & Ketchen Jr, D. J. 2009. Entrepreneuring as emancipation. *Academy of management review,* 34**,** 477-491.
Rise, J., Thompson, M. & Verplanken, B. 2003. Measuring implementation intentions in the context of the theory of planned behavior. *Scandinavian Journal of Psychology,* 44**,** 87-95.
Ritzer, G. & Trice, H. M. 1969. An empirical study of Howard Becker's side-bet theory. *Social forces***,** 475-478.
Roberts, E. B. 1991. An environment for entrepreneurs.
Roberts, M. J., Stevenson, H. H., Sahlman, W. A., Marshall, P. & Hamermesh, R. G. 2006. *New Business Venture and the Entrepreneur,* New York, NY, McGraw-Hill/Irwin.
Robinson, K. 1998. An examination of the influence of industry structure on eight alternative measures of new venture performance for high potential independent new ventures. *Journal of Business Venturing,* 14**,** 165-187.
Robinson, K. C. & Phillips McDougall, P. 2001. Entry barriers and new venture performance: a comparison of universal and contingency approaches. *Strategic Management Journal,* 22**,** 659-685.
Robinson, W. T. 1990. Product innovation and start-up business market share performance. *Management Science,* 36**,** 1279-1289.
Rogelberg, S. G., Fisher, G. G., Maynard, D. C., Hakel, M. D. & Horvath, M. 2001. Attitudes toward surveys: Development of a measure and its relationship to respondent behavior. *Organizational Research Methods,* 4**,** 3-25.
Rogosa, D. 1995. Myths and methods:"Myths about longitudinal research" plus supplemental questions. *The analysis of change,* 3**,** 66.
Rogosa, D., Brandt, D. & Zimowski, M. 1982. A growth curve approach to the measurement of change. *Psychological bulletin,* 92**,** 726.
Romanelli, E. & Schoonhoven, C. B. 2001. The local origins of new firms. *The entrepreneurship dynamic: Origins of entrepreneurship and the evolution of industries***,** 40-67.
Rothbard, M. N. 1985. Professor Hebert on entrepreneurship. *Journal of Libertarian Studies,* 7**,** 281-286.
Royston, P. 1992. Tests for departure from normality. *Stata Technical Bulletin,* 1.
Rubenson, G. C. & Gupta, A. K. 1997. The initial succession: A contingency model of founder tenure. *Entrepreneurship Theory and Practice,* 21**,** 21-36.
Rutter, D. R., Steadman, L. & Quine, L. 2006. An implementation intentions intervention to increase uptake of mammography. *Annals of Behavioral Medicine,* 32**,** 127-134.
Ryan, R. M. & Deci, E. L. 2000. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist,* 55**,** 68.
Saarenketo, S., Puumalainen, K., Kuivalainen, O. & Kyläheiko, K. 2009. A knowledge-based view of growth in new ventures. *European Business Review*.
Salerno, J. T. 1993. Mises and Hayek dehomogenized. *The Review of Austrian Economics,* 6**,** 113-146.
Samuelsson, M. & Davidsson, P. 2009. Does venture opportunity variation matter? Investigating systematic process differences between innovative and imitative new ventures. *Small Business Economics,* 33**,** 229-255.

Sandberg, W. R. & Hofer, C. W. 1987. Improving new venture performance: The role of strategy, industry structure, and the entrepreneur. *Journal of Business venturing,* 2**,** 5-28.

Sapienza, H. J. & Grimm, C. M. 1997. Founder characteristics, start-up process, and strategy/structure variables as predictors of shortline railroad performance. *Entrepreneurship Theory and Practice,* 22**,** 5-24.

Sarasvathy, S. D. 2001. Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of management Review,* 26**,** 243-263.

Satorra, A. & Muthen, B. 1995. Complex sample data in structural equation modeling. *Sociological methodology,* 25**,** 267-316.

Saunders, M. 2012. *Research methods for business students,* Harlow, Harlow : Pearson Education.

Saxenian, A. 1994. Regional networks: industrial adaptation in Silicon Valley and route 128.

Saxenian, A. 1990. Regional networks and the resurgence of Silicon Valley. *California management review,* 33**,** 89-112.

Schatzki, T. 2001. Introduction: practice theory. *The practice turn in contemporary theory*.

Scherbaum, C. A. & Ferreter, J. M. 2009. Estimating statistical power and required sample sizes for organizational research using multilevel modeling. *Organizational Research Methods,* 12**,** 347-367.

Scherer, R. F., Adams, J. S. & Wiebe, F. A. 1989. Developing entrepreneurial behaviours: A social learning theory perspective. *Journal of Organizational Change Management,* 2**,** 16-27.

Schlaegel, C. & Koenig, M. 2014. Determinants of entrepreneurial intent: a meta-analytic test and integration of competing models. *Entrepreneurship Theory and Practice,* 38**,** 291-332.

Schmeichel, B. J. & Baumeister, R. F. 2004. Self-regulatory strength.

Schminkey, D. L., von Oertzen, T. & Bullock, L. 2016. Handling missing data with multilevel structural equation modeling and full information maximum likelihood techniques. *Research in nursing & health,* 39**,** 286-297.

Schmitt-Rodermund, E. 2007. The long way to entrepreneurship: Personality, parenting, early interests, and competencies as precursors for entrepreneurial activity among the 'Termites'. *Approaches to positive youth development***,** 205-224.

Scholl, R. W. 1981. Differentiating organizational commitment from expectancy as a motivating force. *Academy of management Review,* 6**,** 589-599.

Schreyogg, G. 1992. The Theory and Philosophy of Organizations. Critical Issues and New Perspectives. *In:* Schreyogg, G. & Hassard, J. (eds.).

Schultz, T. W. 1979. Concepts of entrepreneurship and agricultural research. *Kaldor Memorial Lecture, Iowa State University*.

Schultz, T. W. 1975. The value of the ability to deal with disequilibria. *Journal of economic literature,* 13**,** 827-846.

Schumpeter, J. A. 1934. Theorie der Wirtschaftlichen Entwicklung. Leipzig: Dunker & Humblot, The Theory of Economic Development: An Inquiry into Profits, Capital, Interest, and the Business Cycle, translated by Redvers Opie. Cambridge, MA: Harvard University Press.

Schumpeter, J. A. 1942. *Socialism, capitalism and democracy*, Harper and Brothers.

Schüz, B., Sniehotta, F. F., Mallach, N., Wiedemann, A. U. & Schwarzer, R. 2008. Predicting transitions from preintentional, intentional and actional stages of change. *Health Education Research,* 24**,** 64-75.

Schvaneveldt, J. D. & Adams, G. 1991. *Understanding research methods*, New York: Longman.

Schwartz, J. E. & Stone, A. A. 1998. Strategies for analyzing ecological momentary assessment data. *Health Psychology,* 17**,** 6.

Scollon, C. N., Kim-Prieto, C. & Diener, E. 2003. Experience Sampling: Promises and Pitfalls, Strengths and Weaknesses. *Journal of Happiness Studies,* 4**,** 5-34.

Scott, M. & Bruce, R. 1987. Five stages of growth in small business. *Long range planning,* 20**,** 45-52.

Scott, S. G. & Bruce, R. A. 1994. Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of management journal,* 37**,** 580-607.

Seijts, G. H. & Latham, G. P. 2011. The effect of commitment to a learning goal, self-efficacy, and the interaction between learning goal difficulty and commitment on performance in a business simulation. *Human Performance,* 24**,** 189-204.

Sexton, D. L., Upton, N. B., Wacholtz, L. E. & McDougall, P. P. 1997. Learning needs of growth-oriented entrepreneurs. *Journal of Business Venturing,* 12**,** 1-8.

Shane, S. 2000. Prior knowledge and the discovery of entrepreneurial opportunities. *Organization Science,* 11**,** 448-469.

Shane, S., Locke, E. A. & Collins, C. J. 2003. Entrepreneurial motivation. *Human Resource Management Review,* 13**,** 257-279.

Shane, S. & Venkataraman, S. 2000. The promise of entrepreneurship as a field of research. *Academy of Management Review,* 25**,** 217-226.

Shane, S. A. 2003. *A general theory of entrepreneurship: The individual-opportunity nexus*, Edward Elgar Publishing.

Shapero, A. The process of technical company formation in a local area. Technical entrepreneurship: A symposium, 1972. Milwaukee: Center for Venture Management, 63-95.

Shapero, A. & Sokol, L. 1982. *Social dimensions of entrepreneurship,* Englewood Cliffs, Prentice-Hall.

Shaver, K. G. 2012a. Entrepreneurial action: Conceptual foundations and research challenges. *Entrepreneurial action.* Emerald Group Publishing Limited.

Shaver, K. G. 1985. *The attribution of blame : causality, responsibility, and blameworthiness,* New York, New York : Springer-Verlag.

Shaver, K. G. 2012b. *The attribution of blame: Causality, responsibility, and blameworthiness*, Springer Science & Business Media.

Shaver, K. G. & Scott, L. R. 1991. Person, Process, Choice: The Psychology of New Venture Creation.

Shaver, K. G. & Tarpy, R. M. 1993. *Psychology,* New York, Macmillan.

Sheeran, P. 2002. Intention—Behavior Relations: A Conceptual and Empirical Review. *European Review of Social Psychology,* 12**,** 1-36.

Sheeran, P., Orbell, S. & Trafimow, D. 1999. Does the temporal stability of behavioral intentions moderate intention-behavior and past behavior-future behavior relations? *Personality and Social Psychology Bulletin,* 25**,** 724-734.

Sheeran, P. & Silverman, M. 2003. Evaluation of three interventions to promote workplace health and safety: evidence for the utility of implementation intentions. *Social Science & Medicine,* 56**,** 2153-2163.

Sheeran, P., Webb, T. L. & Gollwitzer, P. M. 2005. The interplay between goal intentions and implementation intentions. *Personality and Social Psychology Bulletin,* 31**,** 87-98.

Sheldon, K. M., Ryan, R. & Reis, H. T. 1996. What makes for a good day? Competence and autonomy in the day and in the person. *Personality and Social Psychology Bulletin,* 22**,** 1270-1279.

Shepherd, D. A. 2015. Party On! A call for entrepreneurship research that is more interactive, activity based, cognitively hot, compassionate, and prosocial. Elsevier.

Shiffman, S., Stone, A. A. & Hufford, M. R. 2008. Ecological momentary assessment. *Annu. Rev. Clin. Psychol.,* 4**,** 1-32.

Shook, C. L., Priem, R. L. & McGee, J. E. 2003. Venture creation and the enterprising individual: A review and synthesis. *Journal of Management,* 29**,** 379-399.

Shrader, R. C. 1996. *Influences on and performance implications of internationalization by publicly owned US new ventures: A risk taking perspective.* Georgia State University.

Siegel, R., Siegel, E. & Macmillan, I. C. 1993. Characteristics distinguishing high-growth ventures. *Journal of business Venturing,* 8**,** 169-180.

Sigrist, B. Entrepreneurial opportunity recognition. A presentation at the Annual UIC/AMA symposium at Marketing/Entrepreneurship Interface, Sofia-Antipolis, France, 1999.

Silvia, P. J., Kwapil, T. R., Eddington, K. M. & Brown, L. H. 2013. Missed beeps and missing data: dispositional and situational predictors of nonresponse in experience sampling research. *Social Science Computer Review,* 31**,** 471-481.

Simon, M., Elango, B., Houghton, S. M. & Savelli, S. 2002. The successful product pioneer: maintaining commitment while adapting to change. *Journal of Small Business Management,* 40**,** 187-203.

Sinclair, R. F. & Bruce, R. A. 2009. Determining entrepreneurial commitment in the pre-entrepreneur (summary). *Frontiers of Entrepreneurship Research,* 29**,** 18.

Singer, J. D. & Willett, J. B. 2003. *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence*, Oxford University Press.

Singer, J. D., Willett, J. B. & Willett, J. B. 2003. *Applied longitudinal data analysis: Modeling change and event occurrence*, Oxford university press.

Sniehotta, F. F. 2009. Towards a theory of intentional behaviour change: Plans, planning, and self-regulation. *British journal of health psychology,* 14**,** 261-273.

Sniehotta, F. F., Scholz, U. & Schwarzer, R. 2005. Bridging the intention–behaviour gap: Planning, self-efficacy, and action control in the adoption and maintenance of physical exercise. *Psychology & Health,* 20**,** 143-160.

Snijders, T. A. 2005. Power and sample size in multilevel linear models. *Encyclopedia of statistics in behavioral science*.

Snijders, T. A. & Bosker, R. J. 1999. An introduction to basic and advanced multilevel modeling. *Sage, London. WONG, GY, y MASON, WM (1985): The Hierarchical Logistic Regression. Model for Multilevel Analysis, Journal of the American Statistical Association,* 80**,** 13-524.

Snijders, T. A. & Bosker, R. J. 1993. Standard errors and sample sizes for two-level research. *Journal of educational statistics,* 18**,** 237-259.

Sobel, M. E. 1982. Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological methodology,* 13**,** 290-312.

Solutions. 2019. *Using Chi-Square Statistic in Research - Statistics Solutions*: @statssolutions. Available: https://www.statisticssolutions.com/using-chi-square-statistic-in-research/ [Accessed 5th December 2019].

Song, Z., Foo, M.-D. & Uy, M. A. 2008. Mood spillover and crossover among dual-earner couples: A cell phone event sampling study. *Journal of Applied Psychology,* 93**,** 443.

Sorenson, B. 2006. Identity sniping: Innovation, imagination and the body. *Creativity and Innovation Management,* 15**,** 135-142.

Stacey, R. D. 1996. *Complexity and creativity in organizations*, Berrett-Koehler Publishers.

Starr, J. A. & MacMillan, I. C. 1990. Resource cooptation via social contracting: Resource acquisition strategies for new ventures. *Strategic Management Journal***,** 79-92.

Stata.com. 2020. sktest - Skewness and kurtosis test for normaility. Available: https://www.stata.com/manuals13/rsktest.pdf.

Stata.Com. 2019. *bootstrap — Bootstrap sampling and estimation*, Stata.Com.

Staw, B. M. 1981. The Escalation of Commitment is a Course of Action. *Academy of Management Review,* 6**,** 577-587.

Steel, P. 2007. The Nature of Procrastination: A Meta-Analytic and Theoretical Review of Quintessential Self-Regulatory Failure. *Psychological Bulletin,* 133**,** 65-94.

Steel, P. & König, C. J. 2006. Integrating theories of motivation. *Academy of management review,* 31**,** 889-913.

Steffens, P. R. & Omarova, A. 2019. Global Entrepreneurship Monitor (GEM)-2017/18 Australian National Report.

Sternberg, R. J. 2004. Successful intelligence as a basis for entrepreneurship. *Journal of Business Venturing,* 19**,** 189-201.

Stevenson, H. H. & Jarillo, J. C. 1990. A Paradigm of Entrepreneurship: Entrepreneurial Management. *Strategic Management Journal***,** 17-27.

Stevenson, H. H., Roberts, M. J., Bhide, A. & Bhide, C. A. 1999. *The entrepreneurial venture: readings selected*, Rutgers University Press.

Steyaert, C. 2007. 'Entrepreneuring'as a conceptual attractor? A review of process theories in 20 years of entrepreneurship studies. *Entrepreneurship and regional development,* 19**,** 453-477.

Steyer, R., Schmitt, M. & Eid, M. 1999. Latent state–trait theory and research in personality and individual differences. *European Journal of Personality,* 13**,** 389-408.

Stone-Romero, E. F. & Rosopa, P. J. 2008. The relative validity of inferences about mediation as a function of research design characteristics. *Organizational Research Methods,* 11**,** 326-352.

Stone, A. & Broderick, J. 2009. Protocol compliance in real-time data collection studies. *Calendar and time diary methods in life course research***,** 243-256.

Stone, A. A. & Shiffman, S. 1994. Ecological momentary assessment (EMA) in behavorial medicine. *Annals of Behavioral Medicine*.

Stuart, T. E. & Sorenson, O. 2005. Social networks and entrepreneurship. *Handbook of entrepreneurship research.* Springer.

Susbauer, J. 1979. Strategic management: New ventures and small business. *Strategic management: A new view of business policy and planning***,** 327-332.

Sutton, J. 1997. Gibrat's legacy. *Journal of Economic Literature,* 35**,** 40-59.

Sweller, J. 1988. Cognitive load during problem solving: Effects on learning. *Cognitive science,* 12**,** 257-285.

Tang, J. 2008. Environmental munificence for entrepreneurs: entrepreneurial alertness and commitment. *International Journal of Entrepreneurial Behavior & Research,* 14**,** 128-151.

Tasnim, R. & Singh, H. 2016. " What, Exactly, is Entrepreneurial Commitment?": Modeling the Commitment of Successful Entrepreneurs. *Journal of Applied Management and Entrepreneurship,* 21**,** 6.

Tasnim, R., Yahya, S., Mohd Nor, M., Said, H. & Zainuddin, M. N. 2013. Are successful entrepreneurs committed or motivated? A research review synchronyzing commitment, motivation and the entrepreneur. *ACRN Journal of Entrepreneurship Perspectives,* 2**,** 46-62.

Tasnim, R., Yahya, S. & Zainuddin, M. N. 2014. " I'm Loving It!" What Makes the Successful Entrepreneur Affectively Committed to Entrepreneurial Performance? *Journal of Applied Management and Entrepreneurship,* 19**,** 27.

Taub, R. P. 1988. *Community capitalism,* Boston, Mass, Boston, Mass : Harvard Business School Press.

Thakur, S. P. 1999. Size of investment, opportunity choice and human resources in new venture growth: Some typologies. *Journal of Business Venturing,* 14**,** 283-309.

Thompson, J. 2007. *Entrepreneurs,* Hoboken, Hoboken : Taylor and Francis.

Thürmer, J. L., Wieber, F. & Gollwitzer, P. M. 2015. Planning high performance: Can groups and teams benefit from implementation intentions?

Toli, A., Webb, T. L. & Hardy, G. E. 2016. Does forming implementation intentions help people with mental health problems to achieve goals? A meta-analysis of experimental studies with clinical and analogue samples. *British Journal of Clinical Psychology,* 55**,** 69-90.

Tranfield, D., Denyer, D. & Smart, P. 2003. Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British journal of management,* 14**,** 207-222.

Trevelyan, R. 2011. Self-regulation and effort in entrepreneurial tasks. *International Journal of Entrepreneurial Behavior & Research,* 17**,** 39-63.

Uy, M. A., Foo, M.-D. & Aguinis, H. 2010. Using Experience Sampling Methodology to Advance Entrepreneurship Theory and Research. *Organizational Research Methods,* 13**,** 31-54.

Uy, M. A., Foo, M.-D. & Ilies, R. 2015. Perceived progress variability and entrepreneurial effort intensity: The moderating role of venture goal commitment. *Journal of Business Venturing,* 30**,** 375-389.

Uzzi, B. 1999. Embeddedness in the making of financial capital: How social relations and networks benefit firms seeking financing. *American Sociological Review***,** 481-505.

Van de Ven, A. H., Hudson, R. & Schroeder, D. M. 1984. Designing new business startups: Entrepreneurial, organizational, and ecological considerations. *Journal of management,* 10**,** 87-108.

Van der Leeden, R. & Busing, F. 1994. First iteration versus IGLS/RIGLS estimates in two-level models: A Monte Carlo study with ML3. *Preprint PRM,* 94.

Van der Leeden, R., Busing, F. & Meijer, E. Applications of bootstrap methods for two-level models. Multilevel Conference, Amsterdam, 1997.

Van Eerde, W. 2000. Procrastination: Self-regulation in initiating aversive goals. *Applied Psychology,* 49**,** 372-389.
van Gelderen, M. 2009. *From Entrepreneurial Intention to Action Initiation*. Washington: International Council for Small Business (ICSB).
Van Gelderen, M., Kautonen, T. & Fink, M. 2015. From entrepreneurial intentions to actions: Self-control and action-related doubt, fear, and aversion. *Journal of Business Venturing,* 30**,** 655-673.
van Gelderen, M., Kautonen, T., Wincent, J. & Biniari, M. 2017. Implementation intentions in the entrepreneurial process: concept, empirical findings, and research agenda. *Small Business Economics***,** 1-19.
Van Hooff, M. L., Geurts, S. A., Kompier, M. A. & Taris, T. W. 2007. " How fatigued do you currently feel?" Convergent and discriminant validity of a single-item fatigue measure. *Journal of Occupational Health,* 49**,** 224-234.
van Hooft, E. A., Born, M. P., Taris, T. W., Van der Flier, H. & Blonk, R. W. 2005. Bridging the gap between intentions and behavior: Implementation intentions, action control, and procrastination. *Journal of vocational behavior,* 66**,** 238-256.
Venkataraman, S. 1997. The distinctive domain of entrepreneurship research. *Advances in Entrepreneurship, Firm Emergence and Growth,* 3**,** 119-138.
Venkataraman, S., Van de Ven, A. H., Buckeye, J. & Hudson, R. 1990. Starting up in a turbulent environment: A process model of failure among firms with high customer dependence. *Journal of Business Venturing,* 5**,** 277-295.
Verduyn, K. 2015. Entrepreneuring and process: A Lefebvrian perspective. *International Small Business Journal,* 33**,** 638-648.
Verplanken, B. & Faes, S. 1999. Good intentions, bad habits, and effects of forming implementation intentions on healthy eating. *European Journal of Social Psychology,* 29**,** 591-604.
Vesper, K. H. 1980. *New venture strategies,* Englewood Cliffs, NJ, Prentice-Hall.
Vohora, A., Wright, M. & Lockett, A. 2004. Critical junctures in the development of university high-tech spinout companies. *Research policy,* 33**,** 147-175.
Walker, E. & Brown, A. 2004. What success factors are important to small business owners? *International Small Business Journal,* 22**,** 577-594.
Wanberg, C. R., Zhu, J. & Van Hooft, E. A. 2010. The job search grind: Perceived progress, self-reactions, and self-regulation of search effort. *Academy of Management Journal,* 53**,** 788-807.
Wanous, J. P. & Hudy, M. J. 2001. Single-item reliability: a replication and extension. *Organizational Research Methods,* 4**,** 361-375.
Wanous, J. P., Reichers, A. E. & Hudy, M. J. 1997. Overall job satisfaction: how good are single-item measures? *Journal of applied Psychology,* 82**,** 247.
Ward, T. B. 2004. Cognition, creativity, and entrepreneurship. *Journal of business venturing,* 19**,** 173-188.
Warren, C. R. & Landis, R. S. 2007. One is the loneliest number: a meta-analytic investigation on single-item measure fidelity. *Ergometrika,* 4**,** 32-53.
Wasilczuk, J. 2000. Advantageous competence of owner/managers to grow the firm in Poland: Empirical evidence. *Journal of small business management,* 38**,** 88.
Webb, T. L. & Sheeran, P. 2006. Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological bulletin,* 132**,** 249.

Webb, T. L. & Sheeran, P. 2004. Identifying good opportunities to act: Implementation intentions and cue discrimination. *European Journal of Social Psychology,* 34**,** 407-419.

Webb, T. L. & Sheeran, P. 2007. How do implementation intentions promote goal attainment? A test of component processes. *Journal of Experimental Social Psychology,* 43**,** 295-302.

Webb, T. L. & Sheeran, P. 2003. Can implementation intentions help to overcome ego-depletion? *Journal of Experimental Social Psychology,* 39**,** 279-286.

Webb, T. L. & Sheeran, P. 2008. Mechanisms of implementation intention effects: the role of goal intentions, self-efficacy, and accessibility of plan components. *British Journal of Social Psychology,* 47**,** 373-395.

Weick, K. E. 1979. The social psychology of organizing (Topics in social psychology series). *Columbus, OH: McGraw-Hill Humanities*.

Weick, K. E. 1984. Small wins: Redefining the scale of social problems. *American Psychologist,* 39**,** 40.

Weinberger, E., Wach, D., Stephan, U. & Wegge, J. 2018. Having a creative day: Understanding entrepreneurs' daily idea generation through a recovery lens. *Journal of Business Venturing,* 33**,** 1-19.

Weiner, B. 1985. An attributional theory of achievement motivation and emotion. *Psychological review,* 92**,** 548.

Weiss, H., Beal, D. J., Lucy, S. L. & MacDermid, S. M. 2004. Constructing EMA studies with PMAT: The Purdue momentary assessment tool user's manual. *West Lafayette, IN: Purdue University Military Family Research Institute*.

Welsch, H., Liao, J., Pistrui, D., Oksöy, D. & Huang, W. Entrepreneurial Commitment, Sacrifice, Motivations and Growth Aspirations of Chinese Entrepreneurs. 17th Annual USASBE National Conference (Proceedings), 2003. 23-25.

Wheeler, L. & Reis, H. T. 1991. Self-recording of everyday life events: Origins, types, and uses. *Journal of personality,* 59**,** 339-354.

Whetten, D., Kimberly, J. & Miles, R. 1980. The organizational life cycle. Jossey-Bass San Francisco, CA.

Wieber, F. & Gollwitzer, P. M. 2017. Planning and the control of action. *Knowledge and Action.* Springer.

Wieber, F., Thürmer, J. L. & Gollwitzer, P. M. 2015. Promoting the translation of intentions into action by implementation intentions: behavioral effects and physiological correlates. *Frontiers in Human Neuroscience,* 9**,** 395.

Wiedemann, A. U., Schüz, B., Sniehotta, F., Scholz, U. & Schwarzer, R. 2009. Disentangling the relation between intentions, planning, and behaviour: A moderated mediation analysis. *Psychology and Health,* 24**,** 67-79.

Wiklund, J. & Shepherd, D. 2003. Aspiring for, and achieving growth: The moderating role of resources and opportunities. *Journal of Management Studies,* 40**,** 1919-1941.

Wiklund, J. & Shepherd, D. A. INTENTIONS AND GROWTH: THE MODERATING ROLE OF RESOURCES AND OPPORTUNITIES. Academy of management Proceedings, 2001. Academy of Management Briarcliff Manor, NY 10510, F1-F6.

Wilhelm, P. & Schoebi, D. 2007. Assessing mood in daily life. *European Journal of Psychological Assessment,* 23**,** 258-267.

Willett, J. B. 1989. Some results on reliability for the longitudinal measurement of change: Implications for the design of studies of individual growth. *Educational and psychological measurement,* 49**,** 587-602.

Williams, K. J. & Alliger, G. M. 1994. Role Stressors, Mood Spillover, and Perceptions of Work-Family Conflict in Employed Parents. *The Academy of Management Journal,* 37**,** 837-868.

Witt, U. 1998. Imagination and leadership–the neglected dimension of an evolutionary theory of the firm. *Journal of Economic Behavior & Organization,* 35**,** 161-177.

Woiceshyn, J. & Daellenbach, U. 2018. Evaluating inductive vs deductive research in management studies. *Qualitative Research in Organizations and Management: An International Journal,* 13**,** 183-195.

Wright, M. & Marlow, S. 2011. Entrepreneurial activity in the venture creation and development process.

Wright, M., Robbie, K. & Ennew, C. 1997. Venture capitalists and serial entrepreneurs. *Journal of business venturing,* 12**,** 227-249.

Yeo, G. B. & Neal, A. 2004. A multilevel analysis of effort, practice, and performance: effects; of ability, conscientiousness, and goal orientation. *Journal of Applied Psychology,* 89**,** 231.

Zahra, S. A. & Bogner, W. C. 1999. Technology strategy and software new ventures' performance: Exploring the moderating effects of the competitive environment. *Journal of Business Venturing,* 15**,** 135-173.

Zahra, S. A. & Bogner, W. C. 2000. Technology strategy and software new ventures' performance: Exploring the moderating effect of the competitive environment. *Journal of Business Venturing,* 15**,** 135-173.

Zane, L. J. & Decarolis, D. M. 2016. Social networks and the acquisition of resources by technology-based new ventures. *Journal of Small Business & Entrepreneurship,* 28**,** 203-221.

Zhang, H., Sun, X. & Lyu, C. 2018. Exploratory orientation, business model innovation and new venture growth. *Sustainability,* 10**,** 56.

Ziegelmann, J. P., Luszczynska, A., Lippke, S. & Schwarzer, R. 2007. Are goal intentions or implementation intentions better predictors of health behavior? A longitudinal study in orthopedic rehabilitation. *Rehabilitation Psychology,* 52**,** 97.

Zohar, D., Tzischinski, O. & Epstein, R. 2003. Effects of energy availability on immediate and delayed emotional reactions to work events. *Journal of Applied Psychology,* 88**,** 1082.

Appendices

Appendix 1: Australian Centre for Entrepreneurship Research Exchange (ACERE) conference paper 2017

Title:

An investigation of the entrepreneurial intentions-behaviour link within the context of new venture creation.

Abstract:

The aim of this research is to investigate the link between entrepreneurial intentions not translating into subsequent entrepreneurial behaviours in the context of new venture creation. Entrepreneurship scholars discuss the importance to investigate the intention-behaviour gap in order to be able to understand the conditions in which individuals' intentions fail to translate into subsequent actions. The thorough investigation of this research on the entrepreneurial intention-behaviour link aims to provide an in-depth insight and understanding of the mechanisms and the temporalities which affect how individuals turn their intentions of starting a new venture into action. Therefore, this research contributes to an area in entrepreneurship research which thus far has profoundly lacked insight and direction. This research conducts a thorough systematic review of the literature and uses a longitudinal mixed-methods approach of both quantitative and qualitative. Initially ten individuals will be interviewed; following this an experience sampling methodology (ESM) will be carried out for a period of six months for a total number of 50 participants.

1.0 Introduction:

The aim of this paper is to thoroughly identify and investigate the conditions and mechanisms which affect persistent entrepreneurial intentions not leading to subsequent behaviour. Furthermore, this research aims to propose new theoretical models, to better explain entrepreneurial intentions. The development of literature on entrepreneurial intentions, has been based on the integration of theories from social psychology and in specific cognitive psychology (Fayolle & Liñán 2014). In order to contribute to the body of knowledge on entrepreneurial intentions-behaviour link, this research adopts theories from the field of cognitive psychology, to develop a more thorough understanding of the relationship between intentions and behaviour.

1.1 Entrepreneurial intention-behaviour link

A crucial outcome of entrepreneurship is the creation of new ventures (Gielnik et al. 2014). It has been identified that many individuals form intentions to start a new venture, however, these intentions are not always translated into subsequent behaviour. This lack of action, which is also referred to as inaction, may be due to the emergence of new constraints or changes in individuals' preferences (van Gelderen et al. 2015). The lack of action despite having consistent entrepreneurial intentions is crucial to investigate and understand, as

currently there may be some entrepreneurial ventures which are not being created, which may have a profound impact on the economy and society.

1.2 Lack of empirical and conceptual work on entrepreneurial intention-behaviour link

Fayolle and Liñán (2014, p. 665) have emphasised the substantial need and value for further research on entrepreneurial intentions, and in specific they debate that "an urgent need exists to empirically and theoretically investigate the intention-behaviour link." Among many entrepreneurship scholars, Kautonen et al. (2013) have recognized the lack of studies on intentions-behaviour link as a major shortcoming in entrepreneurship research. Schlaegel and Koenig (2014) in their study which focused on analysing the determinants of entrepreneurial intentions identified only two published studies which examined the intention-behaviour link, and as a result have recommended for future research to focus on the translation of intentions into subsequent behaviour. It has been identified that the most significant research challenges on entrepreneurial intentions are within in this area, as the majority of intention-based models mainly focus on intentions and fail to consider the timing in the creation of new ventures (Fayolle & Liñán 2014).

2.0 Literature Review

The lack of data and investigation on the intentions-behaviour relationship in entrepreneurship in comparison to other disciplines is explained to be mainly due to the characteristics of entrepreneurship which include: uncertainty, complexity, risk, change, resource and financial constraints as well as psychological ownership (van Gelderen 2009; Baron 1998). These characteristics therefore create certain challenges when investigating the link between intentions-behaviour.

It is important to note that this research is similar to the study conducted by van Gelderen (2009), in which there is emphasis on considering individual entrepreneurial intentions that are persistent, yet no action is taken. Therefore, the participants in this study have a high level of willingness to start a new venture. Willingness does not equal to action, and action does not equal to opportunity. Furthermore, van Gelderen (2009, p. 5) explains: "the intention to pursue an opportunity is different from the intention to pursue an entrepreneurial action."

2.1 Action regulation and emotion regulation

Not all actions are conscious or under rational control, therefore, psychologists define two separate processing systems, labelled as system 1 and system 2 (Chaiken & Trope 1999). System 1 does not require an individual's conscious attention as there is automatic processing of information and control of actions. On the other hand, system 2 processes are controlled and require effort by the individual and are therefore based on rational analysis. Prior studies have demonstrated that the majority of human behaviour is automatic and therefore is operated by system 1 processing, which in turn limits the capacity for conscious attention. Humans in general prefer to automatise their behaviour; therefore system 1 is the preferred system majority of the time, as it does not require resources such as attention and processing capacity (van Gelderen 2009). System 2 processing does not occur very often, as individuals' capacity to process information is limited and can also be exceeded easily, as a result cognitive effort is minimised, and short cuts are developed in thinking. However, it is important to note that both system 1 and system 2 are required as they complement

each other, and neither system can be labelled as more effective (Frese 2007). Entrepreneurs often need to regulate actions which are on the conscious level as a result of the environment in which they operate in, which is one of high risk, uncertainty and complexity, therefore requiring them to make various important decisions. Action regulation often labelled as self-regulatory strength uses conscious and systematic processing which studies have shown that it can be depleted, however, it can also be replenished through various methods such as sleeping or distractions (van Gelderen 2009).

Similar to regulation of actions, the regulation of emotions is also affected by both systems 1 and system 2, differing in the level of involvement in conscious and non-conscious processes. Research on the brain indicates that emotions can react automatically or on a conscious level. Emotions which occur automatically are involuntary and occur before the conscious brain has a chance to assess the situation (Zhu & Thagard 2002). Active approach and avoidance tendencies form part of involuntary emotions. On the other hand, conscious emotions are not direct causes of behaviour, but are explained to serve as feedback in controlling behaviour (Baumeister et al. 2007). Therefore, conscious emotions can impact on future behaviour rather than present behaviour. Baumeister et al. (2007) explain that one cannot control their emotions, however, it is possible to consciously regulate the behavioural response to emotions. This conscious regulation of emotions is similar to the conscious regulation of actions in that both require the use of resources and cognitive capacity (van Gelderen 2009). van Gelderen (2009) explains that the following are conditions under which feelings may cause lack of actions despite high levels of intentions:

Intention strength instability: Intentions towards starting a new business may be continuously present, however, its level of strength can vary, which in turn may cause challenges for action control especially when strength level is at its lowest. Starting a new venture requires behaviour taken in a risky and uncertain environment; therefore, in order for intentions to result in actions, they require a high level of strength (van Gelderen 2009). The intentions-behaviour gap is explained to be even larger among business students as they are still considering their options and therefore are not certain about their goals (Nabi et al. 2006).

Lack of intention elaboration: Intention elaboration may cause intention instability (Sheeran 2002). Intention elaboration refers to those individuals who have thought about starting a new venture for a long period of time, and therefore results in the formation of entrepreneurial intentions which are based on superficial analysis. These individuals often fail to take action due to the development of anxiety and task aversion (van Gelderen 2009).

Lack of excitement, enthusiasm, eagerness: Despite having entrepreneurial intentions, lack of strong emotions such as excitement, enthusiasm and eagerness make it challenging to start a new venture. Therefore, when lacking these emotions, individuals must apply conscious effort to produce action, which as discussed earlier depletes self-regulatory strength. As a result, most intentions without excitement cannot force the action, and so goals remain as wishes (van Gelderen 2009).

Competing goals: Ownership of a business may achieve multiple goals in the hierarchy such as financial freedom and autonomy; however, these goals can be achieved by various methods. Both the position as well as the strength of the goal hierarchy of entrepreneurial intentions set to achieve other gaols may result in inaction. Entrepreneurial intentions usually compete with other intentions for time, attention and required resources. As a result,

the individual faces goal selection, and if this process is difficult then it can result in negative feelings. Studies have shown when individuals face situations where they must choose between multiple attractive choices, it results in an increased tendency to postpone action (Anderson 2003). Goals also compete on both time frame and level of urgency. Higher-level long-term goals such as becoming wealthy, are considered crucial, however, they lack individuals' attention in comparison to short- and medium-term goals (Steel 2007).

Aversive aspects: Starting a new venture requires performing a variety of tasks and activities, and therefore, it is very likely that one or more of these activities are averse to the entrepreneurial intention. Individuals who decide to avoid these aversive feelings resulting from particular tasks, will therefore procrastinate (Van Eerde 2000; Steel 2007).

Fear: Fear is explained to increase between the time frame intentions are developed and when they are actually realised, during which there is the realisation that an uncertain and risky event may be approaching. Fear as an automatic response, may trigger avoidance, which leads to inaction (Gable et al. 2000). On the other hand, on the conscious level, fear may affect cognition and lead to reflection (Baumeister et al. 2007). In some individuals fear drives their actions, such as the fear to miss out on an opportunity, however, in most individuals fear leads to becoming more cautious which can lead to inaction (van Gelderen 2009).

Action uncertainty: van Gelderen (2009) explains that even if all the above factors have been overcome, it is still possible to experience inaction as a result of action uncertainty. Even though the individual has formed a strong entrepreneurial intention, they may not know what to perform at the action level. This can occur as result of a lack of a detailed plan, which thoroughly explains when and where which specific action needs to be performed. Furthermore, often inexperienced entrepreneurs tend to link wrong actions with regret, and therefore this leads to fear of experimentation, which ultimately causes inaction.

van Gelderen et al. (2015) argue that there should not be a default assumption that entrepreneurial intentions will necessarily translate into action, their study on investigating whether volition has an impact on entrepreneurial intentions translating into action, revealed two main findings. The first finding is that the translation of intentions into action depends on self-control, which is possible to train, and is consistent over time and place (Bauer & Baumeister 2011). The second finding is that experiencing doubt at the action level limits the ability of intentions translating into action (van Gelderen et al. 2015). The study conducted by van Gelderen et al. (2015) involved using longitudinal survey data, as participants were surveyed twice with a 12 months gap in between surveys. The two main recommendations for future research as discussed by van Gelderen et al. (2015), could both be addressed through adopting the experience sampling methodology (ESM) approach. The methodology design of this research paper is discussed in detail in the methodology section.

2.2 Main theories

This research builds on action regulation theory, the theory of planned behaviour (TPB), the theory of implementation-intentions and the concept of commitment. Action regulation theory (Frese 2009; Frese & Zapf 1994), explains that a successful action, such as starting a new venture, requires a combination of action planning and goal intentions. Action plans are described as mental simulations and thoughts which describe the steps of how to achieve

a specific goal (Frese et al. 2007). Action regulation theory places great emphasis on action plans which are viewed as being crucial for the transition of goal intentions into actions, as only developing goal intentions is not sufficient for performing an action (Frese & Zapf 1994). Action regulation theory recognises action regulation, as possessing various levels of consciousness and automaticity, as well as recognising that action process has several phases: goal setting, environment mapping, planning, execution, monitoring and feedback. Inaction can be as a result of the individual experiencing uncertainty in any of these action phases (van Gelderen 2009). Furthermore, Gielniket et al. (2014), discuss that entrepreneurial goal intentions which are not complimented by action planning do not translate into subsequent action, which in turn minimizes the possibility of creating new ventures.

TPB originates from social psychology, and explains that individuals' attitudes, subjective norms and perceptions of control are consistently formed from their beliefs, which in turn has an impact on their intentions and behaviour (Ajzen 2015). Furthermore, TPB works on the assumption that an individual's intention is a significant predictor of their behaviour, and therefore, in order to best predict entrepreneurial behaviour, one must observe intentions toward that specific behaviour (Krueger et al. 2000). The intention construct is identified to be a more significant predictor of behaviour rather than more distal constructs such as attitudes, beliefs, personality traits and demographics, as these distal contracts are more effective in predicting broad classes of behaviour rather than specific actions (Kautonen et al. 2013). Ajzen (2015) explains two main reasons which prevent individuals from carrying out their intentions: 1 – Events which occur between valuation of intentions and observation of behaviour, may result in changes in intentions and unexpected challenges may prevent individuals from taking action on their intentions, 2 – The beliefs which are present in the real situation in which an actual behaviour is carried out, may differ from the beliefs which are present in the hypothetical situation. Ajzen (2015) recommends researchers to consider the following suggestions in order to address the issue of individuals having positive intentions and not being able to translate these into subsequent behaviour. These recommendations are: (i) ensure to minimise the difference between beliefs accessible in the behavioural context from the beliefs accessible in the elicitation phase; (ii) individuals have all the correct skills and resources required to carry out the desired behaviour; (iii) remove all potential obstacles relating to its performance; and (iv) there are no unexpected events or information which lead to revision of intentions following the intervention. Ajzen (2015) further explains that only when the above preconditions are properly addressed, changes in belief will have a positive impact on intentions, and in turn individuals will be more likely to translate their intentions into behaviour.

Fayolle and Liñán (2014) propose that researchers should apply the theory of implementation-intention (Gollwitzer 1999), which originates from psychology, to the investigation of the entrepreneurial intentions-behaviour gap. An implementation-intention is a self-regulatory approach in the form of a detailed plan which outlines where, when and how the desired actions will be carried out (Fayolle & Liñán 2014). Furthermore, individuals who develop these detailed plans demonstrate a greater inclination to carry out their intentions (Fayolle & Liñán 2014), therefore, this theory could be applied in entrepreneurship research in order to improve the predictive validity of entrepreneurial behavioural intention. In his study Frese (2009), provides an action-theory perspective on the bases of implementation-intention theory, and explains that in order to carry out behaviour, an individual requires goals, action plans and knowledge as well as self-efficacy.

Fayolle and Liñán (2014) agree with Fayolle et al. (2011) that "the concept of commitment could be the missing link between intention and behaviour in the field of entrepreneurship", and yet the use of this concept in entrepreneurship is absent (Fayolle & Liñán 2014, p. 665). Commitment is a well-established concept in social psychology, which is explained as a decision which can directly influence an individual's future behaviours (Festinger 1964). It is explained that there is a relation between commitment, decision and behaviour, as individuals commit through their behaviours rather than through their feelings and intentions (Fayolle & Liñán 2014). Entrepreneurial commitment is defined as, "the moment when the individual starts devoting most of his or her time, energy, and financial, intellectual, relational and emotional resources to his or her project" (Fayolle et al. 2011, p. 161). This determination to follow through is demonstrated as per findings of the study conducted by Davidsson & Gordon (2016), which reveal despite major obstacles such as a macroeconomic crisis, nascent entrepreneurs who have reached a point far into the start-up process are willing to continue their entrepreneurial journey.

3.0 Methodology:

3.1 Systematic literature review

This research conducts a thorough systematic review of the literature, as it is viewed as improving the review process and outcome quality, as well as being considered as a transparent procedure (Crossan & Apaydin 2010). Systematic literature reviews map out research areas where there is uncertainty, and as a result identify areas which there is lack of relevant research, and where there is a strong need for new studies (Petticrew & Roberts 2008). Furthermore, Petticrew and Roberts (2008) explain that unsystematic literature reviews, where there is a lack of applying scientific principles while reviewing the evidence, may result in biased conclusions, and ultimately, be a waste of resources. Systematic literature reviews provide a comprehensive summary of the evidence, which provides the reader with an objective and reliable overview of the research area, rather than a summary of the author's favourite study collection (Petticrew & Roberts 2008). Therefore, this research reviews and includes all relevant results and discussions from previous studies, to develop a comprehensive foundation on which to build further knowledge. In order to develop a scientific summary of the evidence in research on the entrepreneurial intentions-behaviour link, the methods of this study must be set out in advance and in detail (Petticrew & Roberts 2008), therefore in the next section the research methods of this study are discussed.

3.2 Experience sampling methodology

This research uses a longitudinal mixed-methods approach of both quantitative and qualitative. Initially ten individuals will be interviewed. The participants that will be selected for an interview will in their own opinion have a high level of intentions to start a new venture in the next eight months. These comprehensive interviews will be designed to develop the foundation on which to guide the research into the next phase of carrying out an experience sampling methodology (ESM). These interviews will also assist to further develop an existing and validated intention scale, while ensuring and confirming that all interviewees possess a high level of entrepreneurial intentions. Following the interviews ESM will be carried out for a period of six months for 50 participants. The type of participants selected for ESM, will be similar to the study conducted by van Gelderen et al. (2015), as participants will form a random sample of the population, focusing on

individuals who have high level of intentions to engage in new venture creation in the following six months.

Uy et al. (2010), propose that carrying out ESM approach in the field of entrepreneurship, will assist to advance theory and research. ESM requires individuals to provide information on their thoughts, feelings as well as behaviours at multiple times as events occur in the natural environment (Uy et al. 2010). Shane and Venkataraman (2000), explain that due to entrepreneurship being a process which takes place over time, in order to advance research in this field, it is crucial to carry out process-oriented studies. Majority of the methodological tools used in entrepreneurship research, do not have the capacity to analyse dynamic processes, as they investigate relationships and variables in a static manner (Uy et al. 2010). Uy et al. (2010) further explain that a major gap in entrepreneurship literature is the lack of examination of within-individual relationships, explaining 1 – each individual shares their own information, therefore is it important to capture this individualized information. 2 – entrepreneurship research should focus on comparing individual performance over time rather than performance comparison between individuals (Uy et al. 2010). Therefore, Uy et al. (2010) recommend the innovative method approach of ESM to comprehensively capture the dynamic factors in cognition and feelings, which influence entrepreneurial decision making and behaviour. Most entrepreneurs operate in environments which are usually uncertain and ambiguous, which as a result creates difficulty for them to recall and provide detailed descriptions of what researchers seek to understand. This research will use the mobile phone-based ESM approach, therefore, being able to send participants SMS prompts in order to monitor and interact with each individual in real time, in order to minimise memory biases. ESM requires participants to respond at multiple times during the research, and therefore the total sample size reflects the total number of data points rather than the total number of participants, which is sufficient in statistical analyses (Uy et al. 2010). This study aims to provide a significant contribution to research in entrepreneurship, through being able to report on the experiences of the same set of participants over a period of time, rather than comparing performance between individuals. It has been explained that within-individual variability is meaningful as well as substantial, as variables such as effort and performance have been demonstrated to change over time (Uy et al. 2010).

Currently there is a clear lack of ESM approach being used in entrepreneurship research, therefore in order to reduce this gap; this research adopts this high-involvement research design approach. Uy et al. (2015), use ESM in their study to thoroughly investigate the predictors of sustaining effort among entrepreneurs, and as a result they offer a comprehensive insight into what sustains entrepreneurial effort, which in turn motivates the individual to continue their efforts on working on the venture. The latest comprehensive study on the entrepreneurial intentions-behaviour link is conducted by van Gelderen et al. (2015). Their two main recommendations for future research could both be addressed through adopting the ESM approach. The first recommendation is for future studies to collect multiple sets of data over shorter periods of time. The second recommendation is to collect a larger quantity of data. ESM requires participants to respond at multiple times during a day, and therefore they provide data in both shorter periods of time as well increasing the total sample size as the point in time becomes the total number of data points (Uy et al. 2010).

4.0 Discussion & Results

As mentioned earlier, the aim of this research is to investigate conditions where persistent entrepreneurial intentions do not translate into subsequent behaviour, instead the behaviour is consistently postponed. van Gelderen (2009), explains that in order to focus on strategies that can be put in place to overcome the issue of procrastination, personality factors are not considered in his study. van Gelderen (2009), proposes the following specific remedies in order to address and minimize the entrepreneurial intention-behaviour gap:
Dealing with competing goals: Starting a new venture is a long-term goal, and therefore is required to be protected from other shorter term and urgent goals (Frese 2007). One main strategy that is recommended to overcome competing goals, is prioritisation, in order to ensure that the entrepreneurial intention is one of the top goals on the individual's list. Once this has been confirmed, then effective time management skills are required in order to allocate various resources towards the entrepreneurial goal. Furthermore, van Gelderen (2009), discusses the importance of implementation intentions, which lead to behaviour, through supplementing goal intentions, by developing a detailed plan of where, when and how a specific action will be performed.

Dealing with aversive aspects: Two main strategies are discussed in dealing with aversive aspects of starting a new venture, one is to make the aspect more attractive, such a reward. The other strategy is to delegate the aversive tasks to individuals who either do not find the task to be aversive, or they are paid to complete the task.
Overcoming fear: Rachman (2004) defines courage as taking action even if being afraid. Courage is determined by three main factors: exposure to the action, skills and knowledge, and situational demand (Rachman 2004). It is important that individuals experience trial and error in entrepreneurship, and therefore get exposure to the various entrepreneurial tasks. Skills and knowledge is very crucial as it results in increased confidence, which then promotes behaviour. Situational demands are referred to as the aspects in the environment which persuade individuals to behave in a courageous way. One strategy is working as part of a team in which others depend on the behaviour of the individual.

Minimising action uncertainty: The aim of minimising action uncertainty is to move from conscious to unconscious processing. Skills and knowledge, detailed plans and experimentations will help to reduce action uncertainty, resulting in actions being processed automatically.

Practising self-regulatory strength: Baumeister et al. (2006), demonstrated in their study that exercising self-regulatory strength, leads to not only improvements in self-control in a particular field, but it also extends to other domains unrelated to the initial practice.

Therefore, van Gelderen (2009), concludes that individuals can become more effective at taking entrepreneurial actions, through the training of completely unrelated self-regulatory strength practices.

In order to gain a more thorough understanding of the entrepreneurial intentions-behaviour link, van Gelderen (2009), recommends researchers to repeatedly measure intentions, assess intention elaboration, consider goal intention attributes, consider competing goals and intentions, and on the action level measure aversion, fear and uncertainty.
This research aims to significantly contribute to understanding the conditions which persistent entrepreneurial intentions fail to translate into subsequent behaviour, which in

turn may have a profound effect on improving the rate of the creation of new ventures that potentially may have a positive national or global impact.

The main limitation in this research is associated with carrying out the ESM approach, as it requires a high level of commitment from the participants, in addition to resources required, such Java programming and installation of the program on individuals' mobile phones. Overcoming these limitations associated with ESM has been explained to lead to "the advancement of entrepreneurship theory and can also offer insights into entrepreneurship practice" (Uy et al. 2010, p. 48).

There is significant evidence which links entrepreneurial activity, defined as the process of initiating and continuing to grow a new business, to desirable outcomes such as: economy competitiveness, job creation, innovation, reduction in unemployment, and social and economic mobility (Malchow-Møller, Schjerning & Sørensen 2011). As a result, governments in most developed countries have put in place policies aimed at stimulating entrepreneurial activity.

The findings of this research could have a profound value and impact on improving entrepreneurship ecosystems, through assisting to advance the programs offered by the community such as entrepreneurship education, incubation programs and governments to develop and sustain entrepreneurship. These program initiatives will be better designed to improve the rate of which aspiring entrepreneurs translate their intentions into action through starting and developing new ventures. In specific education programs, which are focused on improving and developing students' entrepreneurial intentions could redesign the courses so that they would have a robust outcome focus on improving the rate at which entrepreneurial intentions lead to subsequent behaviour. At the individual level, aspiring entrepreneurs with developed intentions to start a new venture, could practice and implement the suggestions that will be made in this research, which will have a strong focus on how the gap between entrepreneurial intentions and behaviour could be minimised.

Reference List

Ajzen, I 2015, 'The theory of planned behaviour is alive and well, and not ready to retire: a commentary on Sniehotta, Presseau, and Araújo-Soares', *Health Psychology Review*, vol. 9, no. 2, pp. 131-137.

Anderson, CJ 2003, 'The psychology of doing nothing: Forms of decision avoidance result from reason and emotion', *Psychological Bulletin*, vol. 129, no. 1, pp. 139-167.

Baron, RA 1998, 'Cognitive mechanisms in entrepreneurship: Why and when entrepreneurs think differently than other people', *Journal of Business Venturing*, vol. 13, pp. 275-294.

Bauer, I & Baumeister, RF 2011, 'Self-regulatory strength', In: Vohs, K, Baumeister, RF (Eds.), *Handbook of Self-Regulation*, 2nd edn, Guilford Press, New York.

Baumeister, RF, Gailliot, M, DeWall, CN & Oaten, M 2006, 'Self-regulation and personality: How interventions increase self-regulatory success, and how depletion moderates the effects of traits on behaviour', *Journal of Personality*, vol. 74, no. 6, pp. 1773-1802.

Baumeister, RF, Vohs, KD, DeWall, CN & Zhang, L 2007, 'How emotion shapes behavior: Feedback, anticipation, and reflection, rather than direct causation', *Personality and Social Psychology Review*, vol. 11, pp. 167-203.

Chaiken, S & Trope, Y 1999, *Dual-process theories in social psychology*, Guilford Press, New York.
Crossan, M & Apaydin, M 2010, 'A Multi-Dimensional Framework of Organizational Innovation: A Systematic Review of the Literature', *The Journal of Management Studies*, vol. 47, no. 6, p.1157.
Davidsson, P & Gordon, SR 2016, 'Much Ado About Nothing? The Surprising Persistence of Nascent Entrepreneurs Through Macroeconomic Crisis', *Entrepreneurship Theory & Practice*, vol. 40, no. 4, pp. 915-941.
Fayolle, A & Liñán, F 2014, 'The future of research on entrepreneurial intentions', *Journal of Business Research*, vol. 67, no. 5, pp. 663-666.
Fayolle, A, Basso, O & Tornikoski, ET 2011, 'Entrepreneurial commitment and new venture creation: A conceptual exploration', In. Hindle, K & Klyver K (Eds.), *Handbook of research on new venture creation*, Edward Elgar Publishing, Cheltenham.
Festinger, L 1964, *Conflict, decision and dissonance*, Stanford University Press, CA.
Frese, M & Zapf, D 1994, 'Action as the core of work psychology: A German approach', In: Triandis, HC, Dunnette, MD & Hough LM (Eds.), *Handbook of Industrial and Organizational Psychology,* vol. 4, Consulting Psychologists Press, CA.
Frese, M 2007, 'The psychological actions and entrepreneurial success: An action theory approach', In: Baum, JR, Frese, M & Baron, RA (Eds.), *The psychology of entrepreneurship*, Lawrence Erlbaum, New Jersey.
Frese, M 2009, 'Toward a psychology of entrepreneurship – an action theory perspective', *Foundations and Tends in Entrepreneurship*, vol. 5, no. 6, pp. 437-496.
Frese, M, Krauss, SI, Keith, N, Escher, S, Grabarkiewicz, R, Luneng, ST & Friedrich, C 2007, 'Business owners' action planning and its relationship to busniness success in three African countries', *Journal of Applied Psychology,* vol. 92, no. 6, pp. 1481-1498.
Gable, SL, Reis, HT & Elliott, AJ 2000, 'Behavioral activation and inhibition in everyday life', *Journal of Personality and Social Psychology*, vol. 78, no. 6, pp. 1135-1149.
Gielnik, MM, Barabas, S, Frese, M, Namatovu-Dawa, R, Scholz, FA, Metzger, JR & Walter, T 2014, 'A temporal analysis of how entrepreneurial goal intentions, positive fantasies, and action planning affect starting a new venture and when the effects wear off', *Journal of Business Venturing*, vol. 29, no. 6, pp. 755-772.
Gollwitzer, PM 1999, 'Implementation intentions – Strong effects of simple plans', *American Psychologist*, vol. 54, no. 7, pp. 493-503.
Kautonen, T, van Gelderen, M & Tornikoski, ET 2013, 'Predicting entrepreneurial behaviour: A test of the theory of planned behaviour', *Applied Economics*, vol. 45, no. 6, pp. 697-707.
Krueger, NF, Reilly, MD & Carsrud, AL 2000, 'Competing models of entrepreneurial intentions', *Journal of Business Venturing*, vol. 15, no. 6, pp. 411-432.
Malchow-Møller, N, Schjerning, B & Sørensen, A 2011, 'Entrepreneurship, job creation and wage growth', *Small Business Economics*, vol. 36, no. 1, pp. 15-32.
Nabi, G, Holden, R & Walmsley, A 2006, 'Graduate career-making and business start-up: A literature review', *Education & Training*, vol. 48, no. 5, pp. 373-385.
Petticrew, M & Roberts, H 2008, *Systematic Reviews in the Social Sciences: A practical guide*, John Wiley & Sons.
Rachman, SJ 2004, 'Fear and courage: A psychological perspective', *Social Research*, vol. 71, no. 1, pp. 149-176.
Schlaegel, C & Koenig M 2014, 'Determinants of Entrepreneurial Intent: A Meta-Analytic Test and Integration of Competing Models', *Entrepreneurship Theory and Practice*, vol. 38, no. 2, pp. 291-332.

Shane, S & Venkataraman, S 2000, 'The promise of entrepreneurship as a field of research', *Academy of Management Review*, vol. 25, pp. 217-226.
Sheeran, P 2002, 'Intention-behaviour relations: A conceptual and empirical overview', *European Review of Social Psychology*, vol. 12, no. 1, pp. 1-36.
Steel, P 2007, 'The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure', *Psychological Bulletin*, vol. 133, no. 1, pp. 65-94.
Uy, MA, Foo, M-D & Aguinis, H 2010, 'Using Experience Sampling Methodology to Advance Entrepreneurship Theory and Research', *Organizational Research Methods*, vol. 13, no.1, pp. 31-54.
Uy, MA, Foo, M-D & Ilies, R 2015, 'Perceived progress variability and entrepreneurial effort intensity: The moderating role of venture goal commitment', *Journal of Business Venturing*, vol. 30, no. 3, pp. 375-389.
Van Eerde, W 2000, 'Procrastination: Self-regulation in initiating aversive goals', *Applied Psychology*, An International Review, vol. 49, no. 3, pp.372-389.
van Gelderen, M 2009, 'From entrepreneurial intention to action initiation', *ICSB World Conference Proceedings*, pp.1-19.
van Gelderen, M, Kautonen, T & Fink, M 2015, 'From entrepreneurial intentions to actions: Self-control and action-related doubt, fear, and aversion', *Journal of Business Venturing*, vol. 30, no. 5, pp. 655-673.
Zhu, J & Thagard, P 2002, 'Emotion and action', *Philosophical Psychology*, vol. 15, no. 1, pp. 19-36.

Appendix 2: ESM application setup instructions

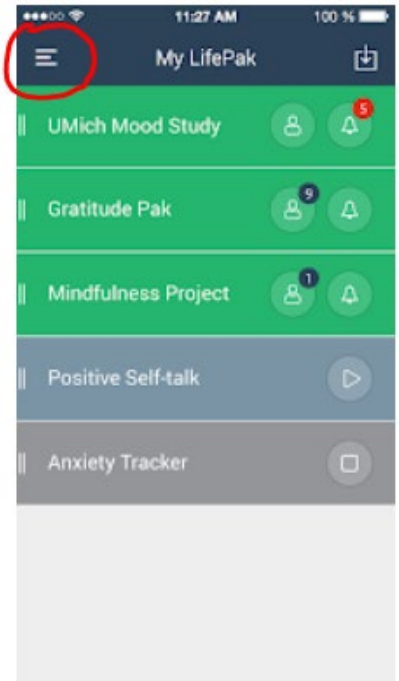
Set-up Instructions

RealLife Exp

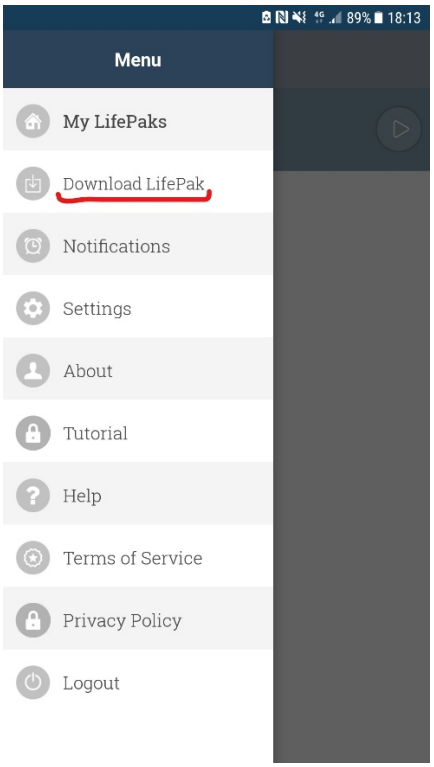
Click on the below link to find out more about this app:

https://play.google.com/store/apps/details?id=com.lifedata.reallife_exp&hl=en

1. Go to your phone's app store and search for the app 'RealLife Exp'
2. Download the app on your smartphone
3. Once download is complete, click on the app and follow the prompts to sign-up within the app
4. Click on the dropdown menu option next to 'My LifePak' at the top left-hand side

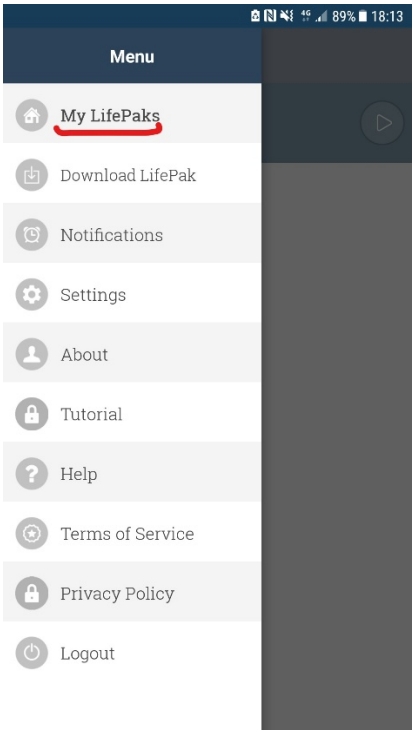


5. Select 'Download LifePak'

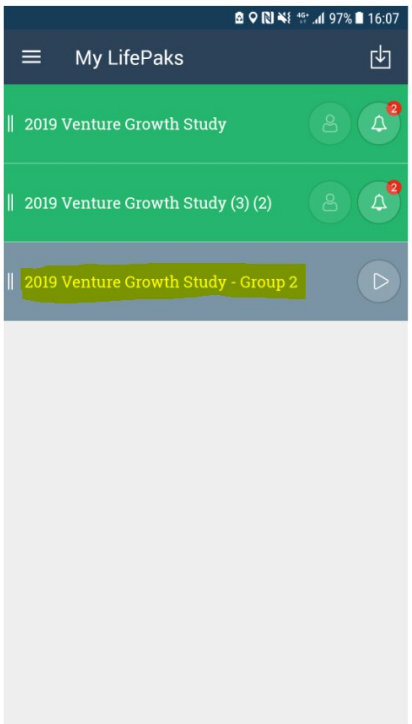


6. Scroll through the list of LifePaks and find the LifePak named '**2019 Venture Growth Study – Group 2**' then click on the download button as shown in the image below

7. Once you download the LifePak '**2019 Venture Growth Study – Group 2**', click on the dropdown menu on the top left-hand side and select 'My LifePaks'

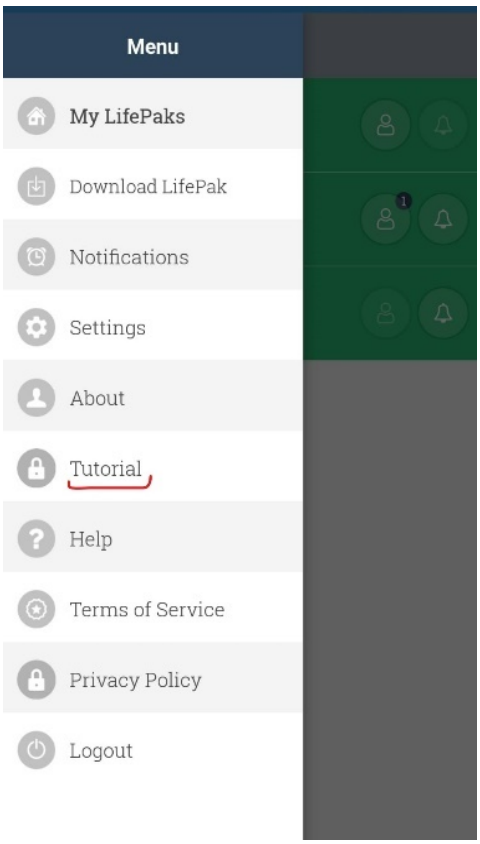


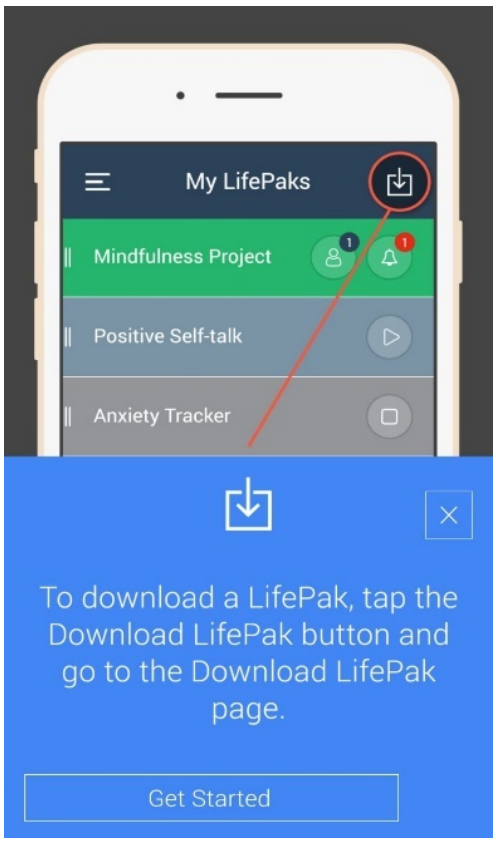
8. You will now see the '**2019 Venture Growth Study – Group 2**' LifePak as shown in the image below
9. Click on this life pack to begin answering the one-off questions and the Entrepreneurial Personality Test questions.



10. After completing the one-off questions, you will then start receiving the daily survey notifications automatically on your phone.

For more instructions on how to use the app, click on the dropdown menu and select 'Tutorial', which will then take you through some simple instructions:





If you have any questions at all, please feel free to email me on:

19099863@students.latrobe.edu.au

Thank you

Ana

Appendix 3: Start-up Victoria newsletter feature

Personal Traits and Growing Your Business

Would you like to learn about your personal traits and be able use it to your advantage to grow your business?

Prominent Psychologist in Entrepreneurship Dr. Martin Obschonka will personally analyse the results of your personality trait test and provide personal feedback and recommendations.

This opportunity is offered to all those who participate in an Entrepreneurship PhD research which investigates how entrepreneurs can more effectively grow their business.

To qualify to participate in this research you must either **partly or fully own and manage a new business which is between 4 months and 3.5 years old.**

The results of this study will be presented in a report format available to all the participants.

All that is required of you is to download the free app 'RealLife Exp' on your smartphone and receive question notifications which you can then complete within the app. It's highly simple and fast (5-10 seconds per response to be exact), designed especially for busy entrepreneurs like yourself!

If you would like to sign-up to learn more about yourself and become part of this first of its kind research in Australia, then please click on the below link to join:
https://www.surveymonkey.com/r/9W5BWDC

Ana Amirsardari
BBus MBA/MEI
PhD Candidate
Department of Entrepreneurship, Innovation & Marketing | La Trobe Business School
Email: 19099863@students.latrobe.edu.au

Appendix 4: Big five trait taxonomy questionnaire

I see myself as someone who…

1 (disagree strongly)

2 (disagree a little)

3 (neither agree nor disagree)

4 (agree a little)

5 (agree strongly)

Q1: Is talkative
Q2: Tends to find fault with others

Q3: Does a thorough job
Q4: Is depressed, blue
Q5: Is original, comes up with new ideas
Q6: Is reserved

Q7: Is helpful and unselfish with others
Q8: Can be somewhat careless

Q9: Is relaxed, handles stress well
Q10: Is curious about many different things

Q11: Is full of energy
Q12: Starts quarrels with others

Q13: Is a reliable worker
Q14: Can be tense
Q15: Is ingenious, a deep thinker
Q16: Generates a lot of enthusiasm

Q17: Has a forgiving nature
Q18: Tends to be disorganised

Q19: Worries a lot
Q20: Has an active imagination

Q21: Tends to be quiet
Q22: Is generally trusting

Q23: Tends to be lazy
Q24: Is emotionally stable, not easily upset
Q25: Is inventive
Q26: Has an assertive personality
Q27: Can be cold and aloof
Q28: Perseveres until the task is finished
Q29: Can be moody
Q30: Values artistic, aesthetic experiences
Q31: Is sometimes shy, inhibited
Q32: Is considerate and kind to almost everyone
Q33: Does things efficiently
Q34: Remains clam in tense situations
Q35: Prefers work that is routine
Q36: Is outgoing, sociable
Q37: Is sometimes rude to others
Q38: Makes plans and follows through with them
Q39: Gets nervous easily
Q40: Likes to reflect, play with ideas
Q41: Has few artistic interests
Q42: Likes to cooperate with others
Q43: Is easily distracted
Q44: Is sophisticated in art, music, or literature

Appendix 5: Requirements of participation

Dear highly valued participant,

Firstly, I would like to thank you for agreeing to take part in this exciting and first of its kind Entrepreneurship PhD research study. Your participation is highly of value to this research study.

The aim of this study is to investigate how entrepreneurs can grow their business through various activities and provide practical recommendations for you 😊

Please respond to **ALL** the notifications that you will receive throughout the **entire period of this study**, in order to for us to collect accurate data and be able to provide you with the results of your **Entrepreneurial Personality Test**.

Please read the below carefully:

1 - 1 - Download the app called 'RealLife Exp' which you can find in your phone's app store. I have attached instructions on how to download the app.

2 - I have also provided instructions (in the same attachment) on how to download this particular research project (referred to as LifePak in the app), which is the LifePak called '**2019 Venture Growth Study'** within the app itself.

3 – It is **IMPORTANT that you download the app and the LifePak as soon as you see this email** as the first questionnaire is programmed to be delivered on the **31st January 2019**. If you miss this date you will unfortunately miss out on being part of this study.

4 – Please **respond to each questionnaire as soon as you receive the notification** on your phone (usually takes about 3-5 seconds to complete) as it is important that your responses reflect what you are thinking at that exact moment in time, which is a **HIGHLY CRUCIAL aspect of this research**. You will however receive a reminder notification after 1 hour if you have not yet responded to the questionnaire.

5 – Once you download the app you will receive a set of short and simple questions (**these are a set of one-off questions**) in order to gather further information about you. You will also receive the **Entrepreneurial Personality Test** questions which we will use to analyse your entrepreneurial personality type. These results will be individually analysed and sent to you with explanations and recommendations.

6 – As mentioned before the first questionnaire will begin on the **31st January 2019**. From this date onward, you will **receive 4 questionnaires per day** (at randomly selected times) **for 6 consecutive days**, you will then **get 3 days off** (where no questionnaires will

be sent out to you). After the 3 days off the questionnaires will start again and this process **will continue for the next 3 months**.

7 – If at any stage you have any questions please feel free to contact me via email and I will respond to you as soon as possible. My email address is:

19099863@students.latrobe.edu.au

Once again thank you so much for agreeing to participate in this essential entrepreneurship research, your contribution and time is highly valued and appreciated.

Anahita (Ana) Amirsardari

BBus MBA/MEI

PhD Candidate

Department of Entrepreneurship, Innovation & Marketing | La Trobe Business School

College of Arts, Social Sciences and Commerce (ASSC) | La Trobe University | Bundoora, VIC 3086 Australia

E: 19099863@students.latrobe.edu.au

Appendix 6: HREC approval of application ID: HEC18088

Dear Phoebus Maritz,

The following project has been assessed as complying with the National Statement on Ethical Conduct in Human Research. I am pleased to advise that your project has been granted ethics approval and you may commence the study.

Application ID: HEC18088
Application Status/Committee: Arts, Social Sciences & Commerce College Human Ethics Sub-Committee

Project Title: Using experience sampling methodology (ESM) to investigate entrepreneurial effort intensity within the context of new venture creation.

Chief Investigator: Phoebus Maritz

Other Investigators: Anahita Amirsardari

Date of Approval: 08/05/2018
Date of Ethics Approval Expiry: 08/05/2023

Warm regards,

Human Research Ethics Team
Ethics, Integrity & Biosafety, Research Office

Appendix 7: Participant information statement and consent form

LA TROBE UNIVERSITY

Participant Information Statement and Consent Form

[INSERT/DELETE – Partner logo/s]

The research is being carried out by the following researcher: Anahita Amirsardari The research is being carried out in partial fulfilment of PhD under the supervision of Professor Alex Maritz. The following researcher will be conducting the study:		
Role	**Name**	**Organisation**
PhD student	Anahita (Ana) Amirsardari	La Trobe University
Research funder	This research is supported by La Trobe University.	

1. **What is the study about?**
   You are invited to participate in a study of investigating entrepreneurial growth intensity, investigating how venture growth is attained among early stage entrepreneurs. This study as far as our knowledge will be the first of its kind to be conducted in Australia, as we aim to measure dynamic entrepreneurial activities through using experience sampling methodology (ESM). We hope to learn and investigate factors contributing to entrepreneurial actions and effort towards new venture growth, in specific measuring the effects of implementation intentions and venture goal commitment, using validated instruments and measures from international studies.

   Your contact details were obtained from yourself by signing up to show your interest to participate in this study.

2. **Do I have to participate?**
   Being part of this study is voluntary. If you want to be part of the study, we ask that you read the information below carefully and ask us any questions.

   You can read the information below and decide at the end if you do not want to participate. If you decide not to participate this won't affect your relationship with La Trobe University or any other listed organisation.

3. **Who is being asked to participate?**
   You have been asked to participate because:
   - You are classified as young business entrepreneurs who either partly or fully own and manage a new venture which is between 4 months and 3.5 years, and as a result have not paid salaries for longer than this period.

4. **What will I be asked to do?**
   If you want to take part in this study, we will ask you to complete some questionnaires via the app 'RealLifeExp'. This study will be for a duration of 3 months.

5. **What are the benefits?**
   The benefit of you taking part in this study is that apart from being as far as to our knowledge the first of its kind to be conducted in Australia, participants will receive valuable insight on how to attain new venture growth through practical recommendations and advise. The expected benefits to society in general are providing insight on how to improve the rate of new venture growth, which in turn will be able to contribute to the economic growth of countries. Furthermore, these new organisations will be able to create many employment opportunities for various communities.

6. **What are the risks?**
   With any study there are (1) risks we know about, (2) risks we don't know about, and (3) risks we don't expect. If you experience something that you aren't sure about, please contact us immediately, so we can discuss the best way to manage your concerns.

Name/Organisation	Position	Telephone	Email
Ana/La Trobe University	PhD student	0421 082 721	19099863@students.latrobe.edu.au

7. **What will happen to information about me?**

We will collect and store information about you in ways that will not reveal who you are. This means you cannot be identified in any type of publication from this study.

We will keep your information for 15 years after the project is completed. After this time, we will destroy all of your data.

We will collect, store and destroy your data in accordance with La Trobe Universities Research Data Management Policy which can be viewed online using the following link: https://policies.latrobe.edu.au/document/view.php?id=106/.

The information you provide is personal information for the purposes of the Information Privacy Act 2000 (Vic). You have the right to access personal information held about you by the University, the right to request correction and amendment of it, and the right to make a compliant about a breach of the Information Protection Principles as contained in the Information Privacy Act.

1. **Will I hear about the results of the study?**
   We will let you know about the results of the study by sending it through to the email address provided by you, and the results will be individual and/or group results.

   The results of the study will appear in the thesis for this PhD study, journal articles, PhD colloquiums and/or conference presentations.

2. **What if I change my mind?**
   At any time, you can choose to no longer be part of the study. You can let us know by:
   1. Completing the 'Withdrawal of Consent Form' (provided at the end of this document);
   2. Calling us;
   3. Emailing us

   Your decision to withdraw at any point will **not** affect your relationship with La Trobe University or any other organisation listed.

   When you withdraw we will stop asking you for information. Any identifiable information about you will be withdrawn from the research study. However, once the results have been analysed we can only withdraw information, such as your name and contact details. If results haven't been analysed, you can choose if we use those results or not.

3. **Who can I contact for questions or want more information?**
   If you would like to speak to us, please use the contact details below:

Name/Organisation	Position	Telephone	Email
Ana/La Trobe University	PhD student	0421 082 721	19099863@students.latrobe.edu.au
Alex/La Trobe University	Professor	03 9479 5176	a.maritz@latrobe.edu.au

4. **What if I have a complaint?**
   If you have a complaint about any part of this study, please contact:

Ethics Reference Number	Position	Telephone	Email
	Senior Research Ethics Officer	+61 3 9479 1443	humanethics@latrobe.edu.au

Consent Form – Declaration by Participant

I (the participant) have read (or, where appropriate, have had read to me) and understood the participant information statement, and any questions have been answered to my satisfaction. I agree to participate in the study, I know I can withdraw at any time. I agree information provided by me or with my permission during the project may be included in a thesis, presentation and published in journals on the condition that I cannot be identified.

I would like my information collected for this research study to be:

☐ Only used for this specific study;
☐ Used for future related studies;
☐ Used for any future studies

I agree to have my interview audio and/or video recorded

☐ I would like to receive a copy of the results via email or post. I have provided my details below and ask that they only be used for this purpose and not stored with my information or for future contact.

Name	Email (optional)	Postal address (optional)

Participant Signature

☐ I have received a signed copy of the Participant Information Statement and Consent Form to keep

Participant's printed name	
Participant's signature	
Date	

Declaration by Researcher

☐ I have given a verbal explanation of the study, what it involves, and the risks and I believe the participant has understood;
☐ I am a person qualified to explain the study, the risks and answer questions

Researcher's printed name	ANAHITA AMIRSARDARI
Researcher's signature	
Date	20/01/2019

* All parties must sign and date their own signature

Withdrawal of Consent

I wish to withdraw my consent to participate in this study. I understand withdrawal will not affect my relationship with La Trobe University of any other organisation or professionals listed in the Participant Information Statement. I understand the researchers cannot withdraw my information once it has been analysed, and/or collected as part of a focus group.

I understand my information will be withdrawn as outlined below:

- ✓ Any identifiable information about me will be withdrawn from the study
- ✓ The researchers will withdraw my contact details so I cannot be contacted by them in the future studies unless I have given separate consent for my details to be kept in a participant registry.
- ✓ The researchers cannot withdraw my information once it has been analysed, and/or collected as part of a focusgroup

***if you have consented for your contact details to be included in a participant registry you will need to contact the registry staff directly to withdraw your details.*

I would like my already collected and unanalysed data

☐ Destroyed and not used for any analysis
☐ Used for analysis

Participant Signature

Participant's printed name	
Participant's signature	
Date	

Please forward this form to:

CI Name	Ana/ La Trobe University
Email	19099863@students.latrobe.edu.au
Phone	0421 082 721
Postal Address	N/A

Appendix 8: Planning and scheduling of ESM questionnaires

Scheduling for Group one: (31-01-2019 to 18-05-2019)

January 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
				Control variables & big 5 trait taxonomy	Goal intention & growth intention	

February 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	28	29	30	31	1	2
						Day off
3	4	5	6	7	8	9
Day off	ESM Survey	ESM Survey	ESM Survey	ESM Survey	ESM Survey	ESM Survey
10	11	12	13	14	15	16
Day off	Day off	Day off	ESM Survey	ESM Survey	ESM Survey	ESM Survey
17	18	19	20	21	22	23
ESM Survey	ESM Survey	Day off	Day off	Day off	ESM Survey	ESM Survey
24	25	26	27	28	1	2
ESM Survey	ESM Survey	ESM Survey	ESM Survey	Day off	Day off	Day off

March 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
24	25	26	27	28	1	2
ESM Survey	ESM Survey	ESM Survey	ESM Survey	ESM Survey	Day off	Day off
3	4	5	6	7	8	9
Day off	Goal intention & growth intention	ESM Survey	ESM Survey	ESM Survey	ESM Survey	ESM Survey
10	11	12	13	14	15	16
ESM Survey	Day off	Day off	Day off	ESM Survey	ESM Survey	ESM Survey
17	18	19	20	21	22	23
ESM Survey	ESM Survey	ESM Survey	Day off	Day off	Day off	ESM Survey
24	25	26	27	28	29	30
ESM Survey	ESM Survey	ESM Survey				
31	1	Notes				

April 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31	1	2	3	4	5	6
			ESM Survey	ESM Survey	Day off	Day off
7	8	9	10	11	12	13
Day off	ESM Survey	ESM Survey	ESM Survey	ESM Survey	ESM Survey	Day off
14	15	16	17	18	19	20
Day off	Day off	Goal intention & growth intention	ESM Survey	ESM Survey	ESM Survey	ESM Survey
21	22	23	24	25	26	27
ESM Survey	ESM Survey	Day off	Day off	Day off	ESM Survey	ESM Survey
28	29	30	1	2	3	4
ESM Survey	ESM Survey	ESM Survey				

May 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	1	2	3	4
			ESM Survey	Day off	Day off	Day off
5	6	7	8	9	10	11
ESM Survey	ESM Survey	ESM Survey	ESM Survey	ESM Survey	ESM Survey	Day off
12	13	14	15	16	17	18
Day off	Day off	ESM Survey	ESM Survey	ESM Survey	ESM Survey	ESM Survey
19	20	21	22	23	24	25
26	27	28	29	30	31	1

Scheduling for Group two: (30-03-2019 to 19-07-2019)

March 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
24	25	26	27	28	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30 Goal intention & growth intention
31 ESM Survey	1	Notes				

April 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31	1 ESM Survey	2 ESM Survey	3 ESM Survey	4 ESM Survey	5 ESM Survey	6 Day off
7 Day off	8 Day off	9 ESM Survey	10 ESM Survey	11 ESM Survey	12 ESM Survey	13 ESM Survey
14 ESM Survey	15 Day off	16 Day off	17 Day off	18 ESM Survey	19 ESM Survey	20 ESM Survey
21 ESM Survey	22 ESM Survey	23 ESM Survey	24 Day off	25 Day off	26 Day off	27 ESM Survey
28 ESM Survey	29 ESM Survey	30 ESM Survey	1	2	3	4

May 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	1	2	3	4
			ESM Survey	Day off	Day off	Day off
5	6	7	8	9	10	11
Goal intention & growth intention	ESM Survey	ESM Survey	ESM Survey	ESM Survey	ESM Survey	ESM Survey
12	13	14	15	16	17	18
Day off	Day off	Day off	ESM Survey	ESM Survey	ESM Survey	ESM Survey
19	20	21	22	23	24	25
ESM Survey	ESM Survey	Day off	Day off	Day off	ESM Survey	ESM Survey
26	27	28	29	30	31	1
ESM Survey	ESM Survey	ESM Survey	ESM Survey	Day off	Day off	

June 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	29	30	31	1
						Day off due to break
2	3	4	5	6	7	8
Day off due to break	Day off due to break	Day off due to break	Day off due to break	Day off due to break	Day off due to break	Day off due to break
9	10	11	12	13	14	15
ESM Survey	ESM Survey	ESM Survey	ESM Survey	ESM Survey	Day off	Day off
16	17	18	19	20	21	22
Day off	Goal intention & growth intention	ESM Survey	ESM Survey	ESM Survey	ESM Survey	ESM Survey
23	24	25	26	27	28	29
ESM Survey	Day off	Day off	Day off	ESM Survey	ESM Survey	ESM Survey
30	1	Notes				
ESM Survey						

July 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	1	2	3	4	5	6
	ESM Survey	ESM Survey	Day off	Day off	Day off	ESM Survey
7	8	9	10	11	12	13
ESM Survey	ESM Survey	ESM Survey	ESM Survey	ESM Survey	Day off	Day off
14	15	16	17	18	19	20
Day off	ESM Survey	ESM Survey	ESM Survey	ESM Survey	ESM Survey	
21	22	23	24	25	26	27
28	29	30	31	1	2	3

Appendix 9: Entrepreneurial effort intensity (towards venture growth) scale

Q1: Over the last 7 days how much effort did you put into administrative venture tasks aimed to grow your venture?
(*some examples of administrative tasks may include maintaining supplies and equipment, generating reports and daily operations*)

1 (very little) 2 (little) 3 (none) 4 (some) 5 (lot)

Q2: Over the last 7 days how much effort did you put into creative venture tasks aimed to grow your venture?
(some examples of creative tasks may include strategising to grow the product line, entering into new partnerships, and developing new revenue streams)

1 (very little) 2 (little) 3 (none) 4 (some) 5 (lot)

Q3: Over the last 7 days how much effort did you put into growth specific tasks?
(some examples of growth tasks may include expanding the product or service line, increasing marketing or sales, opening a new shop, hiring more staff, expanding distribution)

1 (very little) 2 (little) 3 (none) 4 (some) 5 (lot)

Appendix 10: Implementation intention (towards venture growth tasks) scale

Q1: I have already planned precisely where to engage in performing specific venture growth tasks.

1 (not at all true) 2 (not true) 3 (a little true) 4 (absolutely true)

Q2: I have already planned precisely when to engage in performing specific venture growth tasks.

1 (not at all true) 2 (not true) 3 (a little true) 4 (absolutely true)

Q3: I have already planned precisely how to engage in performing specific venture growth tasks.

1 (not at all true) 2 (not true) 3 (a little true) 4 (absolutely true)

Appendix 11: Venture goal commitment (towards venture growth) scale

1 - Determination:

Q1: No matter what happens, I will not give up my goal of growing the venture.

1 (strongly disagree) 2 (disagree) 3 (neither agree nor disagree)
4 (agree) 5 (strongly agree)

Q2: I sometimes doubt whether I shall definitely accomplish my goal of growing the venture.

1 (strongly disagree) 2 (disagree) 3 (neither agree nor disagree)
4 (agree) 5 (strongly agree)

2 - Urgency:

Q1: I have the urgent feeling to immediately start working on my goal of growing the venture.

1 (strongly disagree) 2 (disagree) 3 (neither agree nor disagree)
4 (agree) 5 (strongly agree)

Q2: I think I will wait awhile until I begin working on my goal of growing the venture.

1 (strongly disagree) 2 (disagree) 3 (neither agree nor disagree)
4 (agree) 5 (strongly agree)

3 - Willingness:

Q1: Even if it means a lot of effort, I will do everything necessary to accomplish my goal of growing the venture.

1 (strongly disagree) 2 (disagree) 3 (neither agree nor disagree)
4 (agree) 5 (strongly agree)

Q2: If my goal of growing the venture implies lots of difficulties, I am willing to postpone it for a while.

1 (strongly disagree) 2 (disagree) 3 (neither agree nor disagree)
4 (agree) 5 (strongly agree)

4 - Opportunity:

Q1: I have many opportunities in my everyday life to work on my goal of growing the venture.

1 (strongly disagree) 2 (disagree) 3 (neither agree nor disagree)
4 (agree) 5 (strongly agree)

Q2: I don't have much time in my everyday life to work on my goal of growing the venture.

1 (strongly disagree) 2 (disagree) 3 (neither agree nor disagree)
4 (agree) 5 (strongly agree)

5 - Control:

Q1: It depends totally on me whether my goal of growing the venture is fulfilled or not.

1 (strongly disagree) 2 (disagree) 3 (neither agree nor disagree)
4 (agree) 5 (strongly agree)

Q2: Whether my goal of growing the venture is accomplished or not substantially depends on external factors that are not under my personal control.

1 (strongly disagree) 2 (disagree) 3 (neither agree nor disagree)
4 (agree) 5 (strongly agree)

6 - Support:

Q1: Concerning my goal of growing the venture, I can definitely rely on the support of those close to me.

1 (strongly disagree) 2 (disagree) 3 (neither agree nor disagree)
4 (agree) 5 (strongly agree)

Q2: Those close to me have no understanding for my goal of growing the venture.

1 (strongly disagree) 2 (disagree) 3 (neither agree nor disagree)
4 (agree) 5 (strongly agree)

Appendix 12: Goal intention and strength (towards venture growth tasks) scale

Q1: Do you intend to perform venture growth tasks in the next coming month?

1 (definitely not) 2 (possibly)

Q2: Please select which option best describes your intention regarding venture growth tasks:
(only participants who selected 'possibly' in the previous question, receive this question)

1 (perhaps I will but I am not yet sure) 2 (I am pretty sure/ I definitely will)

Appendix 13: Venture growth intention scale

Q1: What is your intention for the new venture in the next coming month?

1 (grow substantially) 2 (grow moderately) 3 (stay the same size)
4 (become smaller)

Q2: How do you intend to grow the new venture?

Examples: *to expand the product or service line, increase marketing or sales, open a new shop, hire more staff, expand distribution, etc.*

Q3: Has anything prevented or interfered in any way with your attempts to achieve your growth intentions?

Examples: *lack of access to capital, too much bureaucracy, frequent inspections, lack access to skilled labour, high competition, etc.*

Appendix 14: Questions for control variables

Q1: What is your gender?

Male

Female

Q2: What is your age?

Q3: What is your completed educational level?

High school degree or equivalent

Associate degree or equivalent

Bachelor's degree or equivalent

Master's degree or equivalent

Doctorate or equivalent

Q4: What are your parents' entrepreneurial background?

Both parents are not self-employed

One parent is self-employed

Both parents are self-employed

Q5 (a): Do you have prior entrepreneurial experience?

Yes

No

Q5 (b): If yes, how many years of entrepreneurial experience do you have?

Q6: What is the type of your business activity?

Part-time business

Sole proprietorship employing only the founder

Small business employing a few people

Business into which the aspiring entrepreneur intends to invest for growth

Q7: Please advise in which country do you operate most of your business in?