Nascent Entrepreneurial Capital and Its Impact on New Venture Creation

A thesis submitted for the Degree of Doctor of Philosophy

By

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December 2017

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Abstract

Purpose: This research aims to study the roles played by entrepreneurial human, social, cognitive capital and related process dynamics in venture emergence, exploring their main and combined effects on the model of the determinants of success in Nascent Entrepreneurship. This provides strong evidence for the connection from resources to process dynamics and ultimately to venture outcomes.

Methodology Approach: An empirical model is developed to test a research's framework that focuses on formulating and testing coherent conceptual propositions utilising a longitudinal sample of secondary data from a mix gender sample of 816 nascent entrepreneurs in the United States who were tracked over four consecutive years.

Findings: The empirical analysis showed significant support for the proposed conceptual model. The findings support the partial influence of the main attributes of nascent entrepreneurial capital (social, human and cognitive capitals) on the outcomes of new venture creation process, where the drivers of positive outcomes appear to coincide with variables that relate to cognitive capital. More importantly, the empirical analysis finds significant interaction effects between elements of nascent entrepreneurial capital and their interplay with the process dynamics confirming the conceptual proposition of an integrative framework encompassing significant associations that constitute the phenomenon of new venture creation. The integrative perspective has implications for Nascent Entrepreneurship theory and practice. First, the main effects of resource endowments should not be taken into account in isolation as predictors of new venture creation outcomes. Second, the role of process dynamics and cognitive capital is best theorised as a moderating variable between the start-up capital's attributes and the venture creation outcomes. Therefore, the findings demonstrate a dominant role of the integrative modelling in driving the transition to the start-up phase.

Limitations: There is no consensus on the measures of success for entrepreneurship research at the nascent phase of business venturing. There is substantial variation in the literature in terms of outcomes, definitions, conceptual works and design issues, and therefore further consideration to control for variations is deemed necessary to ensure valid, cumulative and definitive answers that must be built upon a solid and unified basis. `

Originality: Thesis is original in integrating cognitive abilities and process dynamics with social and human capital in a model of the determinants of success in Nascent Entrepreneurship. While we may consider alternative ways to look at interaction/moderation effects across the three different types of " start-up capital", integrating the three elements in a structured and dynamic model of Nascent Entrepreneurship is an original contribution.

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Definitions

Nascent Entrepreneurial Capital ("Start-up Capital"): The three types of entrepreneurial attributes that translate into diffrent forms of nascent entrepreneurial capital: human, social, and cognitive based capital.
Nascent Entrepreneurship (NE): The pre-organisational state where the new venture had to be in the start-up phase of founding and not already an operational venture. It is the founding efforts that involve independent firms that are in the start-up process, exploiting entrepreneurial opportunities by combining resources, and carrying on gestation activities at the early stage of their emergence (Reynolds and White, 1992). For more detailed description, refer to chapter 2 section 2.2.2.
Nascent Entrepreneurs: Nascent entrepreneurs are defined as indivdiuals who are active in the founding process and have been involved in business founding activities in the last twelve months. It is expected that they own parts or the whole company. Nascent entrepreneurs of this study are the founders of small-scale nascent ventures, who are in the process of beginning their entrepreneurial venture with the potential to become successful entrepreneur. However, they may have limited experience or limited practical understanding of the concepts and process involved. For more detailed description, refer to chapter 2 section 2.2.2.
New Venture Creation (NVC): In this study, the phrases of 'New Venture Creation' and 'Nascent Entreprenship' are used interchangeable.
Pre-startup Stage (Gestation): The stage of sitting up a new venture. This stage ends as firms succeed in transiting from gestation (founding efforts) to new firm status.
Process Dynamics (PD): Process dynamics postulate specific changes that nascent entrepreneurs are able to enact as they progress in their new venture's creation journey. These changes are defined in terms of: opportunity change, oppourtunity learning, gestation commitment, gestation activities (intensity of action), gestation duration (rate of action).
Panel Study of Entrepreneurial Dynamics (PSED): PSED provides large-scale longitunial data within a comprehensive longitudinal dataset that facilitates an understanding of the new venture creation process and its unique features.
Linear Modelling: It is the models using each nascent entrepreneurial capital [HC;SC;CC] attribute independently to test their <u>main effects</u> on the outcome of the new venture creation process.
Integrated Modelling: It is the models using the interaction terms/moderation to observe their effects on the outcome of the new venture creation process. These interactions are observed at two levels: **Level (I) -** The interaction between process dynamics (moderators) and "start-up capital's" attributes [HC-PD] [SC-PD] [CC-PD]; **level (II)** - The interaction between the "start-up capital's" attributes themselves [HC-SC] [HC-CC] [SC-CC] – cognitive capital is the moderator.

Acknowledgements

First and foremost, I thank Allah Almighty for giving me the inspiration, patience, time, and strength to finish this work. With Allah's will and mercy I have been able to attain my goal.

I would like to express my sincere gratitude and indebtedness to my supervisors, Dr. Dimitrios Koufopoulos, Professor Rui Baptista and Professor Suma Athreye for their interest in my work, the continuous support of my Ph.D research endeavour, and for their invaluable guidance, immerse knowledge, thoughtful feedback, useful conversations, motivation, and patience throughout the development of this study.

I give my deepest expression of love and appreciation to my family for their belief in me, and their constant moral support, advices and prayers throughout these challenging years and my lifetime. Your unconditional love meant the world for me.

I would like to extend my appreciation to Noor Elahi who inspired me and got me started on my doctoral journey. He was always there to support me and give me strength with love and positivity. Thank you, Noor; your wisdom helped me in shaping my own spirituality in a distinctive way.

Last but not least, my deepest thanks go to my husband and all people who endured this long process with me and took part in making this thesis real. To these people, I owe my gratitude and thanks.

This thesis is dedicated to my mother, and children - Faisal, Omar and Amnah, who shared with me the ups and downs throughout the duration of my studies. You are my inspiration to achieve greatness.

Chapter 1: Introduction and Background Research

This chapter sets out the context and significance of the study by outlining a number of factors involved in the creation of viable, new ventures. The research objectives and questions are presented and the methodology of the research highlighted. The chapter ends with an overview of this monograph.

1.1 Research Context and Significance

Understanding the factors that predict nascent entrepreneurial success is a topic that interests entrepreneurs, academics, practitioners, and decision makers. As more governments encourage individuals to start their own businesses, these individuals strive to seek guidance on how to do this productively. At the same time, governments continue to have an interest in identifying the factors that predict entrepreneurial success in order to effectively select and develop high-potential entrepreneurs. Given the criticality of new ventures to individuals and governments, there is a need to examine the determinants of nascent entrepreneurial success.

Today, entrepreneurship is said to be 'the key to a thriving economic society, where free willing entrepreneurial spirit promotes innovation' (Weisz et al., 2010). Nascent Entrepreneurship is a central part of economic activity. Reynolds et al. (2004) argued that in the US, 10.1 million people said they were attempting to set up a new venture. Reynolds (2005) has further stated, "up to half a billion people in the world are actively involved in either the start-up process or in managing a new business" (p. 362). Contemporary studies continue to highlight the criticality of new venture creation indicating that new start-ups 'account for one-fourth to almost one-third of the variation in economic growth in nearly all industrialised countries' (Carter et al., 2007, p. 433). These findings apparently acknowledge the significance of studying this phenomenon, portraying Nascent Entrepreneurship as a common phenomenon with a fundamental role in the economic progress. However, the increase in the momentum of founding of new ventures is mostly equated with the broad numbers of failed attempts (Levie et al., 2011; Aldrich and Yang, 2013; Gindling and Newhouse 2014). Supporting the deterministic-predictive modeling of entrepreneurship should, therefore, begin with a systematic theoretical foundation at the early stage of business development. Researchers in this school of thought argue that if research in entrepreneurship does not realise how the venture was launched in the first place, then it becomes challenging to understand their performance at subsequent stages. For example, Carland and Carland, (2000, p.

40) argued that 'understanding the phenomenon of entrepreneurship is unlikely given that we seem to jump into the middle of the process, venture performance, and growth, while ignoring its antecedents". Therefore, this research focuses on Nascent Entrepreneurship.

This research synthesizes previous theoretical inquiries that have examined the factors that nurture entrepreneurial success at the pre-start-up stage (i.e. Davidsson and Honig, 2003; Kessler et al., 2012; Gordon, 2012). Apparently, the majority of studies within this literature have typically initiated from the assumption of the more resources, the better the outcome. This notion offers limited potential in explaining entrepreneurial performance by failing to distinguish the differential effects of forms of human, social and cognitive capital on start-up success (Davidsson and Honig, 2003). Indeed, launching a new venture is a complex journey; nascent entrepreneurs must deal with the dynamics, adversities and uncertainties of this journey (Weisz et al., 2010). In order to transform nascent entrepreneurial opportunities into commercial successes and deal with early challenges, nascent entrepreneurs must make informed decisions that maximise the likelihood of attaining favourable outcomes by making use of prior knowledge that appears in the form of human, social and cognitive based capital, as well as extending their dynamic knowledge and expertise as they advance in the pursuit.

'The term "capital" as part of the concept implies a resource or factor input that facilitates production, but is not consumed or otherwise used up in production' (Coleman, 1993, p. 175). Generally, entrepreneurial capital is often used in the literature to denote the capital that relates to entrepreneurs' level of competence, parental background, social heritage, and the amount of capital required to found and grow a new venture (Stringfellow and Shaw, 2009). The framework discussed in the present thesis will use the term 'Nascent Entrepreneurial Capital' or 'Startup Capital Attributes' to refer to the different forms of capital, namely human, social and cognitive capitals, possessed by the nascent entrepreneurs. Start-up capital's attributes are the antecedents of entrepreneurial success that consist of resources that are essential for founding a nascent venture. Among these antecedents of entrepreneurial success, human and financial capitals tend to be the most important for entrepreneurs (Roper and Scott, 2009; Gindling and Newhouse 2014; Cho 2015). However, the present study argues that there are more significant issues to be studied that are less tangible but equally important to the success of new ventures at the nascent stage of business venturing. 'Nascent Entrepreneurial Capital' is based on the aggregate capital that the nascent entrepreneur possesses (Firkin 2003), and this is inclusive of cognitive resources, which together represent start-up capital. Cognitive capital entails the nascent entrepreneur's conviction

that he/she has the capacity to found a venture and the ability to utilize business resources (Baluku et al., 2016). Therefore, analysing and discussing different aspects of the new venture creation process beyond the conventional factors of production is fundamental to Nascent Entrepreneurship.

Research has demonstrated that start-up capital have important impact on entrepreneurial behavior. The focus of the present study is the exploration of the linear and integrative elements that contribute to business founding outcome, that is, the success/failure in the transition from nascent venture into an operational business. Given that many predictors of entrepreneurial success have been acknowledged, it is important for further theory development to identify the integrative importance of different set of predictors. A related question in need of research focus is whether different combinations of predictors exist for each form of nascent entrepreneurial outcomes, such as success versus failure. The study in this respect sheds light on the complex relationship between startup capital's attributes, process dynamics and new venture creation outcome. This enables better understanding of the strengths, weaknesses, potentials and limitations in the endowed resources, and how their combinations and dynamic interactions drive the transition during the start-up phase. Therefore, the focus is on how nascent entrepreneurs of small-scale enterprises utilize the factors and dynamics of nascent entrepreneurial capital that are critical to the success of nascent ventures within our research design based on – the linear modelling of human, social and cognitive-based capital in isolation from other factors, the interplay between [human, social and cognitive-based capital] and [founding process dynamics], and finally the interplay of human, social and cognitive-based capital among themselves.

The present study is interested in identifying the better predictor of nascent entrepreneurial success from 3 forms of capital: human capital, social capital and cognitive capital, with special focus on the premise that unique combinations and dynamics can determine whether a nascent venture is successful or not in driving the conclusion of the start-up process. This focus comes in light of the new movement in entrepreneurship resource theory calling for new and diverse ways to improve the conceptualisation of start-up capital (Baluku et al., 2016) departing from the limitations imposed by the static paradigm. The static-descriptive approach focused on entrepreneurial resources as forms of capital with predictable linkages. This static-descriptive approach excludes interpretative, and iterative elements and this limits the research's potential to conceptualise start-up capital with universal validity. Therefore, the current work is expected to

contribute to the firm emergence-entrepreneurship capital theory with focus on the integrative-dynamic nature of start-up capital's attributes.

The present study is motivated by the observation that not all well-educated, connected and aspiring entrepreneurs are able to successfully launch a new venture. In essence, interrogating the factors that distinguish the success/failure and their interrelations at nascent stage is essential. First, prospective entrepreneurs considering launching a new venture have an interest in understanding the elements that contribute to their potential success and failure and its reciprocal effects. This is knowledge that should aid them in assessing their own outlook and limitations if they choose to pursue an entrepreneurial career. The combinations of start-up capital's attributes enhance their understanding of how success in launching new ventures is attained when different forms of nascent capital evolve and become transferable in a new, coherent knowledge, building synergy with the emerging context of business venturing within a coordinated context that look for the best fit among reality, resources and process dynamics.

Second, knowledge of the actions and behaviours of nascent entrepreneurs is essential for those involved in making and controlling government policies. Entrepreneurism, in essence, has contributed to job creation, economic and social welfare, and innovation (Carree and Thurik, 2003), and hence countries across the world are interested in understanding the barriers for setting up new businesses as well as the underlying factors of success that foster the transition for the venture from a 'dream' to a 'reality'. Over the past three decades, entrepreneurship scholars, practitioners, politicians, regulators and decision makers in different spheres of society have focused their attention on entrepreneurship issues and emerging trends. Various features of entrepreneurship appear to be linked to the distinctive entrepreneurial nature of developing economies, where new venture creation fosters sustainable economic growth, competitiveness, innovation and ultimately socio-economic development.

Comprehensive public policies have therefore been put in practice in both developed and developing countries to encourage business lunching and to match enterprising individuals' capabilities with sponsorship (i.e. funding) schemes for small- and medium-sized enterprises (SMEs) or micro businesses and new venture creation. However, government SME-sponsoring schemes today tend to focus on conventional financial and advisory services, offering 'blanket support' that fails to cater to the idiosyncratic needs or differing resource endowments of their intended targets. According to Davidsson and Honig (2003), policy makers and supporting institutions need to synthesise their fragmented efforts to build robust programmes guided by

structured knowledge. Therefore, the present study aims to contribute to the policy debate on entrepreneurship by offering insights into how government schemes can better add value to entrepreneurial capabilities and create a more enabling entrepreneurial environment by understanding the idiosyncratic requirements of nascent entrepreneurs and their ability to use the funds for the intended purpose. This will help policy makers to improve the impact of policy initiatives on the outcomes of business launching process. One of our aims is to inform decision makers about the factors they should solicit when determining whether and how to provide help to nascent entrepreneurs, and advise them about the expected effects of such factors when considering support schemes. Policies that promote and sustain the creation of new ventures can take advantage of insights into the integrative and dynamic elements that genuinely contribute to the successful emergence of new ventures. Indeed, dealing with new venture creation policies and support schemes requires not only reliance on the nascent entrepreneur's content and depth of knowledge, but also - and more significantly - on understanding how knowledge combines, evolves and changes within a dynamic and coordinated context. In this sense, policy making and support schemes should take into account the coping mechanisms that aid potential and nascent entrepreneurs to tap into meaningful complementary sets of resources that could extend their existing knowledge and bridge deficits in their expertise, contacts, cognitive models and practical approaches.

Third, the research addresses the gap in knowledge concerning this issue. This study of success in the pre-startup phase addresses the linear and integrative effects embodying endowed resources and process dynamics. This, in essence, targets a differential view that goes beyond the mere presence of endowed resources in their isolated form, arguing that the ability to create value lies in the individuals' ability to apply and integrate accumulated knowledge, and define unique paths that enhance their sense of business reality (Kaplan et al., 2003). The study's conceptual approach observe the interdependences between the stated start-up capital's attributes that have emerged to address the observable shift from resource-based economies into knowledge-based economies, where human intellect is viewed as a crucial source of socio-economic development and competitive advantage. This approach is supported by resource-based view (RBV) theory, which has two implications for this study. The first implication asserts the new theoretical and analytical approach, which shows how nascent entrepreneurs utilise their intellectual resources dynamically as they pursue business opportunities. The second implication emphasises the importance of creating combinations, and how organising resources can help in creating unique situations,

fostering or limiting entrepreneurial success. The research, therefore, focuses on formulating and testing theoretical propositions regarding how the resource attributes, which are exhibited in the course of actions taken by nascent entrepreneurs in the US, namely human capital, social capital and cognition, influence the outcome (success/failure) of nascent ventures. We examine how these attributes differ in importance in isolation as predictors of venture outcome, and then as they combine and evolve as a new venture is developed, and ultimately investigate why and how nascent entrepreneurs' resources reservoirs enable them to succeed or cause them to fail in launching new ventures.

To this end, we believe that the kind of linear-integrative discussion of new venture creation we've introduced here, and the empirical insights gained in the process, will help strengthen and advance the research on Nascent Entrepreneurship. The value of understanding these interrelationships will not only enrich our theoretical understanding of the determinants of success in business launching but also has significant implications for practice in Nascent Entrepreneurship. We argue that entrepreneurial intelligence is attained from different forms of interactions and dynamics, and therefore it is crucial to explore Nascent Entrepreneurship – in respect of the interplay among start-up capital's attributes as well as the dynamics of the new venture creation process that aid us in making better sense of what factors drive the creation of new ventures. This notion drives us to explore new venture creation dynamics and test relationships with resource endowments and success. This study serves the ongoing empirical and theoretical efforts, which together aim to understand the effect of resource heterogeneity on entrepreneurship outcomes. However, there is as yet no academic consensus on the assumptions underlying the heterogeneity of nascent entrepreneurs, and existing theories continue to explore their impact on entrepreneurialism. Therefore, scholars must understand the lens through which to view nascent entrepreneurs and entrepreneurialism (Alvarez and Barney, 2007).

1.2 Problem Definition (Gaps)

Studies have been conducted to determine the effect of start-up capital's attributes on new venture performance, survival and growth with conflicting findings (Cavarretta and Furr, 2011). Similarly, other studies have been carried out to explore the impact of start-up capital's attributes on entrepreneurs' intentions and selection in their entrepreneurship. However, so far, only a limited number of studies have questioned the assumptions and limitations that arise from the isolated forms of start-up capital. In the context of Nascent Entrepreneurship, few studies have examined

the founding process considering the pervasiveness of reciprocal effects amongst different forms of resources. Indeed, each form of capital plays a distinct and vital role in entrepreneurial success. However, earlier research has paid limited attention to the differences between human, social and cognitive capitals in predicting entrepreneurial success. The traditional conception of entrepreneurial capital as relatively static capital held by entrepreneurs, amenable to linear measurement, appears to lead to erroneous conclusions about their value. The model proposed herein suggests that it is only through the integrative and recursive modelling that value from that entrepreneurial capital can be realized. It is worth noting that over the last decades, a large body of theoretical and empirical work on Nascent Entrepreneurship and its scientific approaches has utilised diverse concepts from a wide range of disciplines to investigate founders' personal and situational traits and their impact on firm survival, performance and future sustainability (Rocha and Birkinshaw, 2007; Audretsch et al., 2016).

Entrepreneurship research still lacks harmony with modern economic theory, and neoclassical economists continue to face challenges in synchronising rational models of decision-making with entrepreneurship research attributes (Moroz and Hindle, 2012). Scholarly efforts have focused on the general characteristics and the endowed resources of entrepreneurs to gain a better understanding of why some entrepreneurs are more successful than others (Evans and Jovanoivc 1989; Blanchflower and Meyer 1994). Yet this approach suffered from methodological shortcomings and the absence of multimodality that address the diverse nature of the entrepreneurial process, the business environment, the underlying drivers and the differences that arise between nascent entrepreneurs. Additionally, explaining the underlying reasons for the success versus the failure of nascent ventures remains limited and inconsistent for different reasons. For example, a broad range of studies has been conducted exploring the impact of financial capital on the creation of new ventures (Carter and Rosa, 1998; Marlow and Patton, 2005; Roper, 2009). Still, the assumption of being involved in a new pursuit with static material resources, whether physical, monetary or immaterial, makes research into new venture creation suspect.

Along these lines, it ought to be stated that the founding of new ventures is an unpredictable process, including a mix of different resources, actions and paths. Therefore, in recent decades, researchers have acknowledged the material influence of the pre-incorporation stage, driven by non-monetary measures. This has resulted in a focal shift towards influential factors that reside within intellectual, psychological and social systems (Davidsson and Honig, 2003; Reynolds et al.,

2003). Schenkel et al. (2012, p. 11) argued that 'entrepreneurs are not a cohesive group…' by realising the role of different types of entrepreneurial capital and their integrative nature in different contexts and circumstances. According to Hormiga et al. (2010), authors in different decades (e.g. Miles et al., 1998; Cole, 1998; Stewart, 1998; Ventura, 1998; Ordonez de Pablos, 1999; Hansen et al., 1999; Becker et al., 2001; Lev, 2001; Kannan and Aulbur, 2004; Augier and Teece, 2005) continue to highlight the decisive advantages of intellectual capital in the context of new venture success in comparison with material assets. However, acquired resources and the interplay between those resources are relatively overlooked despite the assertion of their necessity for new ventures to emerge (Lichtenstein and Brush, 2001), acting as possible drivers for new venture creation outcome. Obviously, the gap in the knowledge of the stated interplay among resource endowments, and the dominant focus on measuring the contribution of traditional resources in isolation from the psychological and dynamic perspective limits theoretical and empirical contributions, and in turn, curtails our understanding of start-up markers in terms of success and failure.

Consistent with the concept of recursive knowledge–action relationship, the aim of this research is to focus on the ways in which different forms of capital and dynamics interact to produce utility and attain capability to draw distinctions in the process of creating new ventures. Indeed, the endowment of resources is particularly crucial in the start-up process of nascent ventures (Gabbay and Leenders, 1999). So, as nascent entrepreneurs possess some of these resources themselves, they often combine them by accessing other forms of capital (Aldrich and Zimmer, 1986; Aldrich et al., 1991; Cooper et al., 1995). However, as mentioned earlier, a considerable gap exists in the literature on how the start-up capital's attributes of entrepreneurs interact among themselves to generate the knowledge required for the successful formation of new ventures (Santarelli and Tran, 2012).

The literature on the interplay of start-up capital's attributes as drivers of successful Nascent Entrepreneurship is still scant. Extant research has investigated the effects of start-up capital's attributes (human, social and cognitive capitals) on entrepreneurial success, focusing on their main (Linear) effects rather than their combination (De Carlos et al*.,* 2009). The main disadvantage of linear approaches is that they provide an imprecise and incomplete understanding of business founding. They address the issue of the resources (antecedents) of business formation but offer only limited insights into how these antecedents interact with process dynamics and among themselves to attain outcomes, concluding the process of business formation. Linear capital

models appear to have inherent limitations that prevent them from differentiating between the underlying reasons for either the success or failure of a new venture.

Apparently, this conceptualisation resembles an isolated perspective that looks at each dimension of new venture creation independently or through discrete sequential analysis (i.e. Haynie and Godesiabois, 2007). Both approaches prevent academics from developing a 'holistic gestalt' understanding of new venture creation (Shane, 2003). Therefore, while no studies have doubted the importance of resource endowments in their linear forms, models that have only considered the linear impact of resource attributes on the outcomes of new venture are theoretically and empirically deficient. According to Klyver et al. (2013), 'the interactive nature of such influence remains less well understood… and causality remains elusive', and therefore it is often argued that the gestalt of the new venture creation concept remains unclear'. Therefore, the collective thinking embedded in the integrative-dynamic perspective embodies complementarities and substitutable aspects that in effect can be the gestalt. This gestalt approach suggests that the exploration of different actors across different dimensions could enable us to understand the evolution of nascent ventures as a process rather than as a series of discrete events. The combined approach may be instrumental in terms of aiding nascent entrepreneurs to form creative and tactical actions, address any obstacles in the early stages of their new business and ultimately attain entrepreneurial capacity that distinguishes their propensity for attaining success.

There is by all accounts general consensus on the significance of the creation of new ventures yet little consensus regarding the components that distinguish fruitful endeavours from unsuccessful ones (Hormiga et al., 2010). It appears that while the impact of Nascent Entrepreneurship on economic development is clear, the factors that foster the pursuit of entrepreneurial opportunity and the attainment of success remain contradictory and limited (De Carlos et al., 2009). This suggests a need to reexamine our primary methods of theorizing to more properly take into account integrative and dynamic approaches. We argue that because theory and empirics have tended to focus more on linear effects, the outcomes attained in Nascent Entrepreneurship research have often been inconsistent. Given the lack of consistency with regard to the impact of different resources on the outcomes of new venture creation process, it is not clear whether the existence of such resources has a net negative or positive effect on average. An interesting alternative approach is to theorize that the interplay among those resources and their interaction with process dynamics is what matters the most at nascent stage of business venturing. Therefore, the proposed conceptual model in this study highlights the intertwined, and interrelated nature of nascent

entrepreneurial capital by drawing attention to the interplay between cognitive, human, social capital and their interactions with process dynamics.

The integrative-dynamic perspective may increases the divergence of resources in a way that creates new and unique paths that aid nascent entrepreneurs to respond to the novel and emerging circumstances of new venture creation process. This in return distinguishes their abilities in attaining outcomes. The central argument here is that access to and acquisition of start-up capital in terms of social, cognitive and human attributes is crucial and may meet one set of needs. However, success in Nascent Entrepreneurship at different stages of development must be achieved through the building of an integrative-dynamic capacity to effectively use that capital and manage the emerging conditions of the new venture creation process. This agrees with the emerging theory which suggest that nascent entrepreneurs who make more effective use of start-up capital's attributes by understanding the optimum set of combinations and involved dynamics may be more successful in bringing nascent venture to operational stage (Baluku et al., 2016). This in turn suggests that the relationship between start-up capital's attributes and new venture creation outcome may be more complex than has been commonly conceptualized and has important implications for the outcomes achieved by the nascent venture.

As we explored the theoretical and empirical research on new venture creation, we found that three streams of thought existed in the facilitation of new venture emergence. The first focused on the role of human capital, the second focused on the role played by social capital, and the third on the impact of cognition, but these streams have not been represented in the comprehensive models of entrepreneurial success. What was missing is the possible connection among those streams. In order to fill the stated gap, researchers should explain these gaps by establishing a comprehensive understanding of the interdependencies among human, social and cognitive capital's attributes and related process dynamics. Nascent entrepreneurs act as active agents in socio-economic activities who strive to access capital, convert and combine resources in order to bridge market gaps and reach their business potential. Along this line of reasoning, Klyver et al. (2013) argued that understanding nascent entrepreneurs' business-venturing decisions is highly sensitive to not only the 'access' or 'availability' of resources but more importantly to how these resources are combined and exploited in a variety of circumstances. Ultimately, this should enhance our hypothetical understanding of how nascent entrepreneurs' integrated actions are formulated in the light of evolving entrepreneurialism and related dynamics. Therefore, shedding light on the gap among human, social, cognitive and dynamic factors together can steer the effect of different types

of capital that entrepreneurs possess in a way that reduces or increases their ambiguity and perception of the circumstances surrounding their new venture, and hence lead to informed or otherwise ill-informed founding decision-making (Dagiliene et al., 2006; Baluku et al., 2016). This appears logical, as nascent entrepreneurs seem to deal with different tasks, complex conditions, unpredictable situations, and emerging dynamics, and therefore balanced knowledge driven by new combinations, dynamics and different reconfigurations for endowed resources become instrumental in attaining success.

This is a virtually unexplored connection that potentially explains why nascent entrepreneurs' resources and endowments in different forms are associated inconsistently and not universally with the launching of new ventures. The study takes a more comprehensive and distinct approach by assessing the degree to which the human, social and cognitive capital of nascent entrepreneurs contribute to the outcomes of the new venture creation process by contrasting their linear and the integrated effects. No previous studies have jointly assessed these three types of start-up capital resources or considered differences in their relative effect on the pre-startup phase of entrepreneurship from the integrative-dynamic perspective. Here the argument is based on the perspective that it is not only what nascent entrepreneurs are or what they possess in terms of resources but rather how they combine resources and how such resources interact with process dynamics to create an entrepreneurial ability to approach the business lunching process (Katz and Gartner, 1988; Shane and Delmar, 2004; Reynolds, 2007b). Indeed, understanding how 'fit' arises between different forms of start-up capital and their interactions with dynamic terms is key to comprehending trends in new venture emergence.

This integrated knowledge driven by new combinations, dynamics and different reconfigurations for endowed resources becomes instrumental in attaining success. The key argument here that start-up capital's attributes should exhibit stronger effects through their interdependencies as well as the extended interactions with the process dynamics in predicting successful ventures from those that were aborted. Therefore, before we try to make sense of the start-up capital's attributes linear effects, it may be useful to consider their integrated-dynamic effects on outcomes, which can help interpretation of the main effects produced within the linear modelling. Therefore, the present thesis seeks to contribute primarily to the literature on the Nascent Entrepreneurship integrated-dynamic perspective which, to date, has mainly focused on the alternative ways to look at interaction effects across the three different types of entrepreneurial characteristics and business dynamics in isolation from each other. The significance of this study lies in integrating the startup

capital's attributes and related process dynamics in a model of the determinants of success in Nascent Entrepreneurship. This provides strong evidence for the connection from resources to process dynamics and ultimately to business lunching outcomes.

In addition, prior research reported also attempts to investigate the interplay among start-up resources, however these attempts had special focus on human and social resource endowments. Research has shown that entrepreneurs interact with a variety of factors when founding new ventures (Brush et al., 2004) that appear to interfere with the human and social intelligence. These factors include other forms of capital (i.e. mental structures (cognitions) and founding dynamics (actions and changes)) that aid them in dealing with the complexity and emerging nature of business launching process. Entrepreneurs must face complex choices once engaged in the nascent entrepreneurial process, and the complexity involved, in terms of founding dynamics and cognitions, for example, can aid or prevent enterprising individuals from evaluating their choices in a rational and objective way.

Indeed, entrepreneurial cognition and dynamics processes have become a widely used concept in entrepreneurship research. However, the presence of these factors appears to be overlooked in the entrepreneurship capital theorisation. Emerging entrepreneurship concepts have not observed the cognitive and process dynamic interaction/moderating effects on the relationship between start-up resources and the outcome of the new venture creation process. In effect, preferences for specific entrepreneurial cognitions and dynamic actions in relation to other forms of capital (i.e. HC, SC) might enhance or otherwise hinder nascent entrepreneurs' enterprising ability to mobilise resources and make well informed decisions at the nascent stage, and in turn might make nascent entrepreneurs more vulnerable to adopting narrower or wider decision frames that impact their entrepreneurial judgment level and receptivity to learning during the business venturing experience (Mitchell et al., 2004; De Carolis and Saparito, 2006). In this line of thinking, we postulate that nascent entrepreneurial capital in terms of human and social capital is unlikely to be universally evident.

Therefore, their presence, magnitude, significance and consequences will depend on the nature and strength of their interactions with the cognitive capital endowed by the business founders and the process dynamics encountered during the founding process. The proposed model includes an empirical examination of the moderation of the interrelationships between start-up capitals' attributes and the outcomes of new venture creation process by the use cognitions and process dynamic factors. While most research is likely to focus on specific relationships and their direct

effects on nascent entrepreneurial outcomes (such as the relationship between human/or social capital and process outcomes), a more comprehensive examination of the model proposed herein is required.

Indeed, exploring the distinct and vital role that process dynamics and cognitive capital play in moderating the relationship between the start-up capital's attributes and outcomes may reveal how nascent entrepreneurs utilize resources and how they handle business gestation matters to attain significant outcomes in the process of business founding. This is a gap in the existing knowledge base. Gaps remain in the literature in terms of analysing the conclusiveness of these indicators and their interrelations. In fact, not only is the examination of the integrative effects among resource attributes on the probability of founding a new venture limited, but more importantly, the moderating effect imposed by the process dynamics and cognitive aspects of the relationship between the resource endowments and the outcome of the new venture creation process is non-existent. This is a novel contribution that should inform our understanding of how nascent entrepreneurs with comparable base of knowledge and social resources could associate with varying entrepreneurial ability.

Therefore, this study attempts to explain the contradictory findings in the literature and produce evidence that considers the linear and integrated effects of these indicators by capitalising on the dynamic and the cognitive perspectives. These perspectives should help us to better explore shifts in behaviours and ways of mobilising different capital's attributes. The interdependencies among start-up capital's attributes and process dynamics allow us to shed light on the underlying factors that explain why entrepreneurs frame different views of their entrepreneurial experience, and how they follow different entrepreneurial paths even if they are endowed with a similar base of knowledge. This will establish new insights with critical and systematic links that explain the reciprocal and dynamic issues that unfold when launching a new business, revealing the complex nature of the process.

For all of these reasons, the present study was designed to seek answers to these gaps and to reveal what factors and combinations influence the success or failure of nascent ventures in the new enterprise creation phenomenon. The present study represents a contribution to the Nascent Entrepreneurship literature by testing an integrated model of nascent entrepreneurial capital that includes process dynamics and cognitions in addition to the more frequently assessed human and social capitals.

1.3 Aim and Objectives

Building upon extant theoretical work and the availability of Panel Study of Entrepreneurial Dynamics (PSED) data, our analysis aims to develop and test a coherent conceptual proposition that explores the relative and integrative importance of human, social and cognitive capitals in the Nascent Entrepreneurship process. In view of this general aim, the research in the thesis has the following four milestone objectives:

- To perform a detailed survey of the literature on Nascent Entrepreneurship providing in a critical review of the factors affecting the success or failure of the process of new venture creation by exploring the linear and integrative aspects of resource endowments and related process dynamics.

- To propose an encompassing model of the factors influencing the Nascent Entrepreneurship process that allows for observing and assessing the linear and integrated effects of nascent entrepreneurs' attributes (i.e. forms of human, social, and cognitive capital) on the outcomes of the new venture creation process, and developing an understanding of how the moderating effect of cognitive capital and process dynamics affects the relationship between start-up entrepreneurs' attributes (forms of capital) and outcomes in new venture creation processes.

- To develop a suitable methodology for longitudinal data analysis to examine the factors influencing the outcomes of the new venture creation process and test the predictions of the model regarding the impact of nascent entrepreneurs' types of attributes/capital on the founding success for nascent ventures, on the basis of a conceptual framework incorporating both the resources of the founder and the dynamics of the founding process.

- To identify the factors and dynamics of nascent entrepreneurial capital that are critical to the success of nascent ventures within our research design based on – **i)** the linear modelling of human, social and cognitive-based capital in isolation from other factors, **ii)** the interplay between [human, social and cognitive-based capital] and [founding process dynamics], **iii)** and finally the interplay of human, social and cognitive capitals among themselves, thus contributing to the body of knowledge regarding nascent entrepreneurship, entrepreneurial attributes, human and social capital, and cognition.

1.4 Research Questions

The research questions to be addressed are the following:

- Which nascent entrepreneurs' attributes (defined as forms of human, social, and cognitive capital) affect the probability of nascent ventures succeeding (i.e. reaching the start-up phase)?
- Which factors act as moderators of the relationship between nascent entrepreneurs' (or start-up capitals') attributes (human, social and cognitive) and the outcomes of the new venture creation process (success/failure of business launching)?
- Is an integrative model that embodies different interactions - [the individual effects of each type of nascent entrepreneurial capital X the process dynamics]; [the individual effects of each type of nascent entrepreneurial capital X cognitive capital]; [the interplay between the individual effects of social and human capital endowments], yields higher predictability than the linear models that constitute nascent entrepreneurial capital?

1.5 Research Methodology and Contribution

This study adopts quantitative methods to investigate the area of inquiry. To inform the study's philosophical stance, the research strategy follows a deductive approach to test the hypothetical framework by quantifying and analysising secondary empirical data.

The methodological stand taken in this study is based on the approach of background theory, focal theory and data theory as well as novel contributions (Phillips and Pugh, 1994). The literature on Nascent Entrepreneurship was reviewed and analysed with an eye to the key issues and knowledge gaps. Existing perspectives and paradigms related to the attributes affecting Nascent Entrepreneurship were assessed, and linear and integrative models were used to gain insights on the underlying causes of success and failure at the early stage of business venturing (pre-startup). A deductive approach was adopted to develop and test the theoretical propositions, to guide the empirical efforts.

Quantitative methods are applied by analysing quantitative secondary longitudinal data based on the US Panel Study of Entrepreneurial Dynamics (PSED-I). PSED was established at a multi-national level by a consortium of researchers led by Paul Reynolds in 1997 to underpin a

scholastic project consisting of nascent entrepreneurs' panel data designed to overcome the limitations cited in Carter et al. (1996). The constructed data set offers reliable secondary data that research can deploy utilising selected methods, overcoming earlier methodological limitations. The first version of the PSED data set was built on the basis of judgemental evaluations, while the second version of PSED was based on selected criteria. The secondary data originating from PSED-I were used to test and validate our theoretical propositions as justified in chapter 4.

The novel contribution made by the present study encourages further theoretical development of Nascent Entrepreneurship and the reproductions of the empirical approach taken by this study. A contribution of this study is the theoretical development in advancing understanding of entrepreneurial capital and its implications for Nascent Entrepreneurship. This suggests that nascent entrepreneurs will benefit by recognizing the complex relationship between nascent entrepreneurial capital (start-up capital's attributes) - process dynamics and the outcomes of new venture creation process. This research contributes to the literature on Nascent Entrepreneurship by being the first work to explore utilisation and integration among start-up capital's attributes. Therefore, the present study stresses the importance of assessing the integrative framework by providing an empirical content that nurtures our understanding of the factors and combinations needed for the attainment of success in the context of new venture creation. This goes far beyond the assessment of the dispositions that appear to be conceived as 'stable across time, context and situation' (Hmieleski et al., 2015, p.306), and therefore, we examined intangible resources that vary in their relevance and influence as they interact with entrepreneurism (Baron et al., 2012).

The integrative-dynamic approach exemplified here is a new perspective that could lead to identification of important insights that can help in interventions aimed at enhancing the rate of nascent entrepreneurial success among micro-entrepreneurs. The present study opens new directions for theorizing on the integrative-dynamic perspective, and more specifically on the moderating effects of cognitive capital and process dynamics. The moderating effect of cognitive capital and process dynamics on the relationship between other start-up capital's attributes and the outcome of new venture creation process have been overlooked thus far in the entrepreneurship literature, and therefore, we seek to draw further theoretical connections between the fields of entrepreneurship and organisational emergence, by assessing how the integrative-dynamic nature of resource endowments could improve theory as well as formalize practitioner intuitions regarding the contradictory impacts of resources in isolation as a predictor of new venture creation outcome.

1.6 Thesis Outline

This thesis is organised into seven chapters. The following Chapter (2) provides background on the field of Nascent Entrepreneurship and offers an overview of the theories and related definitions of entrepreneurial resource endowments and their role in determining the outcome of the process of new venture creation. The discussion seeks to identify gaps in the existing body of knowledge by examining the underlying factors of success in creating new ventures with a focus on the roles of human, social and cognitive capitals.

Based on the gaps identified in the existing literature, Chapter 3 outlines the conceptual framework that delivers the deductive basis for this study. The selection of variables influencing new venture creation success is discussed in this chapter. The proposed framework maps the selected factors and their links. The operationalisation of variables involves a detailed discussion of the core factors and the formulation of hypotheses, which provide the basis for the quantitative analysis presented in Chapters 5 and 6.

Chapter 4 presents the empirical approach, strategy and design. Chapter 5 describes the primary findings of the analysis carried out on the secondary data accessed through PSED-I for nascent ventures based in the US.

Chapter 6 extends the analysis carried out on chapter 5 and forms the basis for explaining the complex nature of Nascent Entrepreneurship and the interrelated links between human, social, and cognitive capital of nascent entrepreneurs. This chapter presents the regression analysis findings and discusses the results from testing the hypothesised relationships among the factors proposed in the conceptual framework presented in Chapter 3. It briefly discusses the linear effects of start-up capital attributes and extends the discussion to the proposed integrative-dynamic approach. The last chapter of the thesis summarises the study and presents the conclusions and contributions in light of the research questions and objectives. It also stresses the limitations of the research, implications for theory and practice, and discusses the thesis' contribution to the literature and future directions for research.

Chapter 2: Literature Review

2.1 Introduction

This chapter reviews the theoretical and empirical undertakings in the literature of Nascent Entrepreneurship. The review aims to gauge the existing state of knowledge regarding the factors influencing nascent entrepreneurs' capacity to found new ventures. The literature review follows an eclectic approach to entrepreneurship, examining theories originating from a variety of fields of knowledge. If focuses on the Nascent Entrepreneurship (NE) phenomenon and, in particular, on what makes some nascent entrepreneurs more successful than others (Johnson et al., 2006), by elucidating the effects of different types of attributes of nascent entrepreneurs (human capital, social capital, and cognition).

New venture creation is recognised today as a distinct scholarly endeavor (Busenitz et al., 2003) despite being based on an arguably fragmented body of knowledge, lacking unified theories (Busenitz et al., 2003) and distinctiveness (Venkataraman et al., 2012), due to its multi-disciplinary nature (Kirzner, 1997; Aldrich, 1999; Ireland, Hitt, and Sirmon, 2003; Baron, 2013; Hmieleski et al., 2015). Studies of Nascent Entrepreneurship (NE) tend to vary markedly on their conceptualisation of success. As remarked by Koppl and Minniti's (2010), 'we are getting more pieces of the puzzle but no picture is emerging'.

Entrepreneurship scholars have described new venture creation as a complex and aspirational phenomenon, emphasising that the heterogeneity of approaches to entrepreneurship research has led sometimes to counterintuitive conclusions (Chandler and Lyon, 2001) that are paradoxical and elusive in nature (Audretsch et al., 2016). According to Aidins' (2015, p. 102), 'proposing a universal model for new venture creation is not easy, and some scholars believe that it is not promising or reasonable'. Apparently, there is no recipe for entrepreneurial success. The start-up process is fraught with contingencies, individual variations; path dependencies that often change regularly. In response to this fragmentation, some scholars have suggested that the discipline adopt a narrower focus in theories and models (MacMillan and Katz, 1992), focusing on unique and specific entrepreneurial behaviours, rather than adopting notions anchored in other disciplines. By contrast, Audretsch et al. (2016) reject the call for narrowing down the views and foci of new venture creation and advocated the attainment of a broad frame of thinking that acts as a reference for exploring the spread of conflicting contexts, definitions and concepts.

The lack of unified theoretical and empirical underpinnings means that the boundaries of the Nascent Entrepreneurship concept are not adequately defined, resulting in a mismatch between what a nascent entrepreneur 'is like' and what she or he 'does' (Koppl and Minniti, 2010). Moroz and Hindle (2012) identified four types of entrepreneurial process models: static frameworks, reflecting a holistic view of the process; stage models, presenting the sequential process; dynamic models, dealing with the effects of the process on a variety of outcomes; and quantification sequence models, explaining the historical sequence of events. The critical elements, proceedings, actions and stages of the models express nuances, fragility, diversities, and lack of synergy in terms of design, scope and measures. The complexity of the new venture process is a product of differences among enterprising individuals in terms of endowed resources, management styles, and the related ecological aspects. These differences induce limits on reaching a universal logical sequence in our understanding of business founding (Vesper 1990; Parker, 2006; Haugh, 2007; Dimov, 2010; Brush et al., 2014).

Gartner (1985) introduced an eclectic view of the entrepreneurial process seeking to combine perspectives originating from different bodies of knowledge (e.g. Economics, Psychology, and Organizational Theory) and reconcile the conflicting meanings of entrepreneurship prevalent in the scholarly literature. Koppl and Minniti (2010) argue that the eclectic approach is the way by which researchers can attain the necessary capacity to investigate and extend the knowledge base of entrepreneurship in order to provide a compelling basis for advancing the theories and empirical examination of new venture creation. This "combinatorial" or eclectic view extends the boundaries of entrepreneurship theory (Wiklund and Shepherd, 2011) and is adopted in the present thesis in general, and in this review in particular.

2.2 What Is Nascent Entrepreneurship?

2.2.1 Nascent Entrepreneurship in the Context of Entrepreneurship Research

Despite incremental developments in terms of theory and methods, research on Nascent Entrepreneurship remains a somewhat underdeveloped strand of research (Davidsson, 2006), as no consensus has been reached among entrepreneurship scholars when it comes to how new ventures come into existence (Davidsson and Honig 2003; Arenius and Minniti, 2005). The questions 'what happens to nascent entrepreneurs?' and 'where do new businesses come from?' (Rumelt, 1987) remain open (Rasmussen et al., 2011). This is in part because in previous decades entrepreneurship research explored what differentiates nascent entrepreneurs from the rest of the population with

perhaps an overstated focus on psychological factors, such as the entrepreneurial trait approach (Reynolds, 1997; Delmar and Davidsson, 2000; Reynolds et al., 2004; Parker and Belghitar, 2006).

The identification of psychological traits in entrepreneurs and managers was mainly utilised to analyse the aspirations underlying individuals' pursuit of entrepreneurship (Carter et al., 2003) and 'what made them successful in the business world' (Hindle and Klyver, 2011, p. 22). Meanwhile, work towards understanding the early steps and minimum requirements for establishing successful ventures was relatively minimal (Carland and Carland, 2000; Diochon et al., 2008). Research into this stream shows that business emergence is likely to vary substantially in patterns and dynamics (Carter et al., 1996; Brush et al., 2008). The heterogeneity in the process of business founding was evident in a study conducted in 1992 by Reynolds and Miller of 3000 American new ventures that showed significant differences in the patterns and length of business gestation. This concurs with Brush et al.'s (2008, p. 548) statement that 'organising a new venture is not a patterned or linear process but rather is simultaneous, messy and iterative'.

Diochon and Menzies (2008, p. 152) argued that '[k]nowing who will try to start the business is of limited value unless we also know if they will succeed in their efforts'. Researchers have conducted substantial empirical evidence to ascertain the determinants of successful entrepreneurship regarding different measures of performance – in particular growth and survival outcomes – but only a limited number of studies have dealt with the founding success of nascent businesses at the pre-startup phase (Peake and Marshalls, 2006; Kessler and Franks, 2009; Brixy and Hessels, 2010). Reynolds and Miller (1992), Reynolds (1997), and Peake and Marshalls (2006) attributed the lack of empirical studies to the fact that generating representative samples of registered nascent ventures is difficult and costly as compared to established businesses. This lack of data has limited the ability of researchers to address questions about what constitutes successful Nascent Entrepreneurship (Van Gelderen et al, 2006).

In 1990s, researchers of new business formation attempted to identify or generate representative samples of nascent ventures to enable the observation of evolving gestating efforts (Davidsson, 2006). The first initiative in studying Nascent Entrepreneurship and its emerging patterns from an empirical lens was by Reynolds and Miller (1992), followed by Gatewood et al. (1995) who confirmed the positive connection between engagement in gestation activities and the successful formation of new ventures.

The rising appeal of Nascent Entrepreneurship led to the development of new data sets and

methods addressing the gestation of entrepreneurial efforts and the people who carry out such efforts. Two commonly used data sets in Nascent Entrepreneurship emerged, namely:

- The pioneering project of the US longitudinal Panel Study of Entrepreneurial Dynamics (PSED) launched in 1997 (i.e. Reynolds, 2000, 2007; Shaver et al., 2001; Reynolds et al., 2004; Gartner et al., 2004); and
- The Global Entrepreneurship Monitor (GEM), a cross-sectional data set (i.e. Reynolds et al., 2004) that launched in 1999 and focuses specifically on the comparable characteristics of Nascent Entrepreneurship and rates of entrepreneurialism across different nations (Kessler et al., 2012).

The longitudinal approach for data collection, viz. the Panel Study of Entrepreneurial Dynamics (PSED), provided a comprehensive dataset of ongoing business start-up efforts. It described the key attributes of the gestation efforts at individual, firm and process levels. This comprehensive dataset eliminated memory and survival biases (Gartner et al., 2004) that could distort interpretations of the entrepreneurial process during the gestation period. These biases may emerge based on information recalled from irrelevant or obsolete stages, or information interpreted based on facts and consequences associated with post start-up events. Therefore, and despite the 'panel mortality' effect (Brixy and Hessels, 2010), the longitudinal approach aids entrepreneurship researchers in gaining dynamic insights into new venture creation issues and the determinants of founding success (Davidsson, 2006).

2.2.2 Nascent Entrepreneurship: Definition

Academic research arguably still lacks a consensus about the collective meanings and definitions of "entrepreneurship" (Gartner, 1990; Davidsson, 2003, Kuratko, 2016, Packard, 2017). According to Tuluce and Yurtkur (2015, p. 723) 'the lack of a single definition is partly due to the differentiated traditions within the field of entrepreneurship research'. Within the wider field of entrepreneurship, Nascent Entrepreneurship is also a heterogeneous phenomenon (Gordon, 2012) that has fostered a multitude of definitions (Davidsson et al., 2001; Hisrich et al., 2005; Audretsch et al., 2016). Audretsch et al. (2016) attributed the elusiveness of a definition for Nascent Entrepreneurship to the existing multitude of perspectives and variety of levels of analysis, emphasising entrepreneurship's many facets that give rise to large numbers of diverse definitions of its nascent stage.

The last two decades have witnessed the development of new literature that focused on the characteristics, activities and performance of nascent entrepreneurs. According to Belghitar and Paker's (2006, p.81) observation, 'the growing interest in nascent entrepreneurship partly reflects deep rooted interest in venture creation, which has no doubt been spurred by the emergence of new data set dedicated for nascent entrepreneurship'. A clear definition of entrepreneurship in general can be found in the theoretical work of Shane (2000), who stated, "Entrepreneurship is an activity that involves the discovery, evaluation and exploitation of opportunities to introduce new goods and services, ways of organizing, markets, processes, and raw materials through organizing efforts that previously had not existed" (p. 4). The formation of a new business thereby is a process that refers to different stages (Reynolds and White, 1997; Reynolds, 2000; Carter et al., 2004; Gartner et al., 2004a): conception, gestation, infancy and adolescence. This study deals with the first two stages that ultimately result in the birth of a new startup, which can progress to different forms of success, persistence, or discontinuation (Gartner, 2004).

The first transition starts when individual (or founding team) turns the conceptualised opportunity into a series of explicit actions to start a new venture (gestation process), and the second transition starts when the founding process is complete and the new firm either comes into existence as an operating business, or when the main actors (nascent entrepreneurs) quit their founding initiative (Reynolds and White, 1997; Aldrich, 1999; Reynolds, 2000; Shaver et al., 2001; Gartner and Carter, 2003; Gartner et al., 2004; Reynolds et al., 2004a). Nascent entrepreneurship therefore, refers to the early stage of conception and formation, with individual (or founding team) being "actively involved in setting up a business they will own or co-own" (Singer et al., 2015, p. 24). If this process takes place within an organisational context, individuals who are engaged in the founding process will be considered to be 'nascent intrepreneurs', which is beyond the scope of this dissertation.

Currently, the term 'Nascent Entrepreneurship' is used with varying degrees of metaphorical connotation relating to gestation (Reynolds and Miller, 1992), firm emergence and organisation in vitro (Gartner et. al., 1992; Kessler et al., 2012), the creation of new ventures (Low and MacMillan, 1988), business launching, organisational emergence, founding efforts, start-up process (Reynolds and White, 1992; Carter et al., 1996; Kessler and Franks, 2009), and the active pursuit of new venture creation (Van Gelderen et al., 2006). These terms are often used interchangeably (Kessler et al., 2012).

According to Gartner (1985), '[n]ew venture creation is the organising of new organisations […]

and to organise is to assemble ongoing interdependent actions into sensible sequences that generate sensible outcomes' (Weick, 1979, cited in Gartner, 1985, p.697). Research on Nascent Entrepreneurship focuses on a series of organisational activities leading to new business creation, coordinated and managed by setting procedures, developing structures, combining resources, designing work methodologies, and establishing social interactions (Gartner, 1985; Gordon, 2012). The characteristics of nascent ventures can then be seen as an outcome of collective capacities and experiences that lead founders to follow diverse paths in their venturing experience. Gartner (1985) sustains that research on emerging new businesses should emphasise the role played by the new venture founder's expertise and knowledge, and further stresses the notion that founders create entities that in reality interact with a set of dynamics that get realised over time in response to the recursive nature of the process. Gartner's perspective portrays the emergence of new businesses in the context of the environment where founders strive to obtain resources, build legitimacy, and create boundaries that enable the new venture to compete (Gartner, 1985).

In essence, the term "nascent venture" is used in the more abstract form, referring to the organising effort of individuals to found commercially new business, to account for the phases in venture emergence where the venture is not yet a legal entity (Eckhardt et al., 2006). While it is necessary to make a distinction between opportunity conception (discovery) and opportunity exploitation (effectual actions) (Sarasvathy, 2001), other researchers assume that the term "Nascent Entrepreneurship" only appeals to the early intents of founding a new venture coming from a conceptual opportunity (idea) (Shane and Venkataraman, 2000; Dimov, 2010).

However, this distinction does not allow for differentiating the experience curve of entrepreneurship. Therefore, it is also important to differentiate the experience curve of entrepreneurship across different types of nascent entrepreneurs as founding and managing a business may give better access to information, competencies, experience, relevant know-how, entrepreneurial learning, accumulated resources, networks and knowledge. This becomes the basis of success at recognising and developing opportunities as they develop a methodology for entrepreneurship (MacMillan, 1986; McGrath and PvfacMillan, 2000); and then this becomes central to the possibility of success of a nascent venture.

In the literature, the entrepreneurs were classified as nascent, novice and habitual (Westhead and Wright 1998, Baluku et al. 2016), mainly on the basis of their entrepreneurial experience levels. Research appears to suggest that experienced entrepreneurs may have advantage over

inexperienced novice entrepreneurs when it comes to founding a new venture as they become more able to access knowledge and resources accrue from experimental learning and prior ventures that might be drawn upon in the process of founding a new venture (Scott and Rosa, 1996, Olsos and Kolvereid, 1998). While this assumption is intuitively appealing, to date there is limited empirical support for such a relationship. One justification may be that prior researches have not controlled for potential variations in new venture ideas. Another explanation may be that many previous researches have failed to account for the heterogeneity among experienced entrepreneurs (founders).

There is also an implicit debate in the literature regarding weather 'nascent entrepreneurs' should be defined as individuals who undertake activities to create a new venture with no prior start-up / ownership experience. In this sense, the term "Nascent Entrepreneurship" associates with individuals who are new to the game of entrepreneurship (first time new entrepreneurs). Nascent entrepreneurs are in essence prospecting entrepreneurs, while novice entrepreneurs are those who created, acquired or inherited ventures with no prior experience of founding or owning a venture (Webster 1977; Rosa and Scott, 1999; Balunywa 2009; Baluku et al. 2016). In comparison, habitual entrepreneurs have prior experience of founding or owning a venture (Balunywa 2009; Baluku et al. 2016). Habitual entrepreneurs can be either serial or portfolio: serial entrepreneurs have managed or owned several businesses, entrepreneurs are entrepreneurs who have owner-management experience from more than one business, but only one at a time, while portfolio entrepreneurs own and manage several businesses at the same time (Westhead and Wright 1998b; Rosa and Scott, 1999; Balunywa 2009; Baluku et al. 2016).

Nascent entrepreneurs of this study are the founders of small-scale nascent ventures, who are in the process of beginning their entrepreneurial venture with the potential to become successful entrepreneur. Nascent entrepreneurs of this study are not new to the game of entrepreneurship due to their prior founding/ownership experience. However, we cannot assume that they are competent entrepreneurs as they may still have limited experience and/or limited practical understanding of the concepts and process involved.

The present thesis adopts the approach used by the scholars who built the Panel Study of Entrepreneurial Dynamics (PSED) (Reynolds, 2000; Shaver et al., 2001; Gartner and Carter, 2003, Gartner et al., 2004; Reynolds et al., 2004a). In the context of the PSED, new venture creation involves independent nascent entrepreneurs exploiting entrepreneurial opportunities by combining resources, and carrying on gestation activities at the early stage of their emergence. The pre-startup

stage ends as firms succeed in transitioning from gestation to new firm status. We take Nascent Entrepreneurship to mean the attainment of outcomes through the creation of new combinations of resources (antecedents) and processes (dynamics) (Gartner, 1988; Shane, 2003; Davidsson and Gordon, 2011). We therefore define Nascent Entrepreneurship as the process of creating value by bringing together unique combinations of resources and dynamics to exploit entrepreneurial opportunities within an integrative context (Fillis and Rentschler, 2010). This definition follows Gartner's (1985) perspective, portraying the emergence of a new venture as a dynamic process where the use of resources is explored in the context of the knowledge embedded in human, social and cognitive structures (Van de Ven and Engleman, 2004; Rerup and Feldman, 2011; Aldrich and Yang, 2014). Within this study, the definition of nascent entrepreneurs underlying the Panel Study of Entrepreneurial Dynamics is followed, which implies that:

1) they do so on their own , they expect to own all or part of the new venture and and if the new firm can be considered an independent start-up

2) they consider themselves as actively engaged in the new venture creation process by committing time, efforts and resources intended to culminate in a viable start-up in the past 12 months

3) they have engaged in some start-up activity in the past 12 months, and whose start-up did not yet have a positive monthly cash flow that covers expenses and salaries for more than three month.

and 4) and "the initiative has not progressed to the point it may be considered an operating business." (Reynolds & Curtin, 2007, p. 9).

2.3 New venture creation: Canonical Models and an Integrative-Dynamic Perspective

2.3.1 Gartner

This section presents a brief overview of the evolution of theoretical models of the creation of new ventures. We call these models 'canonical' because they form essential and commonly used building blocks for thinking and developing theory about the phenomenon of new venture creation. The main early reference is the four-dimensional conceptual framework proposed by Gartner (1985) and presented in Figure (2.1) below.

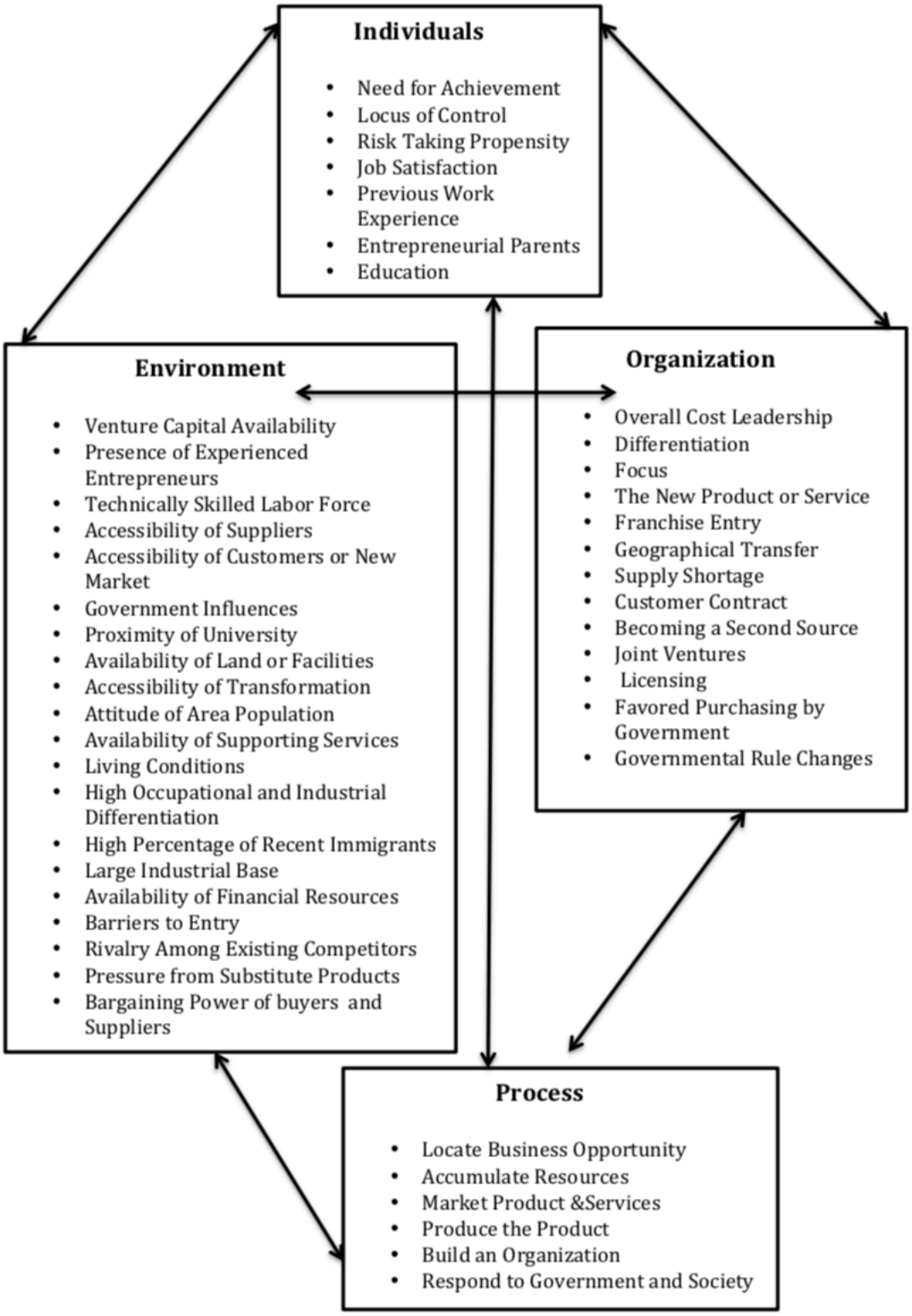
In this framework, Gartner established a framework that recognises differences between entrepreneurs as the basis of diversity among new ventures in gestation. He acknowledged the process of new venture creation as being a 'complex and multidimensional phenomenon' that

entails conceptualisation of the variations that exist among new ventures by integrating into consideration the characteristics of the founders and the environment in which they act. Gartner sought to move away from the biases associated with one-dimensional research that analysed new venture creation by observing differences between entrepreneurs and non-entrepreneurs, assuming that entrepreneurs were part of a homogeneous population.

Gartners' (1985) framework portrayed new venture creation as a gestalt of variables encompassing four dimensions: individuals, process, environment, and organisation. He postulated that 'the creation of a new venture is a multidimensional phenomenon; each variable describes only a single dimension of the phenomenon and cannot be taken alone" (p.697). Additionally, Gartner's model suggested that 'no new venture creation can be comprehensively described, nor can its complexity be adequately accounted for, unless all of its four dimensions are investigated and an attempt is made to discover how variables from each dimension interact with variables from other dimensions' (p. 698). The model suggests that the integration of those four dimensions enables researchers to envisage a holistic picture by creating a model on the basis of the synthesis between process and individual considerations.

The Gartner model provides a thorough observation and description of new venture creation, allowing for systematic analysis and empirical testing of relationships between variables. According to Aidin (2015), such a "dynamic-integrative" view helps scholars understand how a phenomenon evolves and unfolds over time, leading to success or failure outcomes. This approach is not centered on actions alone, but rather focuses on the influencing factors acting on nascent entrepreneurs in order to explain such actions.

Figure 2.1: Gartner's (1985) New venture creation Model



Source: Gartner (1985)

Learned's (1992) model of the organization formation process was among the early empirical attempts that followed the multidimensional approach of Gartners' (1985) conceptual work. Learned's (1992) model focused on three dimensions to firm formation: propensity to found,

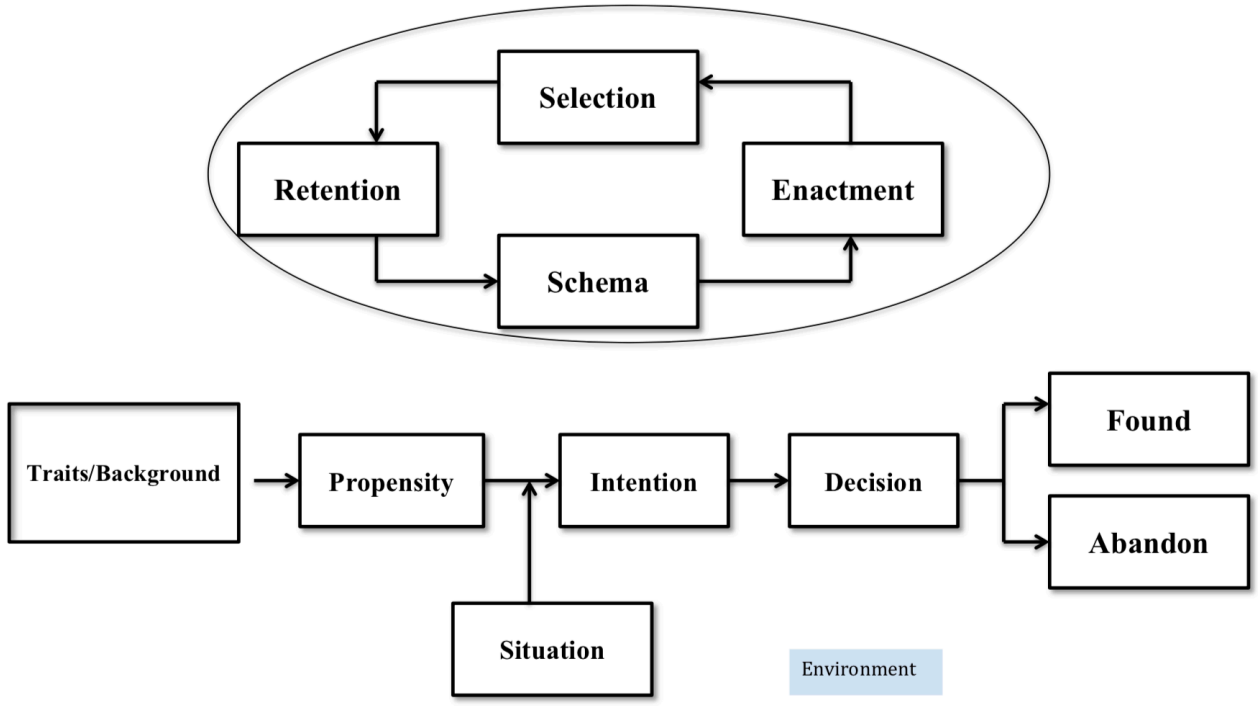
intention to found, and sense making. The model sheds light on how entrepreneurs may follow different paths towards new business formation (leading to different types of organisations) as they capitalise on particular combinations of personal traits, background, disposition, cognitions and resources. Accordingly, these combinations would lead to different learning strategies and different attributions. Learned's (1992) model (Figure 2.2) is presented in the next section.

2.3.2 Learned (1992)

Learned's (1992) model, which is presented in Figure (2.2), discussed the new venture formation by detailing how individuals who possess comparable attributes differ in their likelihood to found a new venture. The model promotes diversity rather than specificity describing how initial traits and resources combine with environmental situations in a cognition process through which would-be entrepreneurs evolve from propensity to intention, culminating in the final decision of abandoning or founding of the new venture. This individualistic orientation to new venture creation has its roots in neoclassical economic theories that identify success in entrepreneurship on the basis of individuals' resources, preferences, and personal factors (Shane, 2000; Shook et al., 2003). However, Learned (1992) stressed the notion that personal traits and resources are not static, but change throughout the process, leading to the final decision to whether start a business or not.

Learned's (1992) model assumed that enterprising individuals change behaviours over time and hence resources tend to evolve as nascent entrepreneurs interact with social actors and accumulate different knowledge and experiences that create a propensity for business venturing behaviour. Learned (1992) also emphasised the role of cognitive capital by arguing that mental workings are manifested in a process that focuses on gathering and processing information as well as assembling the endowed resources and their combinations as suggested by Gartner (1985). Cognition acts on the basis of mental causal maps that lead to either inertia or action, taking the entrepreneurial process towards completion. The model emphasizes that new venture creation requires more than static, retrospective, and descriptive attributes in order to differentiate nascent entrepreneurs.

Figure 2.2: Learned's Model of Organisational Formation



Source: Learned (1992)

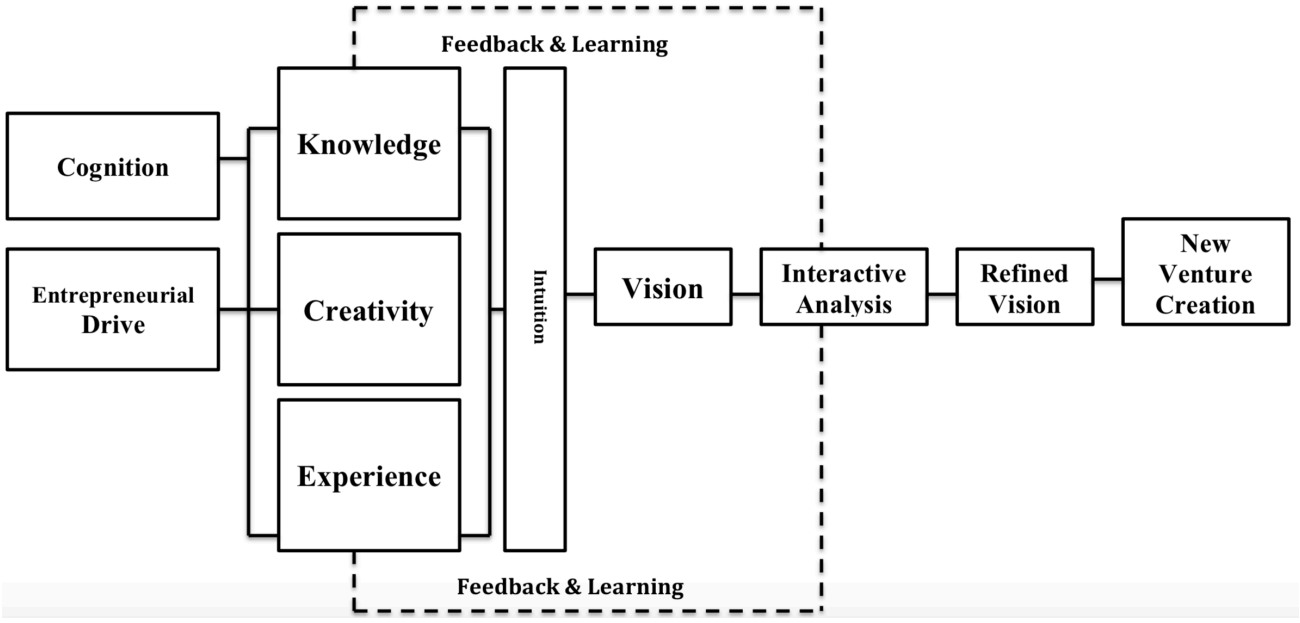
Therefore, cognition has unique impulses that appear to be the foundation upon which all else is built. In this view, the next model elucidates the sense making dimension presented in learned's (1992) model by explaining the premise that business creation is an act of a cognitive process by which an entrepreneurs perceive linkages and relationships as they commit to particular vision, intention and course of action. The next model defines these linkages within the iterative dynamic of comparison of the dream with the reality of implementation and the conceptualization of a successful outcome. The ultimate insight of this model is to portray how the cognition and entrepreneurial drive become infused with knowledge, innovation and experience of the entrepreneurs, and transmit perceptual images into the mind through intuition in order to create an entrepreneurial vision that seems to be the defining outcome of the process. The next model portrays new venture creation as process of dynamic analysis and iteration that leads to a refined vision that culminates in the creation of a new business.

2.3.3 Carland and Carland

Carland and Carland (2000) followed Gartner's process approach in building a model predicting the success of the new venture creation process. The model, presented in Figure (2.3), argued that research on entrepreneurial success lacked consistency since it looked at the determinants of new

firm success by making a conceptual leap forward in the new venture process (i.e. towards survival, performance, growth) while overlooking the antecedents associated with the pre-startup stage. They emphasised that 'the process of venture creation must derive directly from a cognitive process, as it is a deliberate act of volition' (Carland and Carland, 2000, p. 5). Their model theorised the Nascent Entrepreneurship process on the basis of the interaction between social context and creativity tempered by entrepreneurial intuition which, at a collective level, stimulates the learning (process dynamics) and the emergence of entrepreneurial vision in the mind of the enterprising individual in a way that culminates in the launching of the new venture. Carland and Carland (2000) argued that the process of founding, in essence, is one of human cognition, as enterprising individuals acquire insights about their own resources and the surrounding environment. This cognition process, which differs across individuals, guides nascent entrepreneurs' attention to new methods and approaches that should inform our hypothetical understanding of the new business creation phenomenon.

Figure 2.3: Carland and Carland's (2000) New venture creation Model



Source: Carland and Carland (2000)

In the view of the preceding conceptual model and its dynamics, the next model is a pioneering empirical attempt that tested how entrepreneurial knowledge (entrepreneurial drive) interacted with the dynamic process of opportunity exploitation in a way that differentiates the outcomes attained in the entrepreneurial process (success or failure in launching a new venture). The model allows for deriving testable predictions of direct causality relationships between entrepreneurial

characteristics and outcomes, and was among the early attempts that aimed at conceptualising entrepreneurial capital as well as exploring the underlying factors that shape the successful emergence of new ventures (Stringfellow and Shaw, 2009).

2.3.3 Davidsson and Honig

Davidsson and Honig's (2003) model (see Figure (2.4)) portrayed the phenomenon of new venture creation in connection with individual endowments of knowledge and social contacts. These authors resorted to the theories of human (Becker, 1964) and social capital (Burt, 1997) as antecedent explanations of process differences. Human capital corresponded to the formal education, training, and work or business ownership experience acquired by the would-be entrepreneur in the past, while social capital represented the networks of personal and professional connections that would-be entrepreneur might resort to in order to acquire resources (e.g. finance) and knowledge.[1] The authors tested the relationships predicted by the model using longitudinal data for Swedish nascent entrepreneurs.

This model had a much simpler structure than the previous ones. Davidsson and Honig (2003) decomposed the entrepreneurial process into discovery and exploitation stages. The model was designed to further our theoretical and empirical understanding of the influential factors (resources and actions) that come into play during the emergent phases of the entrepreneurial process based on the earlier works of Gartner (1988) and Shane and Venkataraman (2000). The model maps the resource components possessed by nascent entrepreneurs and their influences on the two sub-processes (discovery and exploitation) of the new venture creation process; it posits that variations between nascent entrepreneurs revolve around the interactions that take place between resource endowments (human and social capitals) and the dynamics of the process of exploitation (gestation activities). The model introduced new insights by examining the 'comparative importance' of human and social capital as nascent entrepreneurs progress through different stages of the new venture creation process, facilitating our understanding of idiosyncratic resources and capabilities entrepreneurs require to succeed in establishing their nascent ventures.

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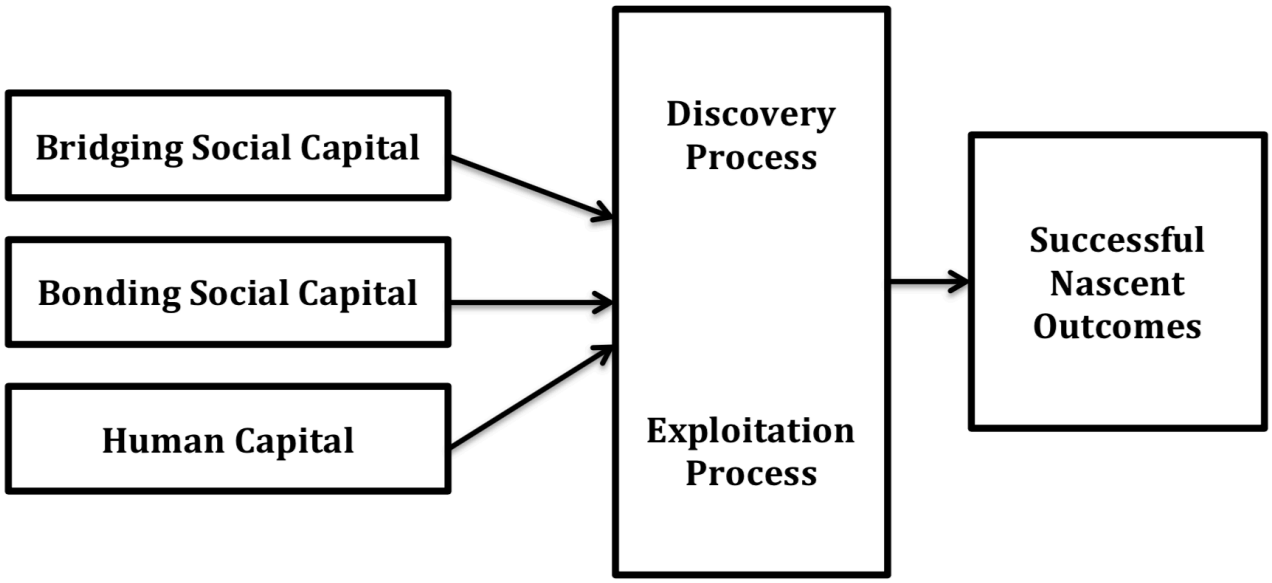
[1] Both these concepts will be discussed further ahead in the presente review.

[2] The rationale for these differences is explained in Gartner et al.'s (2004) Handbook of Entrepreneurial Dynamics.

Figure 2.4: Social Capital, Human Capital and the Nascent Entrepreneur Model



Source: Davidsson and Honig (2003)

Success in the venture creation process would ultimately be determined by the individuals' ability to possess (or acquire) the human and social capital required to start a business given the external environment they face and the kind of opportunity they are seeking to exploit. Davidsson and Honing's (2003) empirical findings indicated that factors relating to human capital were identified as significant predictors of opportunity discovery, yet had no significant effect on the exploitation process, while social capital factors affected both discovery and exploitation.

In the next model, Kessler et al. (2012) present a modern version of Davidsson and Honing's (2003) modelling by proposing a systematic and explorative approach to identify the success factors in realising nascent ventures. This modern version of new venture creation model expands the resource dimension presented in the preceded model and adds new dimensions, namely personality and founding process development, in order to uncover their individual effects up on the founding success.

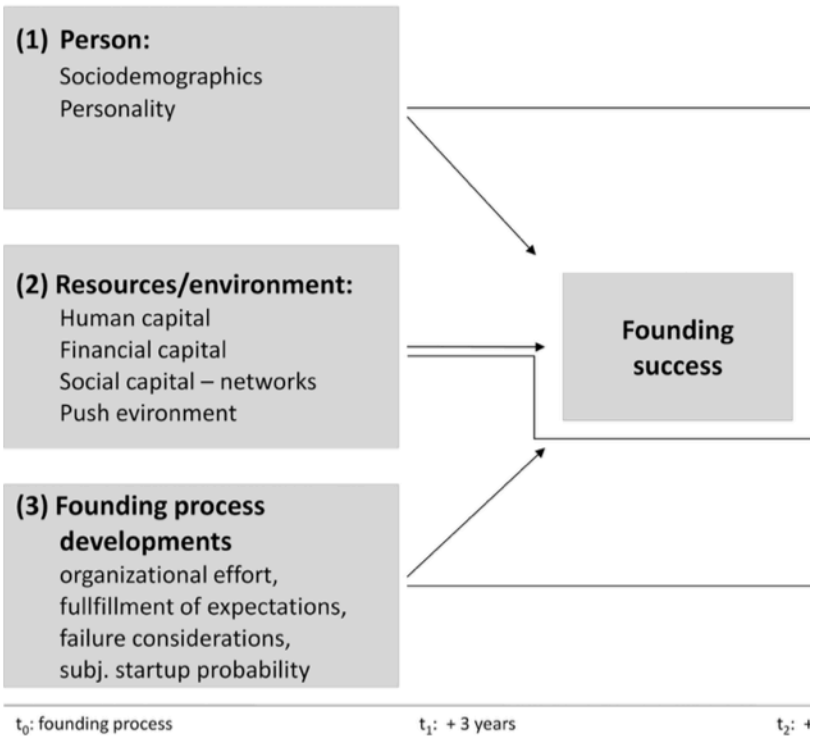
2.3.4 Kessler et al.

Their model, as presented in the Figure (2.5) below, adopted a configuration approach based on Miller (1987) that was originally used to describe the development of established ventures. These authors adopted a comprehensive approach to uncover the determining factors of founding success by incorporating three dimensions that relate to resources (inputs), person (founders) and

process aspects (founding, boundaries and exchange). These dimensions give the emerging venture its style, unique identity and structure. Kessler et al. (2012) adapted Miller's model to the new venture creation process by combining it with Gartner's (1985, 1988) conceptual view of new venture creation.

Kessler et al. (2012) test their model by studying the factors influencing the successful transition of 227 Austrian nascent ventures traced over a period of seven years ending in 2005. The model's findings indicated the limited relevance of personal traits and resources, and instead emphasised the special relevance of process aspects in explaining the success of nascent ventures. The authors justified the lack of relevance for person- resource dimensions based on the assumption that the process dimension indirectly incorporates aspects that relate to the personal ones.

Figure 2.5: Predicting Founding Success



Source: Kessler et al. (2012)

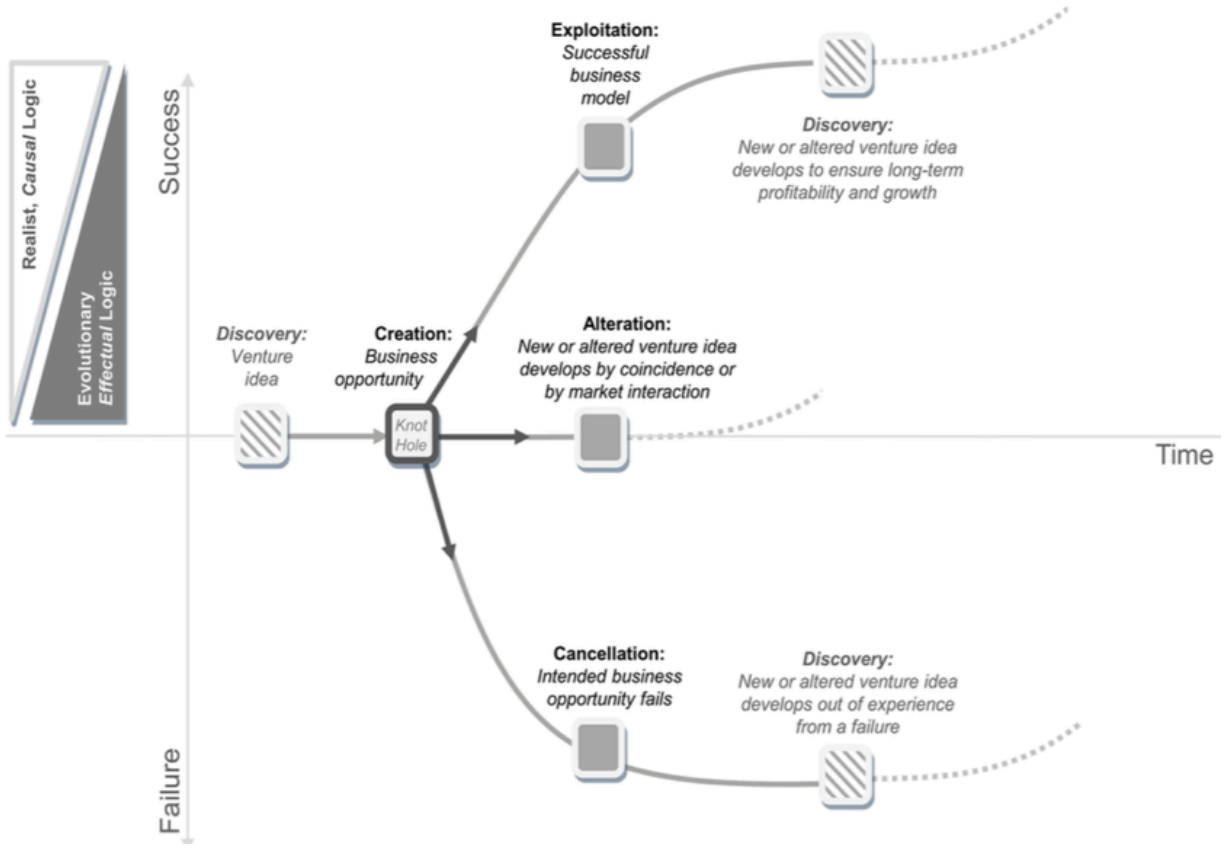
2.3.4 Becker et al.

Becker et al.'s (2015) model (see Figure 2.6) adopted an evolutionary theory of new venture emergence, based on the occurrence of disequilibrating effects that drive nascent entrepreneurs forward or backward in the new venture process as they acquire knowledge and exploit resources. According to this view, linear, chronological models describing direct effects of factors such as

entrepreneurial knowledge or networks upon the probability of successful gestation ignored the complexity of feedback effects embedded in the dynamic process of new venture creation, by which would-be entrepreneurs learn new knowledge and acquire new networks as they move across the process. According to the authors, by ignoring feedback effects, as well as the emergence of parallel and overlapping events, linear models of the nascent entrepreneurship process are limited and flawed (Liao et al., 2005; Moroz and Hindle, 2012; Becker et al., 2015). Becker et al.'s (2015) adopted iterative-dynamic modelling distinguished by improvisation and experimentation in the face of uncertainty regarding the possible outcomes of different choices (Sarasvathy, 2001). Sarasvathy's (2001) "effectuation" theory proposes that entrepreneurs resort to experimentation and improvisation in order to promote flexibility, compensate for limited resources, and deal with unpredictable and emerging situations.

The model by Becker et al. (2015) emphasised the recursive nature of the new venture creation process as nascent entrepreneurs face successive stages of success/failure and discovery that lead to changes in their plans and subsequent alterations in their planned course. Survival through the nascent entrepreneurship process then requires learning and adaptability, innovation based on emerging experience, information and impressions absorbed during the exploitation process in alignment with the entrepreneur's social and cognitive positions. Becker et al.'s (2015) model therefore focuses primarily on the process dynamics of resource exploitation rather than on opportunity discovery as the main determinant on success in new venture creation. This iterative process model agrees with Van de Ven et al.'s (1984) view of the emergence of new ventures as an organising process and a collective endeavour in which different resources are combined and recombined to found a new entity (Shane, 2003). Becker et al.'s (2015) model asserts the importance of considering the emerging nature of knowledge and experience in social, entrepreneurial and business settings leading to new venture emergence.

Figure 2.6: A dynamic model regarding success or failure of a new venture



Source: Becker et al. (2015)

To sum up, the preceded section presented conceptual background and discussed selected theoretical and empirical studies. These concepts are taken up again in chapter 3, and further in chapter 7 in the light of the evidence that is presented in chapters 5 and 6.

Although much progress has been made in understanding the association between entrepreneurial capital and new venture creation, the existing literature had limited theoretical attempts toward distinguishing the main and combined effects within a comprehensive model of new venture creation. Thus, key questions remain about how and why some startup capital attributes facilitate the launching of new ventures. In a similar vein, while researchers agree that human, social and cognitive based capital in founding attempt interacts; but it is not fully clear yet how these forms of capital play together exactly. Accordingly, this study allows an elaboration, extension, and reconciliation of existing concepts of entrepreneurship by responding to the call for further investigating the interdependencies among those factors (Schjoedt, et al., 2013); and thus aims to make contributions to Nascent Entrepreneurship literature.

The different paths of integration presented in previous models are important because in entrepreneurship, the collective knowledge are the road to success (Beckman, et al., 2007); therefore, an efficient, evolving and embracing exchange of different visions, relations, insights and experiences is required to establish a profound base of knowledge throughout the founding process and ensure knowledge integration across different factors (Majchrzak, et al., 2012). Moreover, observing the feedback effects of the founding process on the relationship between resource endowments and new venture outcome is crucial; as particularly in the setting of nascent ventures. Nascent entrepreneurs operate in dynamic environments where they need to overcome the liability of newness. A lower probability of more profound integration and dynamics thus decreases the performance prospects of those nascent ventures. As such, the presented models support the notion that it is not about the existence of individual forms of start-up capital's attributes which may work against the established beneficial outcomes of strong base of resource endowments. Clearly, individuals, who rely on their strong capital base in isolation from other factors, are likely to strive for excessive harmony with their prior knowledge in order to avoid cognitive conflict. This may lead to a situation that impedes many insights and leaves start-up capital potential untapped. This, in turn, further decreases the propensity of implementing substantial changes and innovations and ultimately lowers the chances of concluding the founding process.

Recent literature in the context of entrepreneurial capital, as presented in this chapter, points to the importance of human, social, cognitive and process concepts when explaining nascent venture performance. But, on the other hand, the literature also points to the potential important downsides of individual forms of capital that do not appear to influence nascent venture outcomes independently of other factors. Thus, one could expect that knowledge and competency management occur not only in the context of an individual, but also within the relationship between different concepts (Argote, et al., 2003). In deed, the type and quality of such interdependencies are essential in the context of the present study. Interdependencies among different form of entrepreneurial capital are an important success factor of nascent entrepreneurship. The theoretical basis of those interdependencies is process dynamics concept as well as human, social, and cognitive capital literature.

Thus, in general, literature strongly agrees that 'integration' in terms of the dynamic actions initiated by individuals who possess different resource endowments is significantly related to the performance and success of a nascent venture, mostly because it fosters entrepreneurs' coherent

capacity to exploit opportunities and to judge the value of entrepreneurial actions at different stages of development. Therefore, we follow this established reasoning and the strong prior theoretical and empirical evidence by formulating a comprehensive framework that aims to explore the integrative-dynamic potential of the forgoing concepts.

The interactive approaches presented in this chapter highlight that there is an emerging stream of literature that deals with the multidimensional and interdependent nature of entrepreneurship. As evident in previous models, researchers in the field of entrepreneurship and over different decades have emphasised the importance of interactive models (Gartner, 1985; Greenberger and Sexton, 1988; Greenberger and Sexton, 1988; Bouchikhi, 1993; Chandler and Hanks, 1994; Gnyawali and Fogel, 1994; Naffziger *et al.*, 1994; Baum *et al.*, 2001 Korunka *et al*., 2003). Thus, such models do not attempt to explore the individual characteristics of entrepreneurship phenomenon, but more importantly, they aim to understand the relationship among different attributes and how different interactions influence entrepreneurial outcomes.

Each of the models outlined provides a basis for theorising about the relationship between process and resource endowments in describing the nascent entrepreneurship and predicting its outcome. As models focused more specifically on individual characteristics (e.g. human and social capital) their structure became simpler, more linear and easier to test. As feedback effects and process dynamics are introduced, models require complexity, as cognition processes (learning and adapting) are seen as being at least as important as initial resource (knowledge and networks) endowments. Therefore, at the heart of such approaches is the contention that the objective capital structure in entrepreneurship – measured by different forms of resources, resides within interrelated determinants.

Likewise, the approach of the presented models argues that a simple structure of start-up capital stimulates entrepreneur's engagement in new venture creation because it affects the person's perception of founding opportunities, business legitimacy and access to necessary resources which, in turn, are among the more direct causes of his or her entrepreneurial action. Whereas individual models have been studied with increasing attention in linear focus, particularly in studies investigating the mechanism behind the personality-entrepreneurship nexus (Silbereisen, and Rodermund, 2010), research on multiple dimensions (integrative-dynamic characteristics) of entrepreneurship is a promising venue for investigation.

As is true for human behaviour in general, entrepreneurial capacity is embedded in the wider

complex system. Thus, the approach of the presented models shows empirical evidence, suggesting that complex (integrative-dynamic) characteristics are important determinants of entrepreneurial outcomes (Reynolds 2007, Davidsson and Gordon, 2011). This approach highlights two main reasons why such complex characteristics are important for entrepreneurship. First, opportunities often emanate from a recombination of existing knowledge and or experiences. For example, the tacit component of knowledge does not travel well and can be best transferred by the existence of entrepreneurial role models (Andersson and Koster, 2010). Moreover, there is ample empirical evidence that knowledge spillovers are actuated by dynamic actions (iterative- feedback effects) (Gordon, 2012). Thus, taken together, the notion that entrepreneurs as well as the business opportunities are tied to and shaped by the evolving nature of entrepreneurial tasks, the models emphasise the importance of the multi dimensional nature of nascent entrepreneurship. This in turn suggests that although the role of start-up capital's attributes in entrepreneurship has received scholarly attention, inconsistent findings suggest a need to develop a deeper understanding of how these individual attributes interact with other factors to relate to nascent venture outcomes.

In light of this logic, the preceded models posit that the success/or failure of entrepreneurship is a function of nascent entrepreneur's idiosyncratic position within the evolving experience of new venture creation. Therefore, the aim of the present study is to go beyond preceded models by focusing on a more sophisticated and comprehensive multidimensional perspective of new venture creation that considers the comparative importance of linear-integrative-dynamic interactions. The central theme of our model is that an expanded view of nascent entrepreneurship should include the entirety of the entrepreneurial experience, which is composed of both resource endowments and process dynamics. The employed theme brings together arguments from linear-focused entrepreneurship research (e.g., Davidsson and Honig, 2003) and integrative-focused entrepreneurship research (e.g. Gordon, 2012). More importantly, the proposed model tests the moderating effect of cognitive capital and process dynamics on the relationship between resource endowments and nascent venture outcomes. The research has a multidisciplinary character as the main concept draw from ideas of three main approaches, namely, linear, integrative, and dynamic approaches. As will become evident, the common feature of these three approaches is their attention to important concepts, namely human, social, cognitive based capital and process dynamics capital. Thus, in Chapter 3 these concepts are introduced and discussed in more detail.

2.4 Nascent Entrepreneurship in the Context of Discovery and Exploitation

Central to the concept and process of new venture creation is the ability of nascent entrepreneurs to discover entrepreneurial opportunities (Shane and Venkataraman, 2000; Jarvis, 2016). However, Shane and Venkataraman (2000, p.222) argued:"although the discovery of an opportunity is a necessary condition for entrepreneurship, it is not sufficient. Subsequent to the discovery of an opportunity, a potential entrepreneur must decide to exploit the opportunity". Therefore, new venture creation involves nascent entrepreneurs recognizing opportunities and exploiting those opportunities by taking action to found a new venture. Following this logic, there are different activities that define each step. The first step: Opportunity discovery is characterised by being aware of potential ideas, actively looking for and collecting information about opportunities, and finally communicating, and evaluating the potential of the business ideas. The second step: opportunity exploitation is characterized by developing a business model based on a perceived entrepreneurial opportunity, accessing relevant resources, planning the business setup, interacting with stakeholders, obtaining financial resources, and founding the new venture (Kuckertz and kollmann, 2017).

Before exploring how nascent entrepreneurs discover or act on business ideas, it is crucial to clearly understand entrepreneurial opportunity (Gaglio and Katz, 2001). Before such a venture is actually founded, the entrepreneurial opportunity is just a business idea with a perceptual nature (Dimov, 2007), suggested by the nascent entrepreneur's judgment about the expectations of the venturing outcomes the nascent entrepreneur aims to attain (Shepherd et al., 2007). Hills et al. (1997) defined entrepreneurial opportunity as either the possibility to establish new entity or as the possibility to enhance the position of an existing venture through new combination of resources (Ardichvili et al., 2003). While, other researchers defined entrepreneurial opportunity as a gap in the market (disequilibrium) that entrepreneurs capitalise on in order to react to unmet demand or interest (Kaish and Gilad, 1991).

In general, and from an economic perspective, entrepreneurial opportunity involves different forms that hold the potential for new economic value (Alvarez and Barney, 2007), "in which a person can create a new means-ends framework for recombining resources that the entrepreneur believes will yield a profit" (Shane, 2003, p. 18). This economic value is manifested in different forms that include: the creation of a new type of industrial establishment, the discovery of a new market, the introduction of innovative products or services, the creation of raw materials, the launching of new

methods of production or technology, the reaction to new ways of organizing or the reaction to regulatory changes (Schumpeter, 1934; Casson, 1982; Eckhardt and Shane, 2003).

All these definitions would result in a profit potential, resulting from different factors such as the personal knowledge, competencies, new venture ideas; and other contextual and environmental factors (Singh, 2000; Timmons and Spinelli, 2004). According to the resource-based theory of entrepreneurship, the entrepreneur's access to resources is an important predictor of opportunity-based entrepreneurship (Alvarez and Busemitz, 2001). Access to resources including knowledge, skills and experience, is likely to improve the entrepreneur's capacity to recognize and act upon viable entrepreneurial opportunities (Davidsson and Honig, 2003; Gartner et al., 2005). However, different individuals will recognize entrepreneurial opportunities and act upon it in idiosyncratic ways – as they hold different resource endowments (Shane and Venkataraman, 2000) and develop different tendencies towards their innate ability to draw on potential interdependencies. In this line of thinking, we argue that such interdependencies among resources and process dynamics may leverage (or limit) the intelligence of entrepreneurs, resulting in a more (or less) efficiency in discovering and enacting entrepreneurial opportunity, and this should eventually lead to a successful (or failing) experience in founding a new venture.

In this study, we argue that opportunity – discovery – exploitation process involve both accessing information about the opportunity to found a new venture and combining resources to enact it once detected. Therefore, different forms of knowledge and interactions appear to have strong associations with both opportunity discovery and opportunity exploitation; process dynamics, human, social, and cognitive- based capitals are four categories that are crucial in the context of this study. However, according to Kuckertz and Kollmann's (2017) view, such association will be stronger with opportunity exploitation than with opportunity discovery, as the actions involve a compelling propensity to act on a potential opportunity rather than discovering one worth pursuing.

Moreover, and as stated above, research in entrepreneurship portrays entrepreneurial opportunity as a process that involves two distinct stages: recognition and opportunity exploitation, however these stages are often argued to be sequential steps in the entrepreneurial process with distinct characteristics by which new ventures are founded. In general, prior research in entrepreneurial opportunity has tended to focus on only one facet of opportunity at a time rather than having a more comprehensive approach to the matter. While some research has focused on the discovery - exploitation of entrepreneurial opportunities (Shane, 2000; Dimov, 2007a), but in essence, entrepreneurial opportunity is by no means a reliable predictor that a nascent venture will ultimately

launch; rather, the process of new venture creation is a progressive, recursive, in which nascent entrepreneurs continuously assess the promise of their opportunities (Dimov, 2007). This agrees with the notion that "within much of the work there is an implicit linear sequencing of the discovery-exploitation process such that one flows from the other and concludes in the establishment of a venture" (Perry et al, 2008, p.288).

In the current study, we emphasise the importance of including a recursive components within complementary view of opportunity discovery- exploitation process to deal with the limitation of the sequential view. Specifically, the study agrees with Perry et al.'s (2008) suggestion that resources possessed by nascent entrepreneurs may be deployed in a conventional order, backward sequence, random progression or simultaneously in the process that promotes the venture conclusion (Perry et al., 2008). Nascent entrepreneurs in this sense, attempt to attain a robust grasp of the pursued opportunity in order to make well-educated understanding of its qualities and engage in a loop of process dynamics that aid them in transforming these qualities into sensible combinations. Apparently, the process of new venture creation might also be conceptualized as a dynamic process of learning, of changes, of discovery, of acquisition, of interaction, of commitment and exploitation, through which a new venture emerges (Cooper et al., 1995).

Thus, by offering a more comprehensive approach to opportunity discovery- exploitation process, we acknowledge the criticality of understanding the dynamic nature of entrepreneurial process by providing an integrated explanation for why some entrepreneurial ventures may be more likely than others to become operational. Therefore, the purpose of this study is to contrast the sequential analytic approach with that of a holistic gestalt approach for research into the recognition and exploitation of entrepreneurial opportunities. This approach contributes to the research stream of entrepreneurial opportunities by portraying an elaborate view around opportunity steps demonstrating critical associations with other key concepts (resources and process dynamics) in nascent entrepreneurship research.

Today, opportunity process represents a unique entrepreneurial behavior, yet its processes and dynamics remain unpredictable (Odebunmi, et al. 2013). In this study, entrepreneurial opportunity at both discovery (idea) and exploitation (tasks) levels is continuously re-assessed in the light of the nascent entrepreneur's actions and outcomes. This recursive concept represents evolving position of the entrepreneurial process and, as such, the aim here is to explore the process dynamics, conceptualise the components that constitutes this process, and further assesses their interdependencies and implications for new venture formation. It operates within a stylized setting in

which nascent entrepreneurs set out to recognizes and pursue opportunities through gestation efforts that would eventually lead to the formation of new startups or be discontinued altogether. In this context, Dimov (2010) posit "sustained nascent entrepreneurial effort requires sufficient confidence or conviction by the nascent entrepreneur in the feasibility and operability of the opportunity at hand" (p. 1127). Therefore, nascent venture's evolving experience can thus be followed along the continuum between two extremes (success and failure). At each extreme, nascent entrepreneurs can obtain and consider new, previously inaccessible information about the exploited opportunities and, accordingly, revise or confirm their decision to proceed further.

Process dynamics – as detailed in the later sections, represents the unfolding promise of the entrepreneurial opportunity, as exercised by the nascent entrepreneur, and thus constitutes a gateway to the continuation or abandonment of the venturing efforts.

2.5 Overview of "Start-up Capital" in the Context of New Venture Creation

Nascent entrepreneurs are said to have specific resources that enable entrepreneurial action (Alvarez and Busenitz 2001). These include the capability to integrate resources and relationships (Barney 1991). Tanas and Saee (2007, p. 181) argued that 'the ability to make a connection between specific knowledge and commercial opportunities requires a set of skills, aptitude, insights and circumstances that are neither uniformly nor widely distributed'. Models of new venture creation emphasise the role played by entrepreneurial characteristics – i.e. the resource endowments of entrepreneurs – in predicting entrepreneurial outcomes. Following Davidsson and Honig (2003), a prevalent form of looking at these endowments is to observe knowledge acquired through formal education and training, as well as professional experience (i.e. human capital) and social networks (i.e. collections of social ties that may provide help in terms of additional knowledge and resources) as central components of what we deem "start-up capital." According to this view, the role of the nascent entrepreneur is to pursue new opportunities through the mobilization of resources to create, deliver and capture value through business activity' (Garnsey et al., 2006).

The term "capital" is used here following the literatures on human, social and cognitive capital, and not referring to financial resources. While the importance of financial resources for the new venture creation process is very significant (Carter et al., 2003; Kim et al., 2006), we are referring here to intelectual, social, and cognitive skills and abilities that allow individuals to access and

deploy resources (financial capital, intelectual property, specialised labor, knowledge of consumers, suppliers, and competitors). Start-up capital can be seen in this context as a collection of instruments (including knowledge and social ties) that enable the mobilization of resources and the exploitation of opportunities (Renzulli et al., 2000; Davidsson and Honig, 2003; Unger et al., 2011; Davidsson and Gordon, 2011). While the model by Davidsson and Honig (2003) focused on attributes associated with human and social capital as the components of start-up capital, the present thesis examined the nature of start-up capital attributes based on three essential components: human capital, social capital, and cognition. In particular, we attempt to explore, the role played by cognitive factors in a process model of new venture creation that, rather than adopting straightforward linear relationships between start-up capital and process outcomes, assumes a more complex set of associations.

In the context of new venture creation, nascent entrepreneurs cannot easily recognise and assess an opportunity, define a business model, and find all necessary resources due to a lack of information and uncertainties surrounding the market and the firm's emergence process. Therefore, they look to create new and contrasting resource combinations in order to be successful (Sarasvathy, 2001; Alvarez and Busenitz, 2001). The ability to create these new combinations and find the required resources depends on the specific characteristics of nascent entrepreneurs – their start-up capital (human, social, and cognitive). Formal education and work experience, social ties, and cognitive abilities allow entrepreneurs to obtain resources (e.g. financial capital and knowledge) and find the best fit between those resources and the dynamic business environment (Sirmon et al., 2007; Baluku et al., 2016).

The Nascent Entrepreneurship paradigm is fundamentally concerned with how early steps in the discovery and exploitation process interlink with founders' characteristics to determine the successful emergence of new ventures (Becker et al., 2001; Davidsson and Honig, 2003; Kannan and Aulbur, 2004; Augier and Teece, 2005; Hormiga et al., 2010). The focus on human capital, social capital, and cognition emphasizes the importance of intangible resources and how they facilitate improved understanding of the entrepreneurial tasks, reinforcing critical reasoning at the early stage of business formation, which in turn improves nascent entrepreneurs' ability to enact, integrate and create new knowledge and achieve entrepreneurial success (Lichtenstein and Brush, 2001; Gordon, 2012).

A number of empirical studies have established relationships between founder characteristics and resource endowments, and new venture founding outcomes (e.g. Van Gelderen et al., 2000;

Davidsson and Honig, 2003, Newbert, 2005; Kim et al., 2006; Van Gelderen et al., 2006; Parker and Belghitar, 2006; Reynolds, 2007a; Diochon et al., 2008; Kessler and Frank, 2009; Dimov, 2010; Brixy and Hessels, 2010; Davidsson and Gordon, 2011; Gordon 2012; Schenkel et al., 2012; Kessler et al., 2012; Klyver and Schenkel 2013; Hessels et al., 2014; Hack et al., 2016). In spite of the empirical attention given to the subject, no conclusive resource theory has yet emerged that explains which nascent entrepreneurs and which new ventures will succeed in their gestating efforts. It is however clear that it is not the endowment of resources that drive success but rather the entrepreneur's ability to create the best fit between resources and circumstances (Mccline and Bhat, 2012).

Human capital, social capital, and cognitive capital shape the entrepreneur's capabilities, helping them to match resources, opportunities, and market conditions averting process pitfalls, and creating the necessary tenacity to cope with new venture creation's challenges (Nair, 2003; Chatterjee and Das, 2015). Start-up capital's attributes are heterogeneous and often act as complements or substitutes (Dubini and Aldrich, 1991). The following sub-sections take a brief look at the literature on these three concepts.

2.5.1 Human capital – What You Know

Human capital can be conceived of as a 'hierarchy of skills and knowledge' (Diochon and Menzies, 2008, p. 153) that 'refer to education, employment or industry experience, and other types of experience' (Coleman, 2007, p. 304). Individuals invest time and money in formal education and other, more specific, kinds of professional (commercial, technological, managerial, or other) in order to accumulate intellectual capital that should make them more productive, earning them greater income (Becker, 1964; 1993). Human capital characteristics – such as the amount of education, employment experience, industry-specific and entrepreneurship-specific experience – also serve as a "signal" of an individual's abilities and trustworthiness in the market, since they can be observed and checked by prospective partners, customers, and financers, serving as a indicator or substitute for features that are not easily identifiable in an "environment where the emerging business does not yet have any reliable or trust-engendering characteristics' (Spence, 1973; Kessler and Frank, 2009, p. 735). Extensive studies in the economics and management literatures have explored and acknowledged human capital as an amalgam of stored knowledge, expertise, skills and competencies residing in individuals' personal backgrounds, influencing their productivity and, therefore, their income (Becker, 1964; Mincer, 1974; Vesper, 1990).

Human capital theory initially derived from economics, focusing on the impact of individuals' investment in formal qualifications on income distribution. The pioneering models of human capital were formalised in the 1960s in the works of Schultz (1961) and Becker (1962; 1964) that emphasized the role of human capital in driving productivity and economic growth, as well as individual income. Theories of "screening" and "signaling" (Stiglitz, 1975; Spence, 1973; and Thurow, 1975) recognized and modeled the impact of human capital as an indicator of unobservable individual qualities that help prospective employers and investors make decisions when information about prospective employees and alternative investments is incomplete. Economic models of human capital (e.g. Mincer, 1974) thus viewed education as a long-term investment that capitalises on human intellect to maximise productivity and income. The theory portrayed human capital in the form of accumulated knowledge that nurtures individuals' productive behaviour (Deakins and Whittam, 2000). Human capital formation and accumulation is acknowledged as a factor of production akin to monetary capital.

Early studies viewed human capital solely in terms of the formal educational system and years of work experience, while others focused on other specific elements that relate to the technical context, capabilities and vocational training acquired beyond the conventional system of formal qualifications (Mincer, 1974). From the perspective of sociology and management theories, scholars theorised human capital as a 'chain of concepts' leading to the development of different typologies that distinguish individuals' skills (Cezard, 1979; Harris and Helfat, 1997; Piazza-Georgi, 2002; Wright et al., 2007). With the emergence of the resource based view of the firm and theories of dynamic capabilities (Barney, 1886; 1991; Teece et al., 1997), other notions of human capital started to be used interchangeably with education, such as skills and competencies, related to both individuals and organizations (Teixeira, 2002; Singfellow and Shaw, 2009). These authors viewed skills as a distinct product of the educational system and training that has a more explicit linkage with technological efforts, conveying more specific competencies that are nurtured over an extended period of time (Lall et al., 1993). While some skills may refer solely to effectiveness in executing tasks (Stevens, 1994) other play a substantial part in knowledge creation (Eisenhardt, 1989; Bosma et al., 2004), awarding human capital (skills, and capabilities) a dynamic quality (Ferreira, 1994) that extends to the knowledge residing in organizations (Teece et al., 1997).

In recent decades, human capital theory became one of the most researched success factors in entrepreneurship prediction models (Davidsson and Honig, 2003; Bosma et al., 2004; Rauch et al., 2005; Unger et al., 2011; Martin et al., 2013; Baptista et al., 2014). Human capital (both in terms

of formal education and training and of skills and capabilities acquired over time) has been perceived as an asset that aids enterprising individuals in recognising opportunities and establishing businesses with distinctive positions within markets (Shane and Venkataraman, 2000). Strategic human capital theory (Snell, 1996) examines which kinds of knowledge and experiences can lead individuals to possess skills and capabilities that enhance their capacity to recgnise and exploit business opportunities. Human capital corresponding to general and specific knowledge about markets, customers, technology, operations, and management processes has been conceived as predicting the individual's abilities to discover entrepreneurial opportunities and pursue them successfully (Delmar and Davidsson, 2000; Shane and Venkataraman, 2000; Baron and Ensley, 2006; Dimov, 2017).

Human capital has been found to play a vital role in bringing about the knowledge-based economy (Bates, 1995), providing individuals with the capability to think critically (Bontis 2002) and creatively (Bontis 1998) in terms of value creation. Not only does human capital aid entrepreneurs and managers to attain productive outcomes, perform and supervise generic tasks, and access resources (Brush et al., 2002), it also serve as a platform that enables the integration of new knowledge and experiences (Cohen and Levinthal, 1990).

2.5.2 Social Capital – Who Do You Know

Social capital includes a variety of social connections – manifested, for instance, as mutual trust – acquired through informal and formal relationships driven by collective actions (Coleman, 1994). Burt (1997) described social capital as a quality created and shared among multiple actors through social intercourse, fundamentally different from human capital in the sense that human capital is present strictly based in the individual, so that 'social capital is the contextual complement to human capital … [While] human capital refers to individual ability, social capital refers to opportunity' (Burt 1997, p. 339).

In recent decades, social capital has evolved as a key concept to investigate a broad range of social and economic questions. In the 1980s, social capital gained popularity based on the works of Bourdieu (1986), Coleman (1988; 1990; 1993) and Putnam (1995; 2000). Pierre Bourdieu defined social capital as an asset with symbolic aspects driven by individuals' collaborative actions. He emphasised the notion of social capital as 'the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance or recognition' (1986, p.243).

Bourdieu (1986) and Lin (1999) were among the early scholars who theorised the instrumental link between social capital and economic standing, and indicated that the individual's capacity to tap into social resources depends on the corresponding economic structure to which they belong. Bourdieu (1986) conceived of social capital within the capitalist realm, stating: 'social capitalism as much as economic capitalism is an ideology of inclusion and exclusion' (p. 245). Coleman conceptualized social capital in terms of its economic function:

> *"Social capital is conceptualised by its function. It is not a single entity, but a variety of different entities having two characteristics in common: they all consist of some aspect of social structure and they facilitate certain actions of individuals who are within the structure. Like other forms of capital, social capital is productive, making possible the achievement of certain ends that would not be attainable in its absence."* (Coleman, 2000, p.39).

Coleman argued that social capital could be interpreted as a means of shaping individuals' actions and motivations and in return promoting them to engage in productive actions that conform to their social norms, codes and obligations.

A central concept central to the study of social capital is the individual's social network. Social networks are organised on the basis of relations, resources, structural configurations, codes, and norms of reciprocity that collectively facilitate social actions and the successful conduct of social undertakings, representing the ecological facets of society (Nahapiet and Ghoshal, 1998). Scholars sought to explain social capital in connection with the formation process of social networks, how social actors relate to one another in social groups, how they mobilise tangible and intangible resources possessed within the network, and finally how they are predisposed to behaviours that conform to the established norms and rules (Nahapiet and Ghoshal, 1998; Lin, 1999). The network perspective acts as a precursor to the development of social capital theories. This perspective followed the classic sociologists who held that social capital takes the forms of bridges, solidarity, structures, skills and norms (Durkheim, 1993). According to Aldrich and Yaug (2013, p. 19), '[n]atural limits constrain resource availability, but social forces and practices also affect access to resources'.

Granovetter (1973) was one of the first scholars to adopt this classical approach to social networks, emphasising the importance of loose relational bonds (weak ties) in facilitating solidarity benefits in environments where relationships in close social circles (strong ties) can be constrained by the rules, norms and obligations of their social groups (Woolcock and Narayan, 2000). This was an avenue of investigation for Burt (1992) who later theorised about 'structural holes' and their

influence in creating connections that bridge social actors across distant networks that extend their reach to more benefits.

The social network perspective viewed social capital on the basis of the network characteristics and how such attributes differentiate the variations among individuals in terms of their perception and actions. This perspective analysed the utility of social actors in terms of heterogeneity (composition) of social network, trust, structural boundaries, rationality and their effects on accessing and mobilising resources efficiently (Kim and Aldrich, 2005). Researchers who followed this theorisation criticised the classification of social capital in terms of sparse and cohesive bonds (Alguezaui and Filieri, 2010), and instead stressed the importance of analysing its characteristics and attributes that relate to the time invested in the relationship, its intensity, mutual confidence, and the degree of reciprocity, regardless of the nature of social bonds.

Research on the role of social capital in economic and managerial environments has focused on the configuration of resources embedded in the social structure; accessibility to different forms of resources and opportunities; and mobilisation (use) of endowed resources (Lin, 1999). Putnam (1993) stated that '[s]ocial capital … refers to features of social organisation, such as trust, norms, and networks' that appear to improve the efficiency of business creation by facilitating coordinated actions. Social capital, in essence, is established within reciprocal relationships, bonds, and structures inherent in social networks, and serves as a conduit to access resources for economic aims (e.g. raising capital or finding potential suppliers or customers for a new business). In this sense, social capital can be defined as 'resources embedded in a social structure which are accessed and/or mobilised in purposive actions' (Lin, 2001, p.29). It has also been described as '[t]he goodwill that is engendered by the fabric of social relations and that can be mobilised to facilitate action' (Adler and Kwoon, 2002, p.17).

Social capital is clearly a multidimensional and dynamic concept. In the present research we follow Adler and Kwon's (2002), and Singfellow and Shaw's (2009) definition of social capital that emphasises the sources and effects of network relationships. By making a clear theoretical and empirical distinction between the sources and effects of social capital, we acknowledge that having access to social relationships does not necessary means that individuals would be able draw on their resources (Adler and Kwon, 2002).

Theory predicts a positive impact of the extent and reach of social networks and social capital on entrepreneurial outcomes (Kim and Aldrich, 2005). While some important studies have borne out

this prediction (e.g. Davidsson and Honig, 2003; Bosma et al., 2004; see also the reviews by Hoang and Antoncic, 2003), early evidence was mixed and contradictory. Empirical work has found it problematic to determine the extent and effect of network participation on entrepreneurial success. Unlike formal education or training, social capital is a somewhat imprecise concept that is hard to measure. This complexity has sometimes led to scepticism about the value it adds to other economic measures (Romero and Yu, 2015). Jarillo (1989), Yoon (1991), Ostgaard and Birley (1996), and Bruderl and Preisendorfer (1998) were some of the first studies to test the impact of network participation on the performance of new ventures providing evidence of a positive effect. However, other studies indicated a negative contribution (i.e. Aldrich and Reese 1993; Bates 1994; Littunen, 2000), while others (i.e. Yoon, 1991) supported a positive effect at the early stage of pre-startup, yet found it irrelevant at more advanced stages.

In general, studies indicate that networks seem to have a positive impact on the ability to access resources, but do not provide consistent results in terms of impact on the ability to exploit entrepreneurial opportunities (Aldrich and Zimmer, 1986).

More recently, authors have focused on the instrumental utility of networks (Skerlavaj and Dimovski, 2006; Skerlavaj et al., 2007; Bratkovic et al., 2009), where the degree of social engagement, civic participation, and reciprocity influences the ability to access and use network resources (Kreuter, 1998). However, by emphasising strong commitment to the network as a pre-condition to access resources, the instrumental view of social capital also referred implicitly to a negative side of social capital that appears to impede free thinking, risk taking, social mobility, innovation and social inclusion (Rubio, 1997; Portes, 1998; Portes and Landolt, 2000; Woolcock and Narayan, 2000; Adler and Kwon, 2002; Foley, 2008). This restricts entrepreneurs by a sense of obligation that impedes them from extending their prior knowledge beyond the network's social boundary, where entrepreneurs become locked in relationships and suffer 'relational inertia' (Bhagavatula et al., 2010) that constrains their potential success (Maurer and Ebers, 2006; Bratkovic et al., 2009; Klyver et al., 2011), suggesting that the positive effects attributed to social capital are overstated in the entrepreneurship literature (Klyver et al., 2011).

Recognising the existence of positive and negative sides to social networks, Woolcock and Klyver et al. (2011) identified two fundamental links between social network theory and entrepreneurship. The first link viewed the contribution of social theory to new venture creation based on the heterogeneity of the relations accessed in social networks and its impact in reaching broad and diverse information and resources, reducing the negative effects associated with asymmetric

information, and attaining legitimacy (Granovetter, 1973; Burt, 1992). The second link emphasised instead at the benefits of homogeneity through which entrepreneurs access benefits from social consistency and cohesion among social actors that aid them in developing relations, accessing resources, reducing uncertainty, and fostering cooperative behaviours and collective capacity on the basis of common values and mutual interests (Aldrich and Zimmer, 1986; Coleman, 1990; Krackhardt, 1992). Following this binary approach to the benefits of social capital to new venture creation, it is possible to argue that in different stages of the process entrepreneurs tend to differ in their needs in terms of resources and information, and hence the synthesis between homogeneity and heterogenity aids them in attaining the necessary balance between diversity and cohesion that meet the evolving and uncertain nature of entrepreneurship (Uzzi, 1996). The model linking social capital and new venture creation proposed in the present thesis takes into account the dual nature of network benefits.

2.5.3 Cognitive capital – What You Think and Feel

2.5.3.1 Introduction

In the recent decades, entrepreneurship literature has witnessed increasing attention being given to cognitive capital in entrepreneurship research; however, it is heavily theorised as a physiological resource for coping with complex circumstances that may confront an entrepreneur (Zou et al. 2015; Baluku et al. 2016). On the contrary, limited research has focused on the direct influence of cognitive capital on entrepreneurial success; for example, Baluku et al. (2016) observed the interaction effect of cognitive capital (trust, optimism, resilience, hope, and self- efficacy) and new venture capital (resources, knowledge, funds and experience) on the success of nascent ventures. Furthermore, and in the realm of Social-Cognitive Career Theory (Lent et al., 1994), it is argued that the interplay between an entrepreneur's cognitive capabilities and his/her environment determines both the individual's occupational choices and his/her likelihood of attaining success (Lent et al., 1994; Brown et al. 2011). While, in the realm of Planned Behavior Theory (Ajzen, 1991), it is posited that the three attributes: attitudes, social norms and perceived control- are significant predictors of entrepreneurial intentions (Van Gelderen et al. 2008; Chang, and Peng 2014), which entrepreneurs rely on as they make deliberate efforts to plan entrepreneurial quest.

The current study, however, focuses on the success in nascent entrepreneurship, and the theory of planned behavior posits that the success in entrepreneurship is indirectly affected by personal and situational attributes via entrepreneurial behaviors (Krueger et al. 2000). In line with this logic, we

posit that different forms of cognitive characteristics are necessary at different points of business venturing. These characteristics play a role in the development of cognitive competency and in stimulating behaviors among nascent entrepreneurs that can foster success, otherwise result in failure.

So, beyond measures of financial capital, social capital, and human capital, entrepreneurial capability is influenced by individual differences. Entrepreneur's cognitive dispositions were found to explain a significant amount of variance in entrepreneurship outcomes (Hmieleski et al., 2008). Cognitive dispositions in this line of thinking are viewed as "consistent individual differences in preferred ways of organizing and processing information and experience" (Messick, 1976: p. 5). It is a competency that emerges as unique attributes and patterns of thinking that involves the individual's conviction that he/she has the capacity to found a new business and the ability to deploy business ideas, capitalize on resources, mitigate risks, persist, and address daunting challenges in the actual exertion of efforts to found a new venture (Dimov, 2010; Zou et al. 2015).

Recent research has theorised such competency in terms of a capital—defined as cognitive dispositions that can be drawn from in order to meet the rational and emotional challenges of the moment (Csikszentmihalyi, 2004; Hmieleski et al., 2008). In this line of thinking, Mehdivand et al. (2012) posit that the concept of business founding is fundamentally explained via the cognitive stance. Ludwig von Mises state "What distinguishes the successful entrepreneurs from other people is precisely that fact that they do not let themselves be guided by what was and is, but arrange their affairs on the ground of their opinion about the future". According to this perspective, nascent ventures are founded on the basis of the cognitive characteristics of nascent entrepreneurs. Hence, "while human capital defines "what you know" and social capital defines "who you know," cognitive capital is said to define "who you are" (Hmieleski et al., 2008, p.1).

Cognitive capital in particular plays a key role in entrepreneurial decisions, perceptions, intentions and actions and in turn represents the individual's psychological capabilities that guide his/her decision to become an entrepreneur, persist in the endeavor, and finally becomes a factor in his/her continuation or abandonment of startups. This form of capital acts as a motivating psychological force that promotes entrepreneur's belief in the propensity of success when presented with a business opportunity and also supports entrepreneurs in assessing what is actually achievable in certain situations. Research conceptualise entrepreneurial sense making as a cognitive capital through which venture- experience and knowledge of the entrepreneur is organised to guide his/her

business founding decisions. In order to deal with uncertainty, entrepreneurs exercise sense making about future outcomes, key success factors in the business, and their effects on the business launching process. This agrees with Hmieleski's et al. (2008, p.1) view that cognitive capital " is particularly important individual characteristic for entrepreneurs to possess in leading their new ventures through the entrepreneurial process— as it will empower them with the capability to persevere through uncertain conditions and to bounce back from failure".

Therefore, entrepreneurial cognition literature in recent literature has started to explore the puzzle of knowledge in the mind of the entrepreneur (Mitchell et al., 2007). For example, Mitchell et al. (2007, p.97) view entrepreneurial cognition as "the knowledge structures that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation, and growth". Accordingly, during the period of business launching, sense making of nascent entrepreneur guides the founding decisions since reliable information about the operations of the nascent business is not available (Dimov, 2007). Thus, we argue that such entrepreneurial judgment pertaining the future success of the nascent venture is a cognitive act in the mind of the nascent entrepreneur. Entrepreneurs form cognitive dispositions that represent their theories of how things work so that they can anticipate and determine a course of actions under complexity and uncertainty.

In an entrepreneurial situation, individuals make decisions by employing their cognitive dispositions that bridge several aspects of an opportunity to anticipated value (Delmar and Shane, 2006). These cognitive dispositions are imagination in the mind of the entrepreneur that foresight the way to get there successfully (Foss and Klein, 2008). Nascent entrepreneurs are forced to make decisions based on their subjective knowledge of the relevant business environment (Mahoney and Michael, 2005). They aim to make sense of the unpredictable cues in the new venture environment, update their knowledge structure, and imagine a course of tactical actions that will lead the venture to attain a resolution. Cognitive dispositions would hold subjective evaluations of key success factors in relation to the expected outcomes from an entrepreneurial process. In this study, we model entrepreneurial judgment as a series of cognitive characteristics that operate on existing knowledge (i.e. human capital, social capital), where nascent entrepreneur responds over time to his/her own "image of a future state of affairs" (Knight, 1921, p. 201).

Clearly, entrepreneurial sense making is a cognitive process, and therefore, we expect the entrepreneur's cognitive dispositions to affect the entrepreneurial situation. For example, Allinson et al. (2000) found that cognitive disposition in terms of cognitive style (intuitive and analytical)

differentiates the actions and behaviors of entrepreneurs' - when these entrepreneurs engage in entrepreneurial situation. Also, after the engagement in new venture founding process, tenacity in the entrepreneurial role becomes crucial; at that point, entrepreneur's level of efficacy is a function of entrepreneur's cognitive ability to deal with difficult situations, resulting in action, resilience and commitment (Trevelyan 2008; Cassar and Friedman, 2009; Dimov 2010; Bullough et al. 2014), which enable them to be particularly resilient to setbacks. Cognitive characteristics motivate entrepreneurs to remain positive, cope and adapt to risks, and develop paths and alternatives toward attaining one's desired targets, and this in turn fosters entrepreneurial confidence and optimism in the pursuit of the business opportunity (DiPietro et al. 2007).

Another example is the entrepreneurial processing of information (gathering, storing, transforming, and interpreting information), where entrepreneurs tend to develop a tendency of determining the appropriate course of action in the venturing tasks based on their active/passive style of informational processing (Baron, 2004). According to psychology literature, entrepreneurs can make decisions and commit to them cognitively as they search for information swiftly or progressively (Dougherty and Harbison, 2007). It should be noted that we do not assume any validity of the decisions the entrepreneur makes based on active/passive processing of information - as this will depend on how entrepreneurs use such cognitions to comprehend why some factors are more relevant than others. In this study we are not arguing that passive nascent entrepreneurs who tend to adopt narrow cognitive knowledge are less likely to succeed than others who identify themselves as active ones, and therefore, regardless of the decisiveness of these individuals, the refined knowledge is critical to the decisions that nascent entrepreneurs make as they combine resources, respond to new signals, and deal with judgmental errors that associate with early judgmental cues.

Clearly, success in creating new ventures is affected by the cognitive strength of prospecting entrepreneurs, which is direct or indirect outcome of general cognitive competency. Thus, cognitive competency is based on the aggregate cognitions (cognitive dispositions) that the entrepreneur possesses. We expect cognitive dispositions to have an impact on nascent entrepreneurs' refinement of their subjective knowledge and their conviction in those judgments. Specifically, we explore multiple characteristics that have been investigated previously in the entrepreneurship literature. These characteristics define cognitive capital that guides the founding decisions for the success of the nascent venture. We focus in this study on specific attributes of cognitive dispositions that connects factors to expected outcomes. This is inclusive of persistence,

confidence, desires, risk awareness, expectations, cognitive thinking, and informational processing which together represent different characteristics that act synergistically to build cognitive competency (cognitive capital) within entrepreneurs (Page and Donohue 2004; Luthans et al. 2007; Baluku et al. 2016).

In this study, we expect that nascent entrepreneurs who are highly conscious of their cognitive characteristics are more likely to refine their existing knowledge and experience and discern the most critical success factors for new venture success. However, we also need to be aware that high levels of entrepreneurial cognitions can be detrimental to the new venture, particularly when deciding how to react to adversities, uncertainties, conflicts, changes and failures (Trevelyan, 2008; and Jain and Ali, 2013). In reality, extant theories are deficient because of their relative inattention to uncertain interrelations and combinations. In cognitive sciences, cognitive capital is regarded as "an abstract representation of the interlinked relationships among kinds of objects and events in the world" (Gopnik and Glymour, 2002). Entrepreneurial cognition in this view reflects an internal dialogue concerning what specific experiences and competencies are most likely to lead the new venture to attain outcomes. This internal dialogue relies on not only existing experience, knowledge and personal competencies but also subjective views, feelings and intuitions that interact with the business venturing dynamics. For example, entrepreneurs pose cognitive tendencies that encourage them to bear the burden of uncertainty and act on it (Knight, 1921). These cognitive tendencies are attenuated when the entrepreneur is exposed to business venturing experience so that his/her anticipation set of possible actions is augmented with new views.

The current study uniquely highlights the main and interaction effect of cognitive capital (Style of thinking, informational processing, satisfaction, motivation, expectations, persistence and confidence) on the success of nascent entrepreneurs. We advance that nascent entrepreneurs employ cognitive capital like a roadmap that reflects their sense making about the most critical factors for new venture success when combined with other forms of capital and dynamics. The cognitive variables based on cognition approach are summarized in Table (2.1) below.

In the context of the present thesis, cognitive capital represents the psychological portrait of new venture creation that reflects how nascent entrepreneurs' mental images of the world emerge as behaviours that limit or promote entrepreneurial actions in a way that affects the outcomes of the business launching process. Based on the growing interest in psychological aspects of economics, over the last two decades scholars embarked on employing the cognitive perspective to explain the reasons, thinking, and motivations underlying the new venture creation phenomenon (Michell et

al., 2002; Shane et al., 2003; Zahra et al., 2005). Cognition capital is defined as the psychological attributes that aid individuals to mentally explain facts and intuitions as they interact with other socio-economic actors to interpret social reality. According to Hmieleski and Carr (2008, p. 5) 'entrepreneurs who build psychological capital should not only increase their general level of wellbeing, but also tend to develop the "grit" that is necessary to persevere through the entrepreneurial process'. Cognitive capital in effect acts as mental scaffolds that enable entrepreneurs to engage in behavioural patterning that in return allows them to conceptualise the situation, connect the missing dots and bridge concepts in order to make sensible decisions and informed judgements that provide better representations of business and social reality. According to Busenitz and Laus' (1996, p. 28), this cognitive framework 'invokes memory, provides knowledge, specifies relationships and produces outputs by making predictions or inferences and initiating behaviour'.

From a sociological perspective, Nahapiet and Ghoshal (1998) defined cognitive capital as a common understanding shared among social actors as they develop mutual codes, narratives, and behaviours. In this collective sense, cognitive capital appears as a knowledge-based ability with an interpretive platform that considers personal preferences, assumptions, expectations, thinking styles and risk perception in reference to the established frames of thinking (knowledge structure) (Schenkel et al., 2009). Mitchell et al. (2002, p. 97) defined entrepreneurial cognition as 'the knowledge structures that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation and growth'. They viewed entrepreneurs in this context as individuals who rely on their heuristics and mental biases to inform their judgement and make venturing decisions under complex and uncertain conditions (Baron, 1998).

In essence, cognitive capital is viewed as the entrepreneur's mental judgment that forms the backbone of entrepreneurial decision-making. It is acknowledged as a powerful metaphor that enhances decision-making and provides a fresh perspective with additional insight into the reasoning of the complex process of Nascent Entrepreneurship (Timmons and Spinelli, 2004). It represents the mental processes that reflect how individuals think and feel as they pursue the new venture quest. The mental processes enable individuals to process, organise, retrieve, interpret and perceive information (Baron, 2004) that in turn allows them to address emerging and uncertain issues (Mitchell et al., 2002). Entrepreneurs are overwhelmed with information, complexities, uncertain conditions, original contexts, risks, conflicting emotions, and time constraints, making them prone to a variety of fallacies and biases (Baron, 1998; Wright et. al., 2000). The study of

cognitive capital is meant to understand how entrepreneurs cut through these conditions, forming mental maps that simplify the complexity of business venturing as individuals recall patterns in order to bridge unrelated information in a way that aids them to act creatively in combining resources to start and grow new ventures (Pretorius et al., 2004). For further detail on the cognitive characteristics used in this study, refer to chapter 3. **Table 2.1 below lists the cognitive approaches in the literature.**

Table 2.1 Cognitive Approaches

Cognitive Factors	Terminology Description
Perception (Cognitive Style)	Based on the theory of planned behavior, individual's attitudes influence their behavior. All behavior is seen as the concurrent result of the operation of both intuitive and rational systems. An entrepreneurial behavior is defined as the creation of new institute to pursue an opportunity, which is also a product of both intuitive and rational systems of entrepreneurs. Entrepreneurs are distinguished by their capability to recognize and take advantage of opportunities unseen by others.
Self Efficacy	Entrepreneurial efficacy influences a decision of an individual to start a new business. Entrepreneurial efficacy id represented by the perception of opportunities and confidence on her/ his skills. Perception of entrepreneurial skills indicate how confident respondents are in their possession of an adequate level of certain skills related to entrepreneurship. Possessing these skills could make individuals feel more capable to start a business.
Social cognition	Generally, personally knowing other entrepreneurs should generate positive attitudes towards entrepreneurs. Development and the related possibility of discovering business opportunities and increasing the willingness to start a new business are influenced by role models. Based on the networking point of view, an individual is able to access support , information and other resources by establishing and maintaining networks within entrepreneurial society.
Source: Abu Baker et al. (2017)	

2.5.3.2 [CC] Cognitive Capital and Nascent Entrepreneurship: Theoretical Perspectives

Despite the fact that several studies suggested that a cognitive lens would very likely enrich our understanding of the nascent entrepreneurship phenomenon, the role cognitive factors play in nascent entrepreneurship have received only limited focus. This is specifically true for empirical research. This lack of theoretical and empirical work is beyond doubt the reason why we know little about how those nascent entrepreneurs who have comparable base of knowledge, characteristics, resources and skills attain varying entrepreneurial outcomes. Scholars have increasingly recognized the importance of cognition in explaining the complexity of

entrepreneurial actions (Kirby, 2003) and outcomes (Baluku et al., 2016). The cognitive perspective is important in the context of Nascent Entrepreneurship for two reasons. First, nascent entrepreneurs usually operate in unpredictable contexts and uncertain, emerging environments; second, the gestation activities performed at the pre-startup stage are often associated with new contexts, unique tasks, innovative trajectories, complex interactions, and mixed judgments. Early studies report significant heterogeneities among entrepreneurs based on their cognitive differences (Cooper et al, 1995a; 1995b).

Social Cognition Theory

The social capital theory is limited in addressing the personal cognitions (e.g., motivations, desires, and expectations) and their influence on individual's actions, and this necessitated the introduction of the Social Cognitive Theory to supplement it. The Social Cognitive Theory has been widely applied in the social science literature that addresses human behavior as a 'triadic, dynamic, and reciprocal interaction of personal factors, behavior, and the social network system' (Chiu et al., 2006, p.1873). The socio-cognitive connection emerged to explain the mental actions as individuals interact with the social reality at a collective level (Tanas and Saee, 2007). The socio-cognitive context focuses on the shared norms, interpretations and systems of values and meanings among social actors (Lio and Welsch, 2005; Tanas and Saee, 2007; Schenkel et al., 2012) that provide guidance for entrepreneurial intelligence (Shepherd and Krueger, 2002). Entrepreneurship research has demonstrated the relevance of the socio-cognitive approach in probing and explaining entrepreneurial behaviour (Gatewood et al*.,* 2002), showing that new venture creation in large part depends on the cognitive strength of the social actors involved (Tanas and Saee, 2007). According to Schenkel et al. (2009, p.52), the hypothetical connection between Nascent Entrepreneurship research and cognitive theory is 'rooted in the epistemic theory of social cognition'.

Cognition theory has proposed that social interaction provides a context that governs how individuals engage 'cognitive neuroscience' and social settings in the mental processing of information in order to explore knowledge content and form subjective knowledge driven by specific patterns of actions (Shaver and Scott, 1991; Schenkel et al*.,* 2009) that shape the entrepreneurs' interpretation of their own identity and social reality. For example, Ozgen and Baron (2007) indicated that the higher the exposure to diverse social information, the greater the cognitive alertness. We, therefore, assume that the socio-cognitive approach in Nascent Entrepreneurship research increases the entrepreneurs' cognitive alertness and their ability to interpret founding situations by reducing the ambiguity embedded in the new ventures creation

environment as they rely on different mental models developed by their social actors (Companys and McMullen, 2007). Social cognitive theory in the context of new ventures creation, observes the progression of new venture creation by combining social and cognitive thinking in a way that increases the entrepreneur's feeling of control and confidence within the collective capacity (De Carolis, 2009). According to Grossman et al. (2012, p. 1777), '[n]ew venture network construction might be better understood if conceptualised as the integrated consequence of instrumental and social psychological forces'. De Carolis' (2009) research demonstrated the applicability of social cognitive theory in the context of new venture creation by exploring the effect of cognitive biases in their interactions with social networks. He pointed out that new venture creation emerges as a result of continuous interactions between entrepreneurs' social networks and the 'asymmetries in cognitive properties' of entrepreneurs.

Social Cognitive Informational Processing

The differences among individuals in how they process socio-cognitive information appear to offer answers as to why entrepreneurs vary in conceiving their own identity and reality and how they vary in interpreting utility, situations and outcomes. According to cognitive dissonance theory (Festinger, 1957), entrepreneurs exhibit varying magnitudes of dissonances and inconsistencies that accompany a broad range of choices and decisions made by entrepreneurs within the collective thinking that relates to social frames of reference. The exposure to the cognitive dissonance will differ depending on the knowledge structure and social context in which business venturing decisions and choices are made. Cognitions in this context act as the 'mental scaffolds, giving structure to information [and] mental frameworks developed through experience that help to organise information retained in memory' (Ozgen and Baron, 2007, p. 179).

Social information processing theory (Pfeffer and Salancik, 1978) described individuals' judgement as a social process that illuminates entrepreneurial cognitive reasoning in complex and uncertain contexts (Gioia et al., 1994). The Austrian school of economics theorised through the work of economist Carl Menger (1840-1921) that information is a critical component that aids individuals to identify prevalent changes and trends in the economic system. He recognised entrepreneurs as social actors with observable levels of awareness that enable them to enact information and create changes that give rise to monetary circumstances within social settings. This enables them to process and organise information into structured knowledge via their cognitive mental schemas (Shane and Venkataraman, 2000) in a way that leverages their self-efficacy, entrepreneurial judgement, and ability to interpret information to attain desired success

(Shaver and Scott, 1991; Ozgen and Baron, 2007). Accessing different sources of information is vital to the new venture creation process and yet not adequate to produce informed decisions, unless considered within the socio-cognitive context (Shane 2000; Casson 2003; Schenkel et al., 2009).

In the context of new venture creation, social cognitive processing theory posits that social context has a significant impact on entrepreneurs' search and processing of information (Harper et al., 2007). Thus, knowledge creation depends on the individual's capacity to organise, combine and exchange information within social sittings (Nahapiet and Ghoshal, 1998). However, processing information about forming a new venture based on shared meanings, social codes and values also make nascent entrepreneurs vulnerable to random selection, as they filter in and out information in the new venture's creation process in predefined perceptual categories (Schenkel et al., 2009). De Carolis (2009, p. 532) argued that 'selectively focusing on information that falls into common perceptual categories may distort the reality of information'. Palich and Bagby (1995) utilised categorisation theory to describe how entrepreneurs, when confronted with 'indefinite situations', tend to assign new information to 'pre-defined mental categories' and thereby interpret new information through filters of mentally biased heuristics that underestimate or overstate their abilities, and affect their understanding of the business-venturing situation, and consequently affect the attained outcomes.

Cognitive Biases

Pioneering studies in cognitive science showed that individuals are not fully rational but rather embrace a wide range of cognitions and mental shortcuts that cause biased judgement (Kahneman et al., 1982). For the last two decades, entrepreneurship scholars have embarked on extending the psychology of cognitive theory to new venture creation settings by investigating a distinct set of mental processes that occur within individuals that differentiate their choices, behavioural actions, and the way they frame decision-making to exploit business opportunities under complex and uncertain environments (Shaver and Scott, 1991; Barney 1997; Baron 1998; Alvarez and Busenitz 2001; Gaglio and Katz 2001; Simon and Houghton 2002; Mitchell et al. 2002; Markman et al. 2004). These authors identified cognitive biases endured by entrepreneurs in the pursuit of new ventures.

Cognitive processes include flawed decision frames that incorporate biases and fallacies. Cognitive biases make entrepreneurs more inclined to interpret equivocal situations favourably due to limited

information processing capacity that makes them more likely to adopt shortcuts that reduce their mental efforts (Baron, 1998). Cognition may motivate entrepreneurs to build 'order' and 'predictability' to overcome ambiguity in the business launching process. However, failure to bridge such gaps of ambiguity may lead entrepreneurs to engage in counterfactual thinking that locks the entrepreneurs in their existing knowledge structure. This makes them inclined to adaptive and intuitive thinking that overlooks the unique aspects that have the potential to drive entrepreneurial success (Schenkel et al., 2009).

Entrepreneurship research sheds light on the sources of cognitive biases through studies of behavioural models of heuristics, bounded rationality and emotional stability (see Figure 2.7) that form an individual's cognitive schema and their patterns of action. The literature described the structure of behavioural biases in the work of Toshino and Suto (2004) as presented in the figure below. This model organises the sources of cognitive biases accounting for early behavioural models of heuristics and prospect theory, which were among the first behavioural theories proposed by Kahneman and Tversey in 1974 and 1979. These theories define the structure of cognitive biases, which in the context of new venture creation refer to the sources of biases that can trigger anomalies. As nascent entrepreneurs engage in the new venture creation process, their behaviours evolve in response to changes punctuated by deep cognitive structures and mental schemes that entrepreneurs deploy in order to tap into other knowledge attributes, and dynamics existing within the business environment (Baron, 2008) to maximise their potential for success.

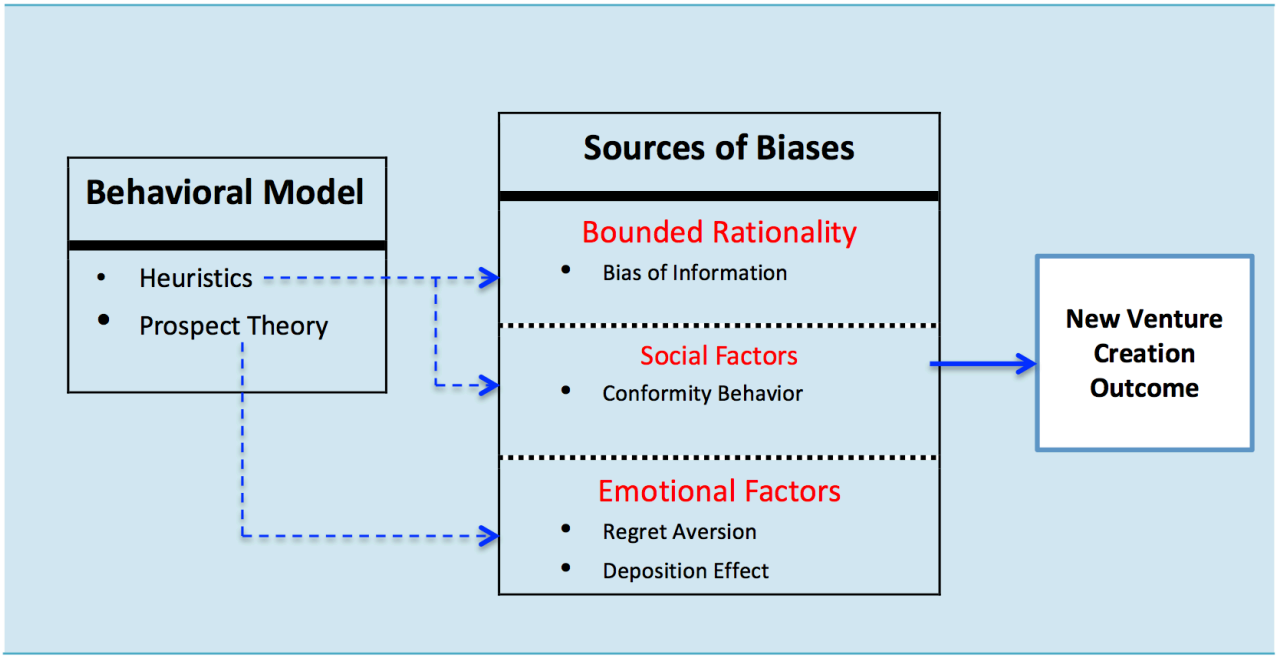
Nascent entrepreneurs do not appear to engage in a far-reaching informational search, and also do not appear to comprehend, process and interpret information at hand accurately due to limitations in their critical thinking capacity. Therefore, they tend to adopt coping mechanisms as means of dealing with their cognitive limitations. Accordingly, they tend to follow shortcuts, rules of thumb and simplifying strategies that lead to many cognitive fallacies and biases. These cognitive biases lead entrepreneurs to engage in counterfactual reasoning and expose them to contradictory effects that, in turn, affect the entrepreneurs' perception of business launching realities (Simon et al., 1999; Simon and Houghton, 2002). This happens as entrepreneurs hold positive perceptions about the potential of certain entrepreneurial actions that facilitate successful entrepreneurial activity (Kahneman and Tversky, 1982; Gaglio, 2004).

Research that focuses on how cognitive biases make some entrepreneurs more prone to success than others has observed that entrepreneurs exhibit asymmetries in their cognitive properties and related interpretations that, in effect, distinguish their probability to launch a new venture

(Gatewood et al., 1995; Baron and Markman, 2003; De Carolis and Saparito, 2006; Shaver et al., 2001). Regardless of whether the cumulative impact of cognitive biases is positive or negative, research indicates that establishing a deep understanding of how specific mental patterns appear is beneficial (Simon and Houghton, 2002). Indeed, if fruitful insights could be gained into how misconceptions occur and which interactions are more likely to cause or solve issues, then such knowledge would help entrepreneurs to cope more effectively with cognitive biases in the context of new venture creation, informing us of the possible actions that nascent entrepreneurs could take to increase their chance of entrepreneurial success.

This approach comes following the scholarly call to establish entrepreneurial cognition in a way that develops its own stance within the context of entrepreneurship cognition research, creating a distinctive epistemological path from cognitive psychology (Mitchell et al., 2004). In Chapter 3 we present a model that seeks to shed light on how cognitions interact and combine and their role in creating new possibilities of new venture creation success.

Figure 2.7: Behavioural Decision Model and Cognitive Biases



Source: Adapted from Toshino and Suto (2004)

On the basis of the literature review presented in this chapter, and the conceptual model proposed in the next chapter, we suggest that success is most likely achieved when decision-making is informed by integrated thinking which creates combinations that fill specific knowledge gaps. This combined context aids us in understanding the underlying factors of success or failure in launching

new ventures and their theoretical implications by exploring the application of theories that relate to social cognitive theory, entrepreneurial cognition, entrepreneurial dynamics and the resource-based view.

This approach is regarded as an important distinction in the literature, where the proposed model suggests that abstract (static) knowledge on its own has limitations that obscure a deep understanding of the unique pathways and underlying reasons for success and failure in the creation of new ventures.

2.6 Process Dynamics and New Venture Creation

A central aspect of new venture creation is its procedural nature (Baron, 2007). Thus, new venture creation can be understood as a continuous process that evolves over different phases. This study applies process perspective because we simply believe that at different stages of the entrepreneurial process different dynamics might have a substantial impact on making progress in the venture creation process. For this reason the process perspective has become a central theme in entrepreneurship research (Shane and Venkataraman, 2000; Shane, 2003; Baron, 2007).

In the entrepreneurship literature, there exist various concepts of the entrepreneurial process. For example, Davidsson (2008) conceptualise entrepreneurial process as the series of behaviour and cognitions that the entrepreneurs initiate from the conception stage towards the relaisation of the business idea. Other researchers conceptualise entrepreneurial process as a sequential process of activities moving gradually – from the emergence of business ideas through an active step by individuals to found new ventures and then to active exploitation of opportunities and subsequent progress of the new venture they create (Baron, 2007). In this study, we accept this latter approach with focus on the dynamical aspects that associate with the nascent phase which encompasses dynamic actions related to the venture founding. The dynamic engagement of the entrepreneurial individual in the sub-phase of the entrepreneurial process – often referred to as the venture creation process (Gartner and Carter, 2004) in order to exploit the profitable opportunity demarks the transition to the nascent phase.

With the increasing interest in entrepreneurial process, the dynamics of the opportunity are important aspects of new venture creation process and have emerged as an important predictor of success. In essence, nascent entrepreneurs are confronted with a wide range of dynamic tasks and

changes to carry out in order to found a new venture. The successful management of these dynamics in the nascent venture stage is an early determinant of the venture's prospects of success at subsequent stages of business development (Shepherd, 2015). Nevertheless, limited insights appear to associate with the key dynamics that influence the level of accomplished milestones by entrepreneurs in nascent firms. According to Baron's (2007, p.167) argument "(...) in the absence of action by individual entrepreneurs, there would simply be no entrepreneurship and no new ventures." Thus, Nascent Entrepreneurship revolves around dynamic aspects, suggesting that examination of the dynamic ability of nascent entrepreneurs and how it viewed and deployed by venturing efforts could help us understand more about nascent entrepreneurial development as a process rather than as discrete phenomenon.

Similarly, the evolution of the nascent venture is essentially dependent on the nascent entrepreneur's objective sense making of the qualities of the opportunity and the necessary skills that they should possess to found a new entity. In deed, the objective value of entrepreneurial opportunity cannot be confirmed unless nascent entrepreneurs undertake dynamic actions towards founding the new venture (Dimov, 2007b). Accordingly, nascent entrepreneurs may choose to sustain their venturing efforts if they attain adequate conviction about the viability of the opportunity at hand (Shaver and Scott, 1991; Shook et al., 2003). Collectively, this study refers to this conviction as the process dynamics that nascent entrepreneurs engage with as they pursue entrepreneurial opportunity at hand, resulting in the reinforcement, refinement or termination of the nascent venture. In this perspective, venture dynamics can lead to a path that the nascent entrepreneur deems no longer sensible, or result in launching a successful operating venture.

The founding experience may involve only part of the nascent entrepreneur's time and utilise only part of the nascent entrepreneur's resource endowments. At the earliest stages, the emerging ventures deemed largely dependent on these resources. The degree of dependence can change as nascent entrepreneurs enact their venture ideas and engage in a series of dynamics (i.e. learning, revisions, gestation efforts) that aid them in updating and refining their knowledge and views about the entrepreneurial opportunity and its exploitation path (Shepherd et al., 2007). In turn, this would aid them in intensifying, redirecting or abandoning the venturing efforts as they confirm the founding assumptions, develop better sense of the opportunity at hand, and assess if they possess the necessary competencies. Ultimately, once the founding attempt is initiated, the ongoing dynamics represent evolving assessment of the viability of the opportunity, which are key factors in influencing the successful launching of the nascent venture.

In fact, one of the most important endowments of an entrepreneur is his/her dynamic ability as it captures the productive capacity of the entrepreneur. In other words, entrepreneurial dynamics were shown to be the main drivers of action and changes at the process level (Gordon, 2012). Yet, the question arises as to how distinct process dynamics' dimensions influence the ability to augment the productive/integrative capacity and attain a greater utilization of resources in the nascent firm. Assessing the impact of the nascent entrepreneur's dynamic ability on the nascent firm's process level seems particularly worthy for two key reasons:

First, prior research predominantly investigated the link between resource endowments and the venture performance. At the general level, evidence suggests a positive relationship. However, key questions arise regarding the reason why such a positive relationship might substantiate. Clearly, moderating effects need to result that connect resource endowments and entrepreneurial outcomes. With this study, we want to shed light into this area in order to develop a better understanding of how and why startup capital dimensions affect nascent entrepreneurial outcomes. Given that resource endowments are intangible productive potential, they need to substantiate via dynamic processes. Therefore, by focusing on the link between specific process dynamics and their moderating effects on particular forms of startup capital, we seek to further our understanding of how nascent entrepreneurial capital impacts nascent venture success.

Second, in line with our notion that it should be beneficial to have more resource endowments (knowledge, experience, skills), the vast majority of prior researches have focused on the direct effects of startup capital in different forms (Zanakis, et al., 2012). However, in this study we chose to follow the few notable exceptions of prior research (i.e. Davidsson and Gordon, 2012) and specifically analyze the interaction effects of startup capital attributes on the process level. In so doing, we build on entrepreneurial capital and resource theory indicating that more might not always be better, but that a particularly static set of skills, experiences and knowledge might be even detrimental for nascent ventures as it might make the entrepreneurs less adaptive (Groysberg, et al., 2011). Therefore, we further explore whether and how a specific process dynamics affects the resource endowments that these founders hold. In deed, the success/failure cannot be contained within an entrepreneurial opportunity in its mere form, active exploration of the qualities (dynamics) of the entrepreneurial opportunity can lay the foundation for more enlightened understanding and timely conclusion of founding efforts. In this context the dominant link of opportunity discovery - opportunity exploitation with resource endowments needs to be aligned with the notion of process dynamics as a learning tool for the nascent entrepreneur.

In this sense, the study aims to inspire a dialogue regarding the dynamic capacity of nascent entrepreneurs in the earliest stages of the entrepreneurial process. As stated earlier, the current study emphasises that the attained outcomes of the nascent entrepreneurial process is individual-specific – as different entrepreneurs possessing different knowledge, skills, and experiences towards the emerging attempt of nascent venture, as well as engaging in different dynamic attempts to exploit the viability of a specific opportunity, will likely attain different resolution.

Summary

This chapter presented a review of the main research issues in Nascent Entrepreneurship as it relates to the factors determining the ability of potential founders to transition from the pre-startup phase to the operation phase. It presents the concept of startup capital as a collection of entrepreneurial characteristics that influence the outcome of the Nascent Entrepreneurship Process. There are three components to startup (or entrepreneurial capital): human capital, which includes education, training, and skills; social capital, which refers to networks of social contacts that provide the entrepreneur with the ability to access information and resources; and cognitive capital, which refers to the psychological structures that entrepreneurs use to make assessments, judgments, or decisions involving opportunity evaluation and exploitation.

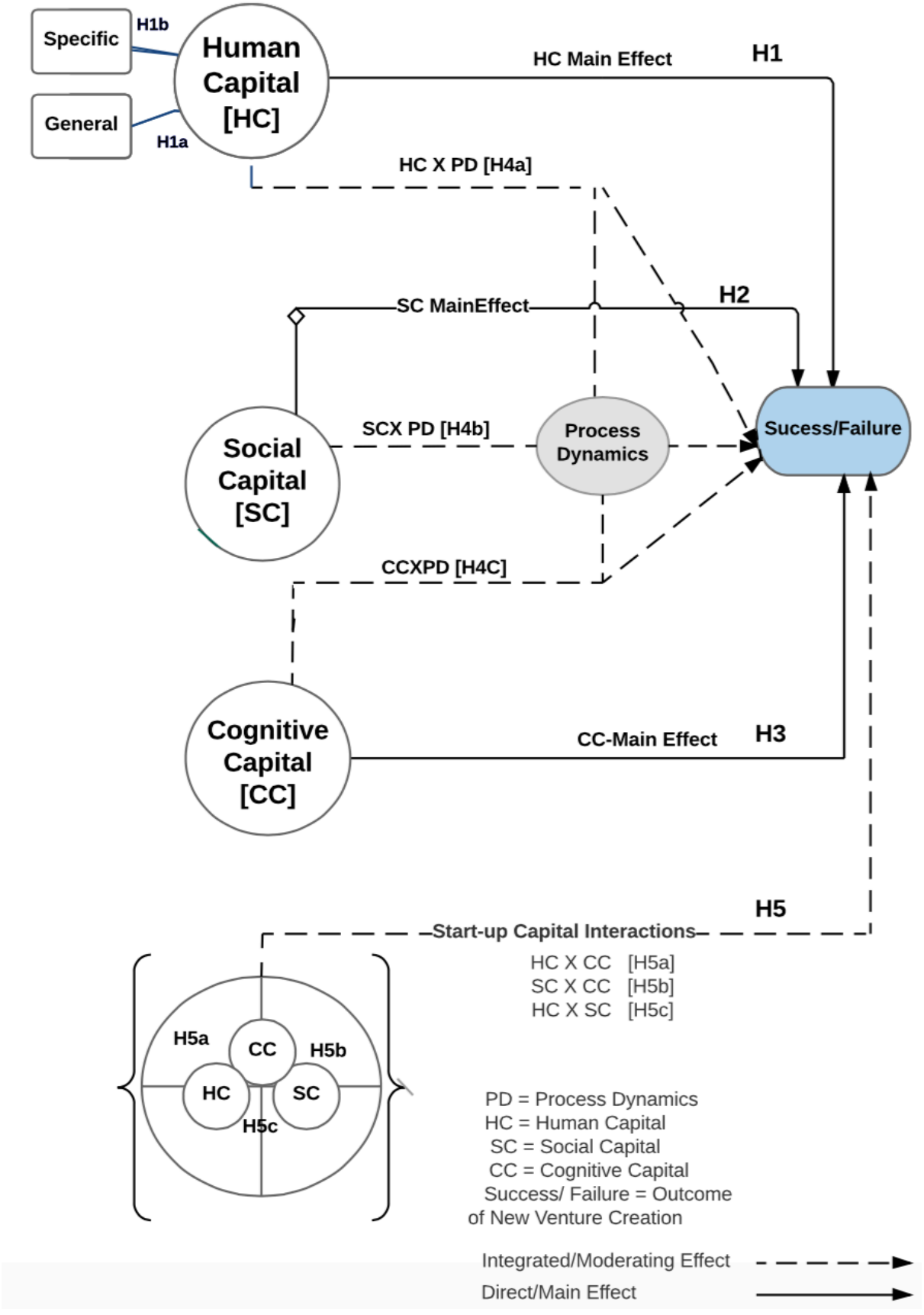
Chapter 3: Nascent Entrepreneurial Capital Conceptual Framework and Hypotheses Development

3.1 Introduction

A critical review of the theories on entrepreneurship alongside empirical work produced critical observations that continue to shed light on the gaps found in the literature regarding the role of start-up capital's attributes and their related combinations and dynamics in explaining the success or failure of the process of new venture creation (Kirchhoff, 1994; Reynolds and White, 1997). Indeed, the measures and the approaches that research have adopted to understand the factors that affect the probability of success /failure in founding new ventures remain largely untested (Samuelsson and Davidsson, 2009) and the factors themselves ambiguous. This ambiguity has spawned a vast theoretical and empirical literature that seeks to identify the antecedents to nascent entrepreneurial behaviour. The model proposed in this study (see Figure 3.1), therefore, considers the complexity and iterative nature of the founding process and represents an attempt to elucidate the premise that new venture creation is a multifaceted phenomenon requiring an understanding of the integrative and dynamic factors at work. This approach conforms to the perspective of what constitutes a theory, sc. '...a set of interrelated constructs ... that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena' (Kerlinger, 1973; cited in Gartner, 1989, p. 4). Therefore, the aim of this chapter is to propose an encompassing model of the factors influencing the Nascent Entrepreneurship process (New Venture Creation) that allows for observing and assessing the linear and the integrated effects of nascent entrepreneurs' attributes (i.e. forms of human, social, and cognitive capital) on the outcomes of the new venture creation process, and developing an understanding of how the moderating effect of cognitive capital and process dynamics affect the relationship between start-up entrepreneurs' attributes (types of capital) and outcomes in new venture creation processes.

The next section will present the main facets of start-up capital's attributes as possible determinants of new venture creation.

Figure 3.1: Nascent Entrepreneurial Capital Model – Research Conceptual Model



3.2 Linear Modelling – "Start-up Capital" Main Effects

The linear modeling uses each nascent entrepreneurial capital attribute [HC, SC, CC] individually to observe their main (i.e. linear) effects on the founding outcome (i.e. success or failure in launching new venture). The conceptualisation of the linear models aims to answer the research question: Which nascent entrepreneurs' attributes (defined as forms of human, social, and cognitive capital) affect the probability of nascent ventures succeeding (i.e. reaching the start-up phase)? The main premise here is that higher stocks of knowledge in different forms (human, social, cognitive) leverage entrepreneurial capacity, helping nascent entrepreneurs to act on opportunities, persist, learn and become operational.

3.2.1 Human Capital [HC] Linear Model and New Venture Creation

The human capital model appears to prevail in new venture creation literature (Dimov, 2017) despite claims made by Baum and Silverman (2004) who indicated that the relationship between entrepreneurship and human capital is overstated. Scholars in this line of logic continue to argue that human capital has an increasing potential to outweigh the dominant influence of monetary factors. From a resource-based view, the human capital held by entrepreneurs has been shown to have a strong prediction for the performance of the new ventures (Hitt et al., 2006). The strategy literature has also acknowledged that human capital held by individuals is unique, intricate, and capable of supporting a sustained value (Barney, 1991). In different decades, human capital has received growing attention by scholars and practitioners alike (Pickles and O'Farrell 1987; Vesper, 1990; Fischer et al., 1993; Bruderl et al., 1992; Dyke et al., 1992; Cooper et al., 1994; Storey, 1994; Hamilton, 2000; Van der Sluis et al., 2003; Bosma et al*.,* 2004; Van der Sluis et al., 2005; Unger et al*.,* 2006; Cassar, 2006; Parker and Van Praag, 2006; Haber and Reichel, 2007; Dimov, 2017).

This shift in importance came in line with the increasing knowledge-intensive activities in business environments (Sonnentag and Frese, 2002; Bosma et al*.,* 2004). It has been commonly applied and studied in the entrepreneurship and management literature, and supported the common perspective that human capital is associated with a positive impact (Shane, 2000; Bosma et al*.,* 2004; Arenius and Minniti, 2005; Ucbasaran et al., 2007; Koellinger et al., 2007; Van der Sluis et al., 2008; Davidsson and Gordon, 2011; Dimov, 2017). In economic theory, human capital, corresponding to general and specific knowledge about markets, customers, technology, operations, and management processes, has been found to predict individual abilities to select

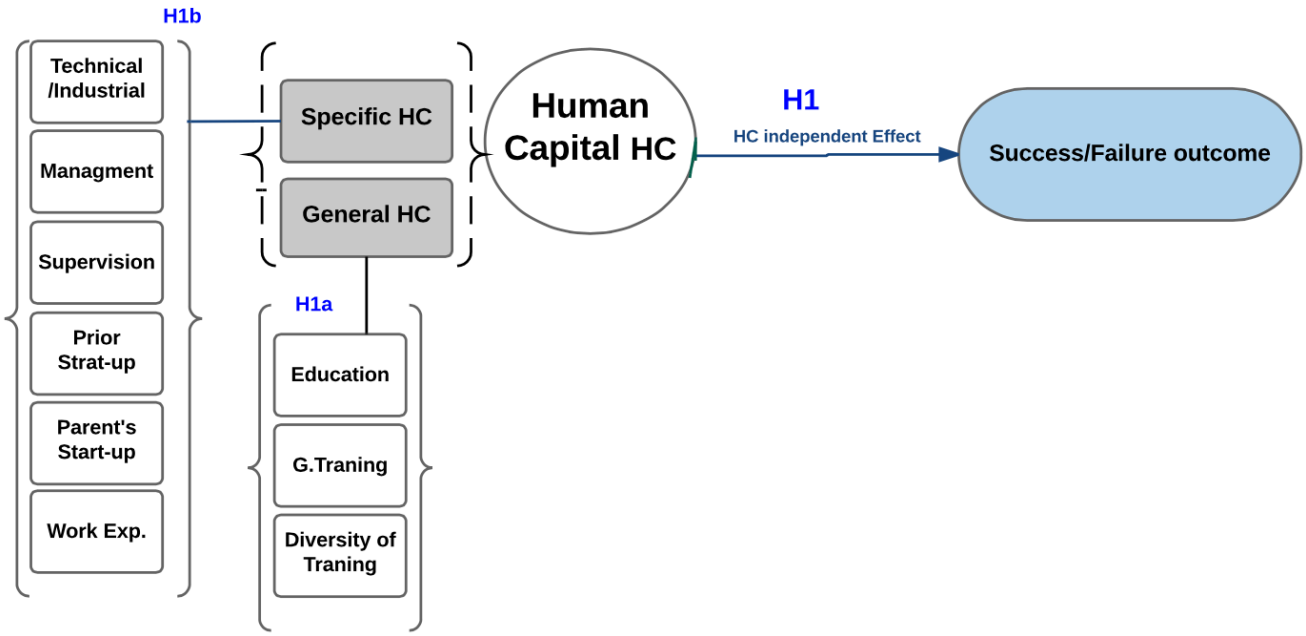
entrepreneurship (i.e. Reynolds, 1997; Delmar and Davidsson, 2000; Van Gelderen et al., 2001; Delmar and Shane, 2004; Reynolds et al., 2004), identify means-end relationships, discover entrepreneurial opportunities (Shane and Venkataraman, 2000; Davidsson and Honig, 2003; Ucbasaran et al., 2008) and pursue them successfully (Delmar and Davidsson, 2000). Human capital then became one of the most researched success factors in Nascent Entrepreneurship (i.e. Rotefoss and Kolvereid, 2005; Honig et al., 2006; Samuelsson and Davidsson, 2009; Hmieleski et al., 2015), acting as a primary stream of entrepreneurial research where researchers solicit to explain Nascent Entrepreneurship success factors by referencing the differences in entrepreneurs' prior knowledge in specific and general forms (Davidsson and Honig, 2003; Shane 2003; Rauch et al., 2005; Unger et al., 2009; Ramos-Rodríguez et al., 2011; Dimov,2017).

Research argued that the productive and efficient behaviour of nascent entrepreneurs is a function of their knowledge base which was identified as a significant predictor in influencing their ability to conceive and enact opportunities (Shane 2000; Davidsson and Honig, 2003; Brixy and Hessels, 2010), derive performance (Bosma et al., 2004), organise resources (Deakins and Whittam, 2000; Brixy and Hessels, 2010), improve alertness (Shane 2000; Westhead et al., 2005), generate new ideas and innovations (Shane 2000; Deakins and Whittam, 2000; Davidsson and Honig, 2003; Wagner, 2004; Venkataraman, 1997; Mueller 2006; Kim et al., 2007), participate in the start-up process (Robinson and Sexton, 1994; Bates, 1995; Davidsson and Honig, 2003; Wagner, 2004; Davidsson, 2006; Kim et al., 2006), facilitate the constraints in raising financial capital (Zacharakis and Meyer, 2000; Parker and Van Praag, 2006; Chatterji, 2009), compensate and/or complement for deficiencies in other forms of start-up capitals (Chandler and Hanks, 1998), reduce ambiguity and manage decision-making - particularly in situations of uncertainty which characterise entrepreneurship - and should thus lead to success (Ucbasaran et al., 2008).

Human capital in its mere form appears to represent a symbolic capital (Bourdieu, 1990) that plays a role in attaining legitimacy reputation, signaling qualifications and deploying initial stock of knowledge (Becker, 1964). Entrepreneurship scholars in the context of new venture creation viewed human capital as an instrumental means that accelerates the pace of the founding process at the pre-startup stage and improves subsequent productivity (Stuart and Abetti, 1988; Vesper, 1990; Mosakowski, 1993; Cooper and Gimenoo-Gascon, 1994; Cooper, Gimenoo-Gascon and Woo, 1994; Brush, Greene and Hart, 2001). Human capital theory posits that human capital acts as a crucial starting point that enables individuals to accumulate knowledge that in turn facilitates the acquisition of distinct competencies and the successful integration with other forms of resources (Weick, 1996). Here, and as presented in Figure (3.2), we capitalise on the notion that human

capital in its general and tacit forms incorporate the knowledge, skills and information that should aid nascent entrepreneurs in laying the groundwork for the initial stages of business venturing (Davidsson and Honig, 2003; Gorton, 2012). This argument is confirmed in Unger et al.'s (2011) comprehensive meta-analysis that was performed to assess the relationship between human capital and outcomes in entrepreneurship. The study concluded that entrepreneurs who are endowed with higher human capital tend to attain positive outcomes.

Figure 3.2: Human Capital Linear Model



The next subsections, present the differential effects of general and specific forms of human capitals that are acknowledged as proxies for the [HC] measure (Reuber and Fischer, 1994; Davidsson and Honig, 2003). The selection and the operationalisation of [HC] measures are presented in Chapter 4.

3.2.1.1 General Human Capital

The general form of [HC] is described as a codified formal, generic, structured explicit knowledge (Know-What) (Alan et al., 2008) that can be transferred and mobilised into different business contexts (Diochon and Menzies, 2008; Yang and Farn, 2009). Generally, it is considered a prime factor that enables individuals to accumulate and integrate different attributes that relate to other forms of start-up capital.

[HC]- Education

Education is a key type of human capital where venture capitalists assess nascent entrepreneurs' potential for success and their innate productivity by screening their qualifications in order to assess the distinct levels of intelligence, motivation, determination, curiosity and discipline (Schultz, 1993; Ucbasaran et al., 2007) that prove to be of more importance for founding nascent ventures under unpredictable conditions present in the business creation context—an environment in which established standards for success do not exist (Kim et al., 2006; Zaleski, 2011; Hmieleski et al., 2015). Shane (2003) contends that knowledge and motivation are a function of the education system that allows entrepreneurs to secure legitimacy for the business and improve social networks and resource mobility (Schenkel et al., 2012; Sequeira and Rasheed, 2006). Education is one of the most cited indicators of general human capital (Bruderl et al., 1992; Parker and Van Praag, 2006). It not only allows entrepreneurs to attain knowledge, but also develops their capacity to solve problems, analyse information and accumulate knowledge (Cooper et al., 1994; Davidsson and Honig 2003). Generally, nascent entrepreneurs who are endowed with higher education tend to develop higher mental capacity that in turn increases their innate capacity and efficacy in executing a broad range of start-up activities (Gupta and York, 2008). Education, according to Spences' (1974) theory of signaling, is viewed as a mean that signals entrepreneurs' innate productivity to venture capitalists and stakeholders in a way that enables them to assess their expected potential, and screen their ability to overcome complex and unpredictable situations. Education, in this sense, is theorised as a reflection of nascent entrepreneurs' distinct levels of intelligence, motivation and discipline.

In addition, general knowledge facilitates access to monetary resources (Coleman, 2000; Brush et al., 2001a; Greene et al., 2003) and under certain circumstances complement or compensate for the absence of other forms of resources (Evans and Leighton, 1989b; Honig, 1998). Research continues to assert that general forms of knowledge have connection with individuals' social mobility and can, therefore, stimulate a broad range of competencies by tapping into social networks with comparable identities (Bowles and Gintis, 2002). Howell and Wolff (1991) postulated that the attainment of education encompasses a broad range of skills that has a correlation with social and cognitive interactions. This agrees with McMahon's (1998) notion that views formal education as a mechanism that facilitates timely acquisition of skills and learning. Therefore, its enduring competencies can be applied to resolve entrepreneurial issues of a similar nature under a wide range of conditions (Sequeira and Rasheed, 2006; Schenkel, et al., 2012).

At an empirical level, 'education and entrepreneurial success have not always been clearly linked' (Schenkel et al., 2012). Some empirical evidence indicated that the contribution of general [HC] to the success in setting up new ventures tends to be associated with less discernible effects (Davidsson and Honig, 2003; Van der Sluis et al., 2004; 2005; Brixy and Hessels, 2010; Davidsson and Gordon, 2011b). While other empirical studies indicated that there is a positive link between venture creation and lower levels of education (Kim et al., 2006; Cetindamar et al., 2012). These contradictory findings revealed a notable contradiction with the prevailing assumption that entrepreneurship is nurtured by the actions of individuals who attain advanced education (Dickson et al., 2008). Other studies attributed the lack of empirical significance to the opportunity cost associated with education (Davidsson and Gordon, 2009). It has been argued that formal education may inculcate attitudes antithetical to entrepreneurship (Ucbasaran, 2007) where higher levels of education may introduce biases that limit individuals' appetites for uncertainty and risk taking that in turn result in bounded thinking and conformity behaviour that obscures free thinking, leading to unfavourable outcomes (Ronstadt, 1984). This notion was evident in Diochon and Menziess' (2008) study in which it is interesting to note that the group of nascent entrepreneurs reporting the highest level of education and most work experience were those who started but later abandoned their ventures.

Therefore, empirical investigation is still deemed necessary to determine the underlying causes of exit decisions, which is beyond the scope of the present analysis. This is not to suggest that education is not useful. Generally, a higher endowment of education is hypothesised as a significant factor that increases the likelihood of success in launching a new venture (Delmar and Davidsson 2000; Cassar, 2006). In this sense, the proposed model posits that a higher endowment of education is considered as a key driver for the development of cross functional competencies that expand as nascent entrepreneurs engage in different courses of action (Lynch, 1994). General human capital acts as a stimulating agent for the evolvement of entrepreneurial informed judgement. In effect, this form of capital provides a platform of dynamic knowledge that aids nascent entrepreneurs in extending and updating their beliefs about the potential of the opportunity and if circumstances favour the process of founding. Indeed, 'nascent entrepreneurs with sufficient conviction of the merits of opportunity can feel compelled to persist in their venturing process towards business emergence' (Dimov, 2010, p. 21) that leads to increases in their persistence level to found the business (Delmar and Davidsson, 2000) as they engage in gradual replacement of intuition with informed guesses (Dimov, 2010, p. 23).

Similarly, Dimov (2010) argued that knowledge 'facilitates quick detection of early warning signals, which allows efficient management of early challenges or to realise that their skills are ill suited for these tasks' (p.1145). Consequently, informed judgement may not necessarily result in new venture emergence and instead may lead to abandoning the established entrepreneurial efforts to avoid a false positive.

Obviously, empirical findings are uncertain and lack consistency with un-generalisable patterns, and there is no clear evidence yet found of a relationship between education and the propensity of launching a new venture (Davidsson and Honig 2003; Blanchflower 2004; Parker, 2004; Kim et al., 2007), which is one of the tested foci of this study.

[HC]-General Training and Diversity

The broadness of general training is another proxy for the general form of human capital defined as '[t]he amount of diversity or variety in human capital available to an individual' (Brixy and Hessels, 2010, p.7). This variable should not be confused with the diversity attained by switching into different jobs, as this is not recognised in management studies as a reliable proxy for broadness or depth of knowledge, and therefore can potentially be associated with negative effects in explaining entrepreneurial behaviours. The bulk of the research in the entrepreneurship education area has concentrated on occupational and entrepreneurship training leaving a gap in the literature by overlooking the broadness and depth of general knowledge accumulated by enterprising individuals. Thus, a call for more rigorous studies was placed to bridge this gap and inform the ongoing debate that continues to question the relevance of human capital to entrepreneurial success but from a diversity perspective.

The present study accounts for the cumulative nature of general knowledge and its breadth in order to inform human capital theorisation in the context of business launching. The model suggests that the nature of diversity makes nascent entrepreneurs more inclined to pursue success as they look for compensation for their investment in diverse knowledge (Becker 1964; Unger et al., 2009). Following Hayton and Zahra (2005), the proposed model posits that nascent entrepreneurs with a broader mindset should be more capable to rate new information on their practicality, and relevance and have the ability to incorporate emerging entrepreneurial knowledge more easily into their existing knowledge base. Diversity in general knowledge equips nascent entrepreneurs with the fundamentals and high-level exposure that allows them to establish a holistic view of the market opportunities open to them, promotes an active engagement in generic

tasks and routines, enables them to increases their reach and level of fitness within social and business networks, and encourages the collaborative learning that enhances nascent entrepreneurs' productivity and adaptability. The central assumption here is that it is not human capital in its absolute form that creates value but rather the heterogeneity of knowledge that distinguishes credentials from competencies (Unger et al., 2011) allowing nascent entrepreneurs to make optimal choices that maximise their potential of attaining success.

It is assumed that entrepreneurs with distinct human capital should attain higher capacity, which in turn enables them to tap into a broad range of capital's attributes (Cohen and Levinthal, 1990). In essence, a 'broader scope of knowledge fosters a deeper understanding of task issues which in turn facilitates problem-solving, decision-making and generation of ideas that enriches comprehensiveness' (Weisz et al., 2010, p. 43). According to the endowment hypothesis, the breadth of skill is an essential element fostering the development of nascent entrepreneurs' capacity that aid them in making sensible choices as well as utilising and interpreting information in the most optimised way that enables them to accumulate and integrate new information efficiently into their existing stock of knowledge, leading to positive outcomes (Hayton and Zahra, 2005). This agrees with Taylor and Greve's (2006) suggestion that higher endowment of diverse knowledge generates new knowledge combinations that maximise the propensity to attain success in the business launching process (Alvarez, Barney and Anderson, 2013). Moreover, existing studies on the jack-of-all-trades view of entrepreneurship primarily focus on entrepreneurship diversity and from an occupational choice perspective, a high correlation has been found between the selection of entrepreneurship as occupational choice and the breadth of knowledge (i.e. Lazear, 2005; Silva, 2007). No known studies have investigated the implications of jack-of-all-trades theory on progress measures and performance at the nascent stage of entrepreneurship which is the focus of this empirical study.

The model emphasises the notion that the exploitation process may result in unique circumstances that do not relate to the existing rules and conditions in the market and industry. This necessitates the utilisation of disparate mindsets that enable entrepreneurs to interpret signals from diverse environments in order to extend and combine existing knowledge into a new, diverse, and relevant knowledge with unique combinations (Garud and Karnoe, 2003; Taylor and Greve, 2006) that in return enable them to develop a deeper understanding of their social and economic context, particularly at the early stage of the entrepreneurial career, where entrepreneurial competencies are immature.

Based on the aforementioned review, we hypothesise that formal human capital as indicated by general education and training tends to have a positive and significant effect on the success of Nascent Entrepreneurship.

H1a: General Human Capital has a significant (+) prediction on the outcome of new venture creation process.

3.2.1.2 Practical (specific) Human Capital

Specific human capital [HC] is defined as the practical knowledge and skills that provide the necessary prescience that can be employed in starting a new venture (see Carter et al., 2003a; Cliff et al., 2006; Gatewood et al., 2009). Huges et al. (2016, p. 92) defined it as 'specific knowledge skills that are less transferable and have narrower scope of applicability', while Klyver et al. (2013) referred to it as '[t]he knowledge and capacity within individuals to perform certain tasks'. Specific human capital is viewed as intangible assets that embody knowledge and skills on the basis of talent, previous action, routine and practical experience, acting as a platform that enables entrepreneurs to access specific resources, promote self-efficacy, preserve persistence and become proficient at taking venturing decisions. According to Agarwal et al. (2004, P. 504), individuals who are endowed with prior experiences tend to 'possess unique and idiosyncratic information that enables them to discover potential opportunities ahead of others'. It is therefore regarded as a competitive advantage, as tasks of an entrepreneurial nature are highly dependent on knowledge of a tacit nature (Paul and White, 1997; Berman et al., 2002; Yang and Farn, 2009; Mai and Gu, 2012). Research shows that practical aspects of knowledge increase the stamina required to navigate the start-up process deal with uncertainties (Dimov, 2010), and integrate and coordinate complementary context-specific knowledge dispersed throughout different resources (Colombo and Grilli, 2010) with increased appetite for experimentation (Alvarez et al., 2012). Smith (2001, p. 2) argued that 'the ultimate challenge is to move beyond knowledge to wisdom, or intuitions based on experience'.

On the basis of human capital theory, the utilisation of prior knowledge appears to vary across individuals, and this is only because individuals, in reality, are endowed with varying experiences that affect entrepreneurial judgement, learning (Cassar, 2014), selection of business venturing strategies and mobilisation of resources (Becker, 1964; Halpern, 2005; Baron, 2007; Baluku et al., 2016). According to Van Auken (2005), Mueller (2006) and Seghers et al. (2012), the significance of work experience lies in its potential to complement formal human capital's attributes, leveraging entrepreneurs' ability to attain productive skills and form resource acquisition strategies

that facilitate the successful launching of new ventures. Research has shown that specific experiences might be most beneficial at the pre-startup phase of entrepreneurship (Robinson and Sexton, 1994; Bates, 1995; Gimeno et al., 1997; Dimov, 2017). According to Hormiga et al. (2010), many authors (i.e. Stuart and Abetti 1990; Storey 1994; Bosma et al., 2004; Rauch et al., 2005; Dimov, 2010) have distinguished the performance of new ventures based on their past experiences, and argued that specific experiences enable them to learn and equip them with a dynamic knowledge that allows them to pursue future entrepreneurial undertakings (Corbett, 2005; Hormiga et al., 2010). Similarly, industry-specific experience was found to be a significant predictor of entrepreneurial survival (Baptista et al., 2014), start-up success (Bruderl and Preisendorfer, 1998; Bruderl et al., 1992; Reynolds 1993; Bates and Servon 2000; Lerner and Almor 2002; Bosma et al., 2004; Reynolds, 2007; Brixt et al., 2008; Brixy and Hessels, 2010; Davidsson and Gordon, 2011b; Santarelli, and Tran 2012), successful exploitation of entrepreneurial opportunities (Davidsson and Honig, 2003), selection of entrepreneurship (Kim et al., 2007), and success in launching new ventures (Van Gelderen et al., 2001; Wagner, 2005; Brixy and Hessels, 2010).

Despite the importance of [HC] specific knowledge, some studies have indicated that work experience does not act as a significant predictor for modelling new venture success (Cooper et al., 1988; Davidsson and Honig, 2003; Davidsson and Gordon, 2009). Mai and Gu (2012) attributed the lack of significance to 'on-the-job embeddedness' that appears to produce adverse effects due to the density of attachment and strength of connection with former specific experiences that can obscure entrepreneurial free thinking. In addition, Bhide, (2000) argued that the dynamics and rapid changes and developments encountered by some industries could turn specific experience into a limiting factor. Research implies that specific human capital in the form of specific experiences act as one of the core factors in entrepreneurial success (Dimov, 2017), and justify this notion by suggesting that venture capitalists generally assign a high magnitude of importance in their selection criterion to practical experiences of potential entrepreneurs that in their view signal the expected potential of new venture in the launching process (Stuart and Abetti, 1990; Zacharakis and Meyer, 2000).

The management literature in this line of reasoning has stressed education as one of the key elements of human capital, while supporting the concept that nascent entrepreneurs often stand out because of their intuition, practical experiences and skills (Murphy et al., 1991; Casson 1992; Leazar, 2002). From a social perspective, specific human capital appears to empower

entrepreneurs with the social intelligence that enables them to access diverse business and social networks, which in turn allows them to draw upon the abilities of other social actors (Nahapiet and Ghoshal, 1998; Almeida and Kogut, 1999; Brixy and Hessels, 2010).

Although formal education systems and training provide nascent entrepreneurs with the building blocks for entrepreneurialism, they are not encouraged to try and nurture their skillset through education alone (Casson, 1992; Cited in Mills, 2001). In other words, while formal knowledge is more likely to provide individuals with abstract information and skills, domain specific human capital appears to outweigh the general effect of knowledge by providing specific experiences and skills that can be more relevant to the context of Nascent Entrepreneurship (Cohen and Levinthal 1990; Ucbasaran et al., 2007).

Human capital driven by practical and specific expertise seems to create unique areas of knowledge that can be mobilised in relevant contexts by extracting meanings, identifying patterns and interpreting information intuitively (Lee, 2000). Despite the empirical evidence found in the entrepreneurship literature that showed inconsistent outcomes with regard to the relationship between entrepreneurship performance and the specificity of human capital (Delmar and Shane, 2006; Unger et al., 2011), an increasing number of researchers argue that specific experiences tend to have a more consistent impact on and relevance to new venture success compared with general forms of knowledge (i.e. Bruderl et al., 1996, Kor, 2003; Corbett, 2005; Dimov, 2010; Alvarez et al., 2012). This supports human capital theory that assumes that individuals who are engaged in tasks that relate to their prior knowledge have a higher propensity to attain success (Becker 1964). After all, knowledge in its general form, no matter how sophisticated, still needs to be integrated with practical talent to overcome the pitfalls inherent in the process of creating new ventures (Shane 2003) which makes entrepreneurs less inclined to the process of analysing, collecting and interpreting information (Forbes 2005).

For example, this was clearly evident in the notion that managerial experience has a positive impact on entrepreneurship (Bruderl et al., 1992; Colombo et al., 2004) despite the empirical argument that the relationship between managerial experience and entrepreneurship is equivocal and mixed (Bosma et al., 2004; Wagner, 2006; Parker, 2009; Santarelli and Tran, 2012). This assertion seems to agree with Parker (2009, p. 485), who stated that 'of all job grades, managers will have the greatest exposure to work experience which spans diverse tasks'. Mills (2001) and Mueller (2006) also argued that individuals with managerial specific experience are knowledgeable individuals who are familiar with procedural routines and equipped with

organisational skills that enable them to engage in entrepreneurship and cope with new challenges (Van Praag, 2005; Santarelli, and Tran 2012). However, the relevance of managerial experience will depend on the extent of prior levels of autonomy, discretion and control (Hopp, 2012). As such, managerial experience might be less beneficial in founding new ventures with complex systems and routinised procedures, while still applying to small start-ups with simple structures that can be decoded to a variety of skills in different contexts that maximise the chances of entrepreneurial success (Bosma et al*.,* 2004; Wagner, 2006; Santarelli, and Tran 2012). Parker (2009) posited that work experience in parents' firm, as opposed to working in an established setting, facilitates the efficient exchange of experiences and competencies that enables them to interact freely as active, enthusiastic, outgoing and energetic individuals, and engage in a variety of tasks that aid them in attaining the necessary balance that eventually maximises their chance of success.

As with prior start-up experience, research has posited that it nurtures the nascent entrepreneur with learning that aids the reaching of the many milestones which founding a new venture entails (Van Gelderen et al., 2006). Indeed, the unique experience attained through prior start-up experience furnishes entrepreneurs with authoritative personality, reputation, legitimacy, credibility, a relational base and a capacity to accurately realise and respond to the interdependencies in the business realm (Delmar and Shane, 2004; Nanyang and Uhlenbruck, 2006). But, surprisingly, some empirical results (i.e. Diochon and Menzies, 2008) indicate its limited predictive effect in explaining the success in launching a new venture, where individuals develop working styles and habits that hinder their ability to adapt to the new and emerging entrepreneurial settings. After all, prior entrepreneurship experience can be viewed as a reference framework that guides the decisions of enterprising individuals in their start-up quest, mitigating the liability of the newness effect that usually obscures entrepreneurs' ability to deal with unfamiliar contexts (Davidsson, 2002). Based on the above, the following hypothesis was formed:

H1b: Specific human capital has a significant (+) prediction on the outcome of new venture creation process

And based on (H1a, b), presented in the preceding sections the following hypothesis is also advanced:

H1: Human capital has a significant (+) prediction on the outcome of new venture creation process

3.2.2 Social Capital [SC] Linear Model and New Venture Creation

Social capital is essentially a requisite skill for venture creation, one in which entrepreneurs need to invest heavily to bring their founding efforts to fruition (Larson and Star, 1993). Social capital is presented in the new venture creation literature as 'centrally concerned with the significance of relationships as a resource of action [where] the exploitation of entrepreneurial opportunity is often a development process and socially constructed in nature' (Schenkel et al., 2012, p. 6). Social capital that entrepreneurs possess or acquire in the process of new venture emergence is widely recognised as a driver of entrepreneurship (i.e. Birley, 1985; Aldrich and Zimmer, 1986; Johannisson, 1988; Anderson and Miller, 2002; Davidsson and Honig, 2003; Aldrich and Martinez, 2003; Audretsch and Keilbach 2004; Bennet and Richardson, 2005; Mueller, 2006; Shaw et al., 2008; Pirolo and Presutti, 2010; Doh and Zolnik, 2011). Previous research confirmed that nascent entrepreneurs tend to draw greatly upon their social connections during the pre-startup stage as well as the early years of business development (Greve and Salaff 2003; Davidsson and Honig, 2003; Sappleton, 2009). Similarly, organisational theorists emphasised the importance of social capital to new venture creation (Nahapiet and Ghoshal, 1998; Tsai and Ghoshal, 1998; Adler and Kwon, 2002; Baron and Markman, 2003; Liao and Welsch, 2005; De Carolis and Saparito, 2006) and suggested that investing in social resources maximises the probability of attaining success in entrepreneurship (Kim and Aldrich in particular, 2005; De Carlois et. al., 2009; Bhagavatula et al., 2010). The stated relationship accords with McCline and Bhat's (2012, p. 51) statement that 'understanding more completely the process of venture creation requires that we go beyond the individuals and consider the social context in which entrepreneurs develop their efforts'.

New venture creation in the context of Nascent Entrepreneurship is viewed as a social process, which is 'strongly influenced by socially embedded patterns of association' (Weisz et al., 2010, p. 45). Research argues that the process of creating new ventures commences in effect by tapping into social capital (Johannisson 1995; Greve and Salaff 2003; Hoang and Antoncic, 2003; Davidsson and Honig 2003; Gedajlovic et al., 2013) in order to offset deficiencies that relate to other forms of capital (Coleman, 1988). For example, Johannisson et al. (2002) used a social-embeddedness framework to highlight the value of interpersonal relations for new ventures by exploring the role of the multi-dimensional network model in producing viable social benefits. Today, the conceptual constructs of social capital and related complex interactions that take place within networks present themselves and their (metaphorical) use as instrumental and symbolic

elements that are meant to improve our understanding of why and how new venture creation is enacted and practiced in reality within a coordinated context (Johannisson and Olaison, 2007). Social context appears to play an important role in the process of business creation in a way that facilitates collective action that reduces the transition costs associated with business negotiations, and acquisition of resources (Aldrich et al., 1991). According to Coleman (1988) and Putnam et al. (1993), communities are associated with 'authoritative capacity' that provide an efficient platform where social mechanisms play an essential role in the actualisation of entrepreneurial activities within a coordinated context and in reference to common social norms, obligations and values (Bachmann and Zaheer, 2006). Social capital in this sense is a symbolic capital that entrepreneurs rely upon to obtain a variety of benefits such as: obtaining resources, securing higher status within the community (Bates 1997; Anderson and Miller, 2002), gaining credibility (Bosma et al., 2004), establishing reputation (Santarelli and Tran, 2012), accessing innovations (Nahapiet and Ghoshal, 1998; Macke and Dilly 2010), detecting opportunities (Davidsson and Honig 2003; Ramos-Rodriguez et al., 2010; Doh and Zolnik, 2011), maintaining persistence (Gabbay and Leenders, 1999), self-reassurance and reinforcement (Lin, 1999), getting advice, obtaining formal and informal financial capital (Davidsson and Honig 2003; Coleman, 2000; Begley and Tan, 2001; Carter et al., 2003), management of interrelations with the supply chain (Coleman, 1988; Lovett et al., 1999; Landry et al., 2002), sharing of risks (Macke and Dilly, 2010), work commitment (Davidsson and Honig, 2003), accumulation of human capital (Knack and Keefer, 1997), dissemination of mutual knowledge and recognition (Bourdieu, 1985) and enhancement of reciprocity and solidarity within the business community (Woolcock and Narayan, 2000).

All these benefits appear to maximise the propensity of entrepreneurial success (Coulthard et al., 2001). As suggested by Akrich et al. (2002, p. 204), the attainment of success is closely related to entrepreneurs' ability to master the 'art of interessement' in order to commercialise the opportunity via social networks that 'take it up, support it, and diffuse it'. Hoang and Antoncic (2003) presented an overview of the different social approaches that nascent entrepreneurs utilise to aid them in creating new ventures on the basis of accessibility for reputational and signaling content. Social networks in this sense function as a conduit for social interrelations that provide physical and emotional support which in turn enable nascent entrepreneurs to tap into a variety of resources that maximise their persistence and level of commitment in their gestation efforts (Daviddsson and Honig, 2003; Gedajlovic et al., 2013).

From another perspective, Klyver et al. (2011) suggested that the study of the nexus between new

venture creation and social network had been driven by a rational approach that revolves around four assumptions, namely: 'individuals are purposeful actors; networks are selected; relationships are specific; the business sphere is isolated from other life domains' (p. 152). They argued that these assumptions might not be valid as entrepreneurs, in reality, are constrained by bounded rationality. They proffered as an alternative that other balanced and less biased assumptions were required to obtain dispassionate and meaningful findings that explain the connection between social capital and new venture creation. They, therefore, proposed another set of assumptions that question the validity of the former conventions. They suggested that social associations take place by accounting for the present and past history. In reality, past experiences impose limits in making social choices and dictate the nature and the breadth of relations that individuals can tap into. Individuals are not 'purposeful actors' as socialisation appears to be in some cases accidental, serving the nature of humans and their social and psychological needs to stay connected through social associations; relationships are diffuse; and the business sphere is embedded in social heritage, owing to social obligations and common norms that can interfere with individuals' willingness and free choice. Therefore, the connection between social capital and new venture creation is established on the basis of this new assumption, concluding that the 'various dimensions of social capital are not mutually exclusive and in fact may be highly interrelated' (Liao and Welsch, 2005, p. 347).

Both Gartner et al. (2003) and Steyaert (2004) viewed new venture creation as a function of social creativity. Based on this notion, Johannisson and Olaison (2007) associated entrepreneurship with imaginative ways that reflect how enterprising individuals deal with the ambiguities and uncertainties surrounding the early stages of business establishment, indicating that 'entrepreneurship is approached as a societal phenomenon practicing creative organising […] in the sense that the negotiation of a shared reality is generic a socially constructed world of becoming the practice of entrepreneurship concerns coping with ambiguity' (p.). Johannisson and Olaison (2007) viewed the intersection between entrepreneurship and social capital based on broad images that reflect how specific qualities of social capital and entrepreneurship are established. This rests on the interaction between individual and societal aspects, describing alternative manifestations of entrepreneurship and how social capital portrays itself in these images. For example, according to the 'enactive' image, all individuals in all societies possess generic entrepreneurial abilities. These capabilities are enacted in different social settings, and this differentiates the experiences of entrepreneurs as they come into contact with the actual conditions of business venturing (Baumol, 1990). The success or failure of a venture appears to crystallise out

of social contexts, and here Johannisson (2000) described the function of social context and related relations ‘as much existentially as instrumentally defined, practiced as much for crafting individual and collective identity as for actualising new undertakings’ (Johannisson and Olaison, 2007).

New venture creation and social capital can, therefore, be addressed in different ways where it is not logical to recognise a generic pattern where ‘one size fits all’. Alternatively, Steyaert and Hjorth (2003) suggested accepting the implications of the notion that not only is there no one entrepreneurship but that there are multiple entrepreneurships, where different social settings, interactions and complexities intervene in the process of forming new ventures. This interaction with [SC] model is a central focus of the present study as presented in later sections.

3.2.2.1 Social Capital [SC] Linear Model

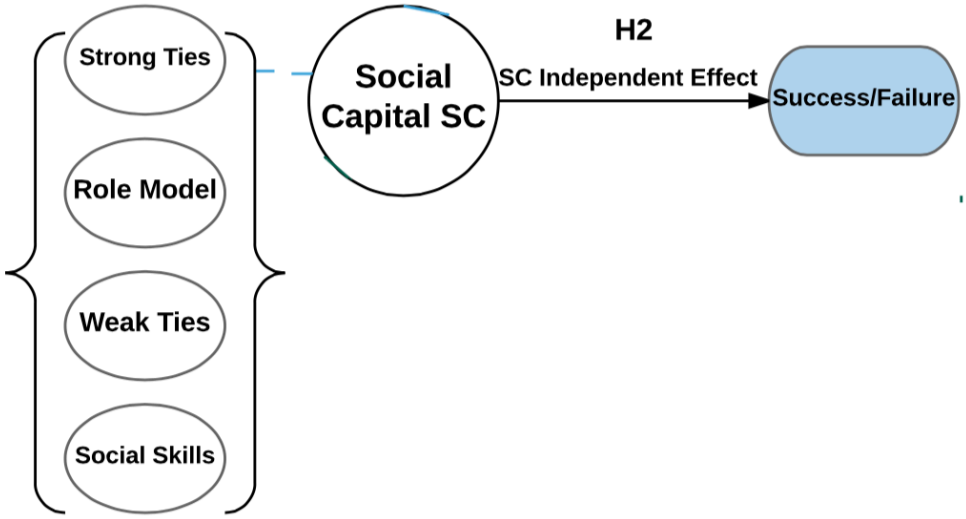
Following Granovetter’s (1973) approach, the social capital model presented in this thesis (see Figure 3.3), focused on different social aspects that are discussed in existing Literature. Entrepreneurship researchers focused their attention on the nature of relations that individuals draw upon during their business-venturing attempt (i.e. Davidsson and Honig, 2003; Jack, 2005; Parker and Belghitar, 2006; Bhagavatula et al., 2010; Santarelli and Tran, 2012). According to Currans (1986), there seems to be scant evidence suggesting that enterprising individuals capitalise on the skills and resources of their close social ties, despite the notable debate in the entrepreneurship literature revolving around the primacy of social ties and their utility to entrepreneurs (Burt 2009; Wang and Altinay 2012; Hmieleski et al., 2015). Research has posited that nascent entrepreneurs who have access to self-employed parents, relatives or friends are more than twice as likely to become successful nascent entrepreneurs (Aldrich and Yang, 2013).

However, there is no absolute agreement as to whether having parents or friends with entrepreneurship ownership experience influences the probability of launching a new venture (Parker and Belghitar, 2006). This has led research to focus on social networks and their influence on the acquisition and management of resources and information (Watson 2012; Bird and Wennberg, 2013; Saridakis et al., 2013). In general, there is increasing recognition of the prevalence of strong ties as a central element in theorising the exploitation phase of business venturing, specifically at the early stage of business development that arguably appear to supersede the drawbacks associated with social embeddedness (Hmieleski et al., 2015). It is important to emphasise that strong ties in the linear form (i.e. parents, family members, close friends) are highly trusted relationships that are recognised as a fundamental source of social support (Jack, 2005;

Evald et al., 2006; Mueller and McGee, 2007; Hmieleski et al, 2015), resources (Leung, 2003), reliable information (Krackhardt, 1992), trust, and informal capital (Slavec and Prodan, 2012). As suggested by Hmieleski et al. (2015), social consistency and cohesion provide entrepreneurs with comparatively broad benefits in the context of venture creation that encourage cooperative thinking and collective capacity on the basis of trust, common values and mutual interests (see also Aldrich and Zimmer, 1986; Coleman, 1990; Krackhardt, 1992). This, in turn, facilitates the timely exchange of resources within a coherent, trusted and coordinated social context that aid entrepreneurs in overcoming the challenges associated with the process of new venture creation. Similarly, Lowik et al. (2012) have argued that social relations based on strong ties appear to act as an interactive platform for exchanging complex knowledge, specific experiences, and tacit skills that reduce the transaction costs for accessing resources.

Nascent entrepreneurs who draw on social relations connected by strong ties (Davidsson and Honig, 2003) and the presence of role models (Davidsson, 2004; Wagner, 2004; 2005) report a high pace of gestation activity that brings determination, persistence, encouragement and emotional stability to their endeavour. Role models are generally accessed via family networks, providing access to close members who are endowed with self-employment or work experience in independent start-ups. Role models appear to increase the founders' propensity to launch new ventures (Rice and Aydin 1991; Dunn and Holtz-Eakin, 2000; Davidsson and Honig, 2003; Davidsson, 2004; Parker and Belghitar, 2006; Mabunda et al., 2015). This confirms the influence of the entrepreneurial role models in leveraging the rate of new venture formation (Justo and Diaz, 2012).

Figure 3.3: Social Capital linear Model



As for social capital driven by weak ties, the literature theorised the criticality of social actors embedded in formal business networks that allow entrepreneurs to access distant social actors, dispersed and novel information (Granovetter, 1973; Coleman, 1988; Elfring and Hulsink, 2003; Baron, 2006; Dodgson, 2011) as well as diverse resources (Lin, 2001) that appear to reduce the biases associated with social conformity behaviour linked to common norms and practices that are usually shared among actors who belong to closed social networks (Coleman, 1988; Burt, 1992). Previous results generated by management studies from observing the performance of new ventures (i.e. Granovetter, 1973; Fukuyama, 1995; Davidsson and Honig, 2003; Santarelli and Tran, 2012) asserted that the benefits associated with weak ties outweigh those from strong tie-based relationships. However, this argument appears to be appealing for technology-intensive ventures that seem to rely on weak ties to access the expertise, technology and specialised resources that are needed to sustain the new venture's creation momentum. Accordingly, the literature remains inconsistent with its findings, and more biased towards the notion that weak ties tend to outweigh the role of strong ties at mature stages of business growth and development. On the other hand, the literature also argued that weak ties tend to show limited effects during the early stages of business development (Hmieleski et al*.,* 2015).

In the context of new venture creation, weak ties are generally not believed to be as important as strong ties due to their limitations in providing reliable information on a timely basis (Evald et al., 2006). Some authors attributed their lack of relevance to the dynamics of the entrepreneurial environment, particularly at early stages of development, putting greater emphasis on experimentation and learning (Weick, 1993) rather than the reliance on weak ties. Dodgson (2011) and Hmieleski et al. (2015) further suggested that investing in heterogeneous networks driven by weak ties might expose entrepreneurs to the risk of a conflicting signals, different assumptions and expectations that result in inefficiencies, impeding the progress of the exploitation process. Clearly, there are debatable notions and mixed outcomes that limit the differentiation of the predictive power of different forms of social ties and role models and their contribution to entrepreneurship success (Rowley et al., 2000). This promoted Hoang and Antoncic (2003) to adopt a contingency approach that recognise the contribution of strong and weak ties in the static versus integrative context in order to assess their effects on the business formation success.

Another major factor considered in this model is the social skills that are described as the 'ability to understand and manage […] to act wisely in human relations' (Heggestad, 2008, p. 228). In the entrepreneurship literature, social skills are perceived as a discernment factor that facilitates the

success of new ventures at the early stage of establishment (Cogliser et al., 2012). Keeping in mind the end goal to establish an enterprise, the vision of the founder needs to consider effective collaboration with a large spectrum of social actors within and beyond immediate social networks and this entails the acquisition and management of social skills that enable individuals to become more flexible and adaptable to the emerging circumstances of new venture creation. Baron and Markman (2003) identified two social skills that empirically support new ventures. The study, therefore, explores how nascent entrepreneurs engage social skills to facilitate exchanges, network and negotiation, which helps them to form meanings aligned with their cognitions. Some studies have suggested that social skills are reflected in persuasion and other influence mechanisms as a method of controlling others' actions, and reflect entrepreneurs' capacity and knowledge of what to do and when to display appropriate or expected behaviours (Baron, 2000). However, little is known about which social skills explain the success or failure of new ventures (Ferris et al., 2002). Indeed, initiating a new venture entails founders interacting with a great deal of stakeholders and must, therefore, possess a competency for social flexibility as well as a social discernment that enhances their sense making and overall understanding of the venturing situation (Baron and Markman, 2003).

In light of the preceding discussion about [SC] model and its constituting variables, the following hypothesis regarding the main effect of social capital is proposed:

H2: Social capital has significant (+) prediction on the outcome of new venture creation process

3.2.3 Cognitive Capital [CC] linear Model and New Venture Creation

Cognitive behaviours have been associated with innovative and creative actions (Sweetman et al., 2011). The incorporation of cognitive capital comes in alignment with Hmieleski et al.'s (2015, p. 296) approach, which presented three key justifications of cognitive capital in the context of new venture creation. These reasons are described as 'the differences in the level of situational strength; the degree to which there is a need to respond to unpredicted events; the amount of confidence and trust that must be conveyed and developed with key stakeholders'. According to Hmieleski et al. (2015), founding entrepreneurial ventures is uncertain, dynamic and unpredictable, and hence it requires its founders to draw extensively on their own ingenuity and psychological inclinations as they participate in entrepreneurial courses of action. Other researchers have indicated that cognitive capital has particular relevance in aiding entrepreneurs to recover and learn from failures, and this promotes reflecting on performance as they encounter adversities in the start-up

process (Lopez et al., 2003).

The cognitive approach in entrepreneurship was recognised in the late of 1980s when a large spectrum of studies embarked on exploring cognitive aspects and their effects on entrepreneurship (Carland and Carland, 2000). Nascent entrepreneurs engage their mental states in a way that explains the underlying factors of the new venture's creation phenomenon (Mitchell et al., 2002; Luthans, et al., 2007b). The growing interest in understanding the contrasting effects of cognition theory in new venture creation was in part attributed to the scepticism among researchers who relied on conventional forms of knowledge. The process of launching new venture is complex and multifaceted, and therefore, it requires a cognitive lens that puts all of the parts together to achieve a rigorous understanding of the Nascent Entrepreneurship phenomenon with a more up-to-date discussion of entrepreneurship cognitive theory and its implications for Nascent Entrepreneurship. Here, the key argument is that understanding the impact of different forms of knowledge (i.e. entrepreneurial attributes - HC, SC) is inseparable from the quest to understand related cognitions. Krueger (2002) argued that even if these entrepreneurial attributes could be specified, their precise utilities might not be those assumed in the conceptual models. This is due to the complex nature and uncertainties associated with the nascent entrepreneurial process (Shaver and Scott, 1991; Krueger, 2002) compared to the relative certainty associated with other established settings in management studies.

Therefore, looking at the cognitive model and adopting its constituting variables as resource antecedents is viewed as an important step in distinguishing the drivers of the success or failure of the process of new venture creation. This follows Gartner's (1989,p.57) suggestion that what matters is 'what an entrepreneur does not what an entrepreneur is'. The mental states and related associations understood through a psychological lens contribute to the growing body of entrepreneurial cognition research and this in turn aids in exploring the emergence of the venture as an organisation from a perspective that takes into account the mental conditions and acuities of entrepreneurs (Robinson and Marino, 2013).

For maximum value in understanding the role of cognitions in Nascent Entrepreneurship, a genuine first step would be to focus on measuring the explanatory cognitions and judgmental aspects of entrepreneurial action enacted by nascent entrepreneurs who are actively contemplating venture creation (Shook et al., 2003). Surprisingly, studies appear to have overlooked entrepreneurial judgement (Hisrich and Jankowicz, 1990; Shook et al., 2003), and this was borne out in Shaver and Scott (1991, p. 39):

"The study of new venture creation began with some reasonable assumptions about the psychological characteristics of entrepreneurs. Through the years, more and more of these characteristics have been discarded, debunked, or at the very least found to have been measured ineffectively. The result has been a tendency to concentrate on almost anything except the individual…For that we need a person, in whose mind all of the possibilities come together, who believes that innovation is possible, and who has the motivation to persist until the job is done. For these we need a timely psychological perspective on new venture creation."

The previous focus on the entrepreneurial outcomes attained by conventional start-up capital's attributes alone (i.e. human, social, financial capitals) has been equivocal and unsatisfactory with little empirical evidence to support the theoretical assertions. Addressing this shortcoming is important if entrepreneurial cognition research is to make a significant contribution to our understanding of why some nascent entrepreneur succeed when creating new ventures and others fail. In addition, understanding the role of cognitions in venture creation (Nascent Entrepreneurship) is significant given the growing explanatory power of entrepreneurial cognition regarding entrepreneurship activities. Cognitive capital acts as an invisible linkage between competencies, knowledge, experiences and creativities, which encompass entrepreneurs' instincts and perceptions, allowing them to create new possibilities.

In the contemporary research, there is a growing interest in understanding the contrasting effect of cognition theory in entrepreneurship. A stream of empirical research has extended the traditional entrepreneurship area of focus by investigating the relationship between entrepreneurship and cognitions. This series of studies initially focused on exploring whether cognition is linked with entrepreneurship performance. Later, Van Gelderen et al. (2003, p.5) confirmed that 'the psychology of the entrepreneur has been found to be more important in predicting the chances to start a business than in predicting the chances of the success of a business'. The literature review indicated that entrepreneurship cognition research have paid attention to cognitive factors as determinants of entrepreneurship (Davidsson and Wiklund, 1997; Krueger, 2000; Hofstede et al., 2004; Linan et al., 2013), making great strides in explaining why some individuals engage in the start-up process, while others do not. Much of this research has attributed the decision of engagement and success in founding nascent ventures to the variations among individuals in their perception of feasibility, desirability, and the opportunity to take action. Gatewood et al. (1995) in this line of thinking suggested, '[c]reating a business is a process fraught with difficulty and failure' (p.), and therefore, nascent entrepreneurs' cognitive mindset in terms of perceptions, desires and intuitions appear to play a key role in influencing their resilience and willingness to persist and achieve in the face of the adversity they encounter as they engage in the start-up process. However, despite the seemingly increasing attention to the exploration of the cognitive

aspects of new venture creation, extant studies still adopt premature empirical and theoretical frameworks (Forbes, 1999).

Initially, the entrepreneurial cognition stream of research embarked on drawing connections with the traditional trait approach, referring to entrepreneurial cognition as a 'gestalt of multiple personality factors [that] are normally distributed and that the varying strengths of the traits in an individual entrepreneur combine to affect that individual's behaviour' (Carland, and Carland, 2000,p.5). This stream of research argued that when entrepreneurial cognitions and personal traits are infused with a knowledge structure this creates the entrepreneurial drive that creates opportunities. An example of this 'personalistic cognitive platform model' was described by Mathews' (2008, p.19) framework suggesting that viable opportunities are a function of the interaction between cognitive processes and entrepreneurial inspiration. Other scholarly efforts highlighted 'the theoretical importance of focusing on cognitive factors rooted in the lay epistemic motivations of individuals, rather than those embedded in psychodynamic, or unchanging instinct-based conceptions of personality development' (Schenkel et al., 2009, p. 67). The premise of this perspective is that key insights into distinguishing entrepreneurs from others, understanding entrepreneurial action and the underlying factors of success could be achieved through the study of how entrepreneurs think, process information, solve problems, make decisions and interact with complex and uncertain contexts.

The cognitive approach can determine why some nascent entrepreneurs are more successful than others by exploring their ways of thinking and reasoning as they interact with other knowledge structures and social settings (Brush, 1992; Mitchell et al., 2002; Ucbasaran et al., 2010). Therefore, in the present study, cognition capital is viewed as a key component of entrepreneurs' vision that aids nascent ones to conceive mental models that ultimately emerge as newly founded ventures. The central argument here is that this cognitive vision is subject to continuous expansion and alteration of knowledge and experience that leads to the emergence of a cognitive vision as a tangible outcome (Carland and Carland, 2000). The cognitive perspective should, therefore, help to develop a broader and deeper understanding of the behavioural aspects that have a systematic influence on business venturing actions at the pre-startup stage.

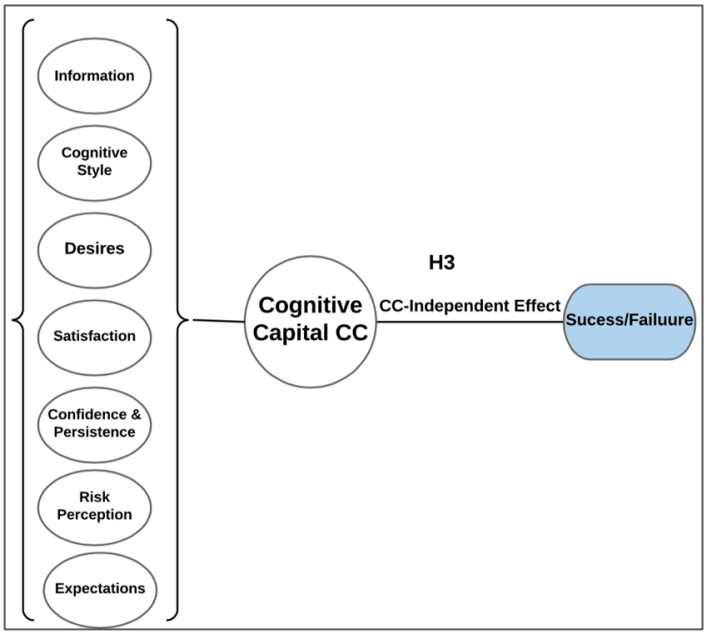
3.2.3.1 Cognitive Capital [CC] Linear Model

The analysis at the linear level, as illustrated in Figure (3.4) is not a new field of enquiry as scholars established the significance of entrepreneurs' psychology over the last three decades. The [CC] construct in this study portrays an attempt to provide a more detailed model of nascent

entrepreneurial behaviour that is contemporary. The proposed construct views cognitive science as the integration of the classical start-up capital's attributes with entrepreneurial psychology (Baluku et al., 2016). This is the art of science that examines nascent entrepreneurs' behavioural motives, confidence, persistence, risk profile, expectations, styles and biases as underlying behavioural variables that influence perception, interpretation of information, and the subsequent decision-making. The [CC] model hypothesises that cognitive aspects act as maps or mental scaffolds that allow nascent entrepreneurs to recall behavioural patterns, connect dots and bridge missing links in order to make sensible decisions that complement human and social-based knowledge, and eventually establish a better representation of reality.

Cognitive capital as a linear construct provides a context that can justify the fluctuations observed in the entrepreneurial pattern of actions, creating new possibilities based on the realisation of how cognitive aspects affect the founding process. This mental connection encourages reflective and critical thinking that questions assumptions, builds meanings and connects facts with intuitions. It can also make entrepreneurs aware of their bounded rationality, potential ignorance and mental biases. These biases can be the result of a misinterpretation of external signals and heuristics, where nascent entrepreneurs overestimate their individual personal skills. This, in turn, can inflate their expectations and create emotional conflict, leading to chaotic interpretations that can interfere with their reasoning and the effective utilisation of other forms of capital.

Figure 3.4: Cognition linear Model



The following sub-sections take a brief look at the facets of cognitive capital that are employed in the proposed conceptual model.

Informational Processing

The way in which individuals process information is vital. This measure observes the effect of informational gathering and processing that appears when nascent entrepreneurs progress in their gestation activities. Robinson and Marino (2013, p. 151) noted this measure stating that '[c]ognitive theory refers to various information processing activities such as gathering information, interpreting it and synthesising it to inform decision-making outcomes'. Thomas et al. (1993) referred to cognitive informational processing as the 'application of ways of comprehending the meaning of information'. It is worth noting that many reported outcomes in cognition research indicate that individuals are susceptible to cognitive biases and encounter mental and emotional constraints in handling information, and this in part can be attributed to the limited informational-cognitive capacity of entrepreneurs (Robinson and Marino, 2013). This is evident in their inclination toward thinking frames that rely on rule of thumbs, heuristics, cognitive illusions, loss/regret aversion, overconfidence, social conformity, status quo and representativeness (Baron, 1998; Simon et al., 1999; Robinson and Marino, 2013; Cossette, 2015)

Human cognition function as a self-organising system that enables individuals to engage in active thinking in order to organise and process-received information and consider its cognitive sequencing and patterning (De Bono, 1993). Informational processing capacity is established as entrepreneurs match complex information with recognisable patterns that enable them to reduce uncertainties, sense meanings, establish preferences, and ultimately synchronise it with existing conditions in order to transform it into action (Uchasaran and Westhead, 2002). This is a cognitive capacity that allows entrepreneurs to inquire about why and how things work, manage uncertainty, imagine the future and see promising possibilities.

The amount of uncertainty reduced through a systematic information search not only depends on the availability of information, but also on the entrepreneur's information processing capabilities. Even if information is available, entrepreneurs will not continuously engage in systematic information search because the marginal utility of additional information is expected to decrease as entrepreneurs approach their maximum information processing capacity. The act of sense making is therefore not only required to make sense of the accumulated information, but also to establish closure in the information search (De Bono, 1993). In addition, this cognitive factor appears to be

influenced by the accessibility and utilisation of other start-up capital's attributes that appear in the form of human and social capitals, and this is congruent with Forbes' (1999) statement: 'resource availability is an important determinant of the breadth of scanning behaviour'. This will be discussed in later sections.

Generally, nascent entrepreneurs depend on different sources of information that help them to understand the business' ecological conditions, dealing with the liability of newness and facilitating informative decision-making at the pre-startup stage. Scholars have gained valuable insights into individuals and the way they react and obtain information. In general, nascent entrepreneurs are inclined to diversified sources of information from which they gather and access intelligence which makes them more informed and thus more likely to make sound judgements. However, the uncertainties revolving around new venture creation can expose nascent entrepreneurs to hitches that obscure their ability to deal objectively with available information relevant to any given decision-making problem without developing cognitive biases. Many studies have emphasised that entrepreneurs' interpretation of information tends to be inclined to 'subjective cues' that lack rational aspects or statistical reasoning as these cues tend to combine easily with short cuts triggered by mental heuristics and cognitive biases.

In this line of reasoning and from a comparative perspective, some studies have explained the underlying success of professional managers on the basis of the rationality and comprehensiveness of their business venturing decision-making as opposed to entrepreneurs (Smith et al., 1988). Forbes (1999), in his explanation of cognitive approaches to new venture creation, referred to the uses of categorisation theory in differentiating the interpretation of the behaviour of entrepreneurs, stating that 'people process information by assigning new data to pre-defined mental categories […] and entrepreneurs are predisposed to categorise equivocal business situations more favourably than non-entrepreneurs' (p.10). Hill and Levenhagen (1995, p.1057) said that entrepreneurs function 'at the edge of what they don't know' and hence they tend to utilise 'metaphors' and mental frameworks as they engage in the sense making process by retaining patterns of actions that maximise their propensity to realise outcomes, and concurrently mitigate the risks of dealing with unfamiliar situations.

Indeed, the informational cognition approach can reveal limitations in thinking that occur as a result of time pressure, past memories, emotional conflict, uncertainty, novelty of the situation and attention limitations (Baron, 1998). Toshino and Suto (2004) explained that these informational-

cognitive elements could appear in the form of heuristics that potentially introduce systematic errors and adversely bias the individual's perception given the uncertainty of the new venture creation business environment. They further argued that individuals are subject to judgement imperfection, especially when they select among alternatives. Biased information processing and search may limit individuals' judgement and result in the appearance of rule of thumbs, which in the case of this study would obscure or alternatively facilitate reaching an optimal or inflated decision that mobilises or demobilises the utilisation of existing resources. Rapid and effective use of relevant information requires the science and art mindset of connecting experience, knowledge, facts and intuitions to come to logical conclusions. Nascent entrepreneurs need to be selective in how they combine the right pieces of information that suit the situation, which also carries the risk of embodying conflicting signals.

Confidence and Persistence

The confidence measure in this study is defined in terms of nascent entrepreneurs' perception of their abilities to attain success, persistence in the business venturing process, and personal image. 'Overconfidence involves the failure to know the limits of one's knowledge' (Simon et al., 2000; cited by Robinson and Marino, 2013, p.152) and it resembles over-optimism (Robinson and Marino, 2013), and the self-efficacy in their ability to execute tasks and achieve success (Bandura 1986; 1997). The cognitive simplification driven by overconfidence usually makes entrepreneurs more inclined to frame situations more favourably than others (Palich and Badgy, 1995; Robinson and Marino, 2013), and hence they may look more competent and trustworthy (Anderson et al., 2012).

According to Bandura (1994) and Fu et al. (2010), a higher sense of self-efficacy appears to provoke perceptions that make entrepreneurs inclined to risk taking behaviour as they perceive themselves to be in control of difficult situations and hence handle situations as opportunities rather than threats. This cognitive aspect was among the key factors that were acknowledged in early decades as a mental bias (Oskamp, 1965). There is a growing attention being paid to overconfidence in the entrepreneurship literature and more specifically greater exploration of its association with the venture creation concept (Simon et al., 2000; Robinson and Marino, 2013). Generally, entrepreneurship studies postulate that individuals who choose to engage in the start-up process tend to exhibit optimistic behaviour about their probability of success in pursuing their new endeavour driven by a level of confidence and persistence (Cooper, Woo and Dunkelberg, 1989). The extant literature continues to theorise confidence and persistence as cognitive measures

that are associated with an overestimation of success (Lowe and Ziedonis, 2006), degraded decisions (Tversky and Kahneman 1974; Kydd, 1989), inflated abilities (Busenitz, 1999), and illusion of control (Krueger and Wright, 2011) that can adversely affect entrepreneurial judgement, decisions and subsequent outcomes. This is closely associated with enterprising individuals who overestimate their skills and in turn misinterpret information at their disposal (Baker and Nofsinger, 2002).

The literature includes a broad range of studies that shed light on the link between entrepreneurs' perception of their skills and their true capacity in launching a new business (Vazquez et al., 2010; Doh and Acs, 2010). For example, Bandura (1997) presented different aspects of confidence and discussed them as a function of prior experiences that relate to: 'enactive mastery', 'vicarious experience', 'verbal persuasion', and 'physiological arousal'. Yet these traits appear not to be conclusive determinants of entrepreneurial undertakings (Robinson and Marino, 2013). The entrepreneurial mind is uniquely distinguished and therefore entrepreneurs' self-perception of their abilities and competencies are wired to their distinct mindset. Entrepreneurs' minds are distinct in a particular way because they are distinct in that particular way. The key premise here is that the complexities inherent in entrepreneurial behaviour are constitutionally residing in the deep cognitive schemas of individuals 'in whose minds all of the possibilities come together, who believes the innovation is possible, and who has the motivation to persist until the job is done' (Shaver and Scott, 1991, p. 39). According to Markman et al. (2005), 'starting a venture is a challenging undertaking that requires a high level of confidence [where] self-efficacy drives career choice (since people make decisions based on perceived abilities) [that] result in better performance in the difficult circumstances that entrepreneurs face' (Sethna et al., 2013, p. 5).

In our present model, we posit that the confidence and persistence that matters in the context of new venture creation resembles the genuine self-adequacy created under conditions in which one manages achievements and difficulties rather than absolute reliance on self-perception (Gillham and Seligman, 1999). In essence, entrepreneurial capacity is manifested in how entrepreneurs view the relative value of their intelligence and resources in light of their distinct convictions about their ability to exploit these resources and execute tasks that can result in wealth maximising behavior (Shane and Venkataraman, 2000).

Cognitive Style

Cognitive style in the context of entrepreneurship refers to entrepreneurs' mental patterns in

structuring novel or conventional perspectives. It also refers to the individual's mode of thinking and psychological structures that facilitate effective decision making where individuals attempt to employ high order mental states to manage the coordination, processing and presentation of information (Streufert and Nogami, 1989). A cognitive style is conceptualised as a metaphor that aids entrepreneurs in navigating venturing problems (Lumsdaine and Binks, 1998) and exploring the mental styles and thinking patterns that leverage the enterprising individual's capability in building links and recognising unrelated contexts and changes in socio-economic contexts (Baron, 2003).

Cognitive thinking style in the context of Nascent Entrepreneurship can be analysed by borrowing the recognised styles from Kirton Adaption-Innovation theory (KAI) (Kirton, 1976; cited in Johnson et al., 2004). This theory aims to distinguish nascent entrepreneurs and their probability of achieving success in the context of the entrepreneurs' style of problem solving, confronting adversities and dealing with uncertainties. It also seeks to specify if adapting to conventional norms, proven knowledge and social cues as compared to eccentricity, unproven possibilities, and free and innovative thinking in the entrepreneur's approach to start-up issues can distinguish between the outcomes of the new venture creation process. The tested model of KAI postulated the strengths and weaknesses of different cognitive styles, and advocated a balanced perspective that adopts both styles of thinking (innovation-adaption) in accordance with the context and circumstances of the business being launched. The cognitive style index (CSI) is another widely used measure in large-scale organisational studies that determines the profile of cognitive thinking along analytic-intuitive dimensions and is used in this study. The premise here is that when nascent entrepreneurs succeed in deploying their intuitive-analytic frames of thinking with the knowledge they acquired over the course of their lives, they develop entrepreneurial abilities that allow them to see beyond the materialistic barriers by incorporating these cognitive aspects into their constructed images, perceptions and cues that collectively constitute new possibilities for success (Carland et al., 1996).

In essence, information is complex and demands an entrepreneurial mindset that has the flexibility to connect and interpret the information relying on cognitive schemes. The 'cognitive style continuum' embodies two modes of thought that drive entrepreneurial judgement: intuitive and analytic thinking. These cognitive styles permeate entrepreneurial decisions and act as a legitimate basis for decision-making that reflects the entrepreneurs' type of knowledge and thinking method. Researchers argue that intuitive thinking is the 'unconscious perception' that can be applied to

simple, easily structured problems, and in more complex contexts allows entrepreneurs to intrinsically form convictions and detect hidden aspects that enable visions of new ventures to emerge (Carland et al., 1996). Some researchers define the intuitive mode of thinking as 'a perception of possibilities, meanings, and relationships by way of insight' (Gerrity, 1987, p. 63)', as 'knowledge of fact or truth as a whole; immediate possession of knowledge; and knowledge independent of the linear reasoning process' (Rew and Barron, 1987, p. 60) or as the 'source of a vision of what is not there, but intuition endows the individual with faith and confidence in the vision' (Carland and Carland, 2000). Also, many studies of intuition have highlighted the accuracy of intuitive judgement in predicting risk in the health sector (Benner, 1984). In contrast, complicated contexts and business structures that are based on deep knowledge and innovative solutions still rely on rational, analytical and well-structured systematic approaches. The analytical mode of thinking tends to combine information and employs principles that adhere to best practice.

The proposed model posits that cognitive styles are critical aspects of cognition that allow enterprising individuals to detect the invisible links between different forms of knowledge in order to find the best fit between resources under different circumstances. The best fit is propelled by entrepreneurial style as much as it is by the endowed resources. Therefore, the proposed model suggests that nascent entrepreneurs are continuously thinking about founding a new venture and actively engage the full force of their entrepreneurial talent, knowledge and skills to drive the founding of ventures, and therefore make use of active-passive and innovative-adaptive styles of cognition as part of their mental processing that becomes manifest in a variety of links and relationships. These, in turn, have considerable potential to reveal new possibilities that differentiate between success and failure in launching a new venture.

Risk Awareness

Risk awareness is an important cognitive measure that aids in explaining why nascent entrepreneurs, in reality, succeed or fail to attain favourable outcomes (Brockhaus, 1980; Cooper et al., 1988; Palich and Bagby, 1995). Mental perception of risk creates mental images that hinder or enable individuals from discovering and pursuing opportunities. The perception of risk is adopted in this study. '[r]isk perceptions involve the way individuals make sense of the degree of uncertainty and the possibility for loss associated with particular actions' (Knight, 1921; cited in Robinson and Marino, 2013, p.155). Others define it as the 'uncertainty about whether potentially significant and/or disappointing outcomes of decisions will be realised' (Sitkin and Pablo, 1992). Risk perception reflects the level of uncertainty that nascent entrepreneurs are exposed to and to

what extent they are comfortable dealing with such uncertainties and how they utilise other start-up capital's attributes to mitigate risk. The focus here is on how individuals frame their actions and decisions considering the uncertainty factor (Kahneman and Tversky, 1979).

According to Gartner (1985), Mitchell et al. (2002) and Robinson and Marino (2013), risk perception plays a crucial role in understanding entrepreneurial behavioural actions, decisions and choices and thus, overlooking this particular cognitive aspect can obscure meanings. Risk perception is a cognitive behaviour that can be inflated by entrepreneurs' level of confidence in their abilities, views of reality, control, optimism (Sitkin and Pablo, 1992), and fear of failure (GEM Reports, 2010; 2011) with a possible tendency towards positive outlooks that bias the perception of risk (Palich and Badgy 1995; Gervais et al., 2011). This biased perception of risk can make entrepreneurs inclined towards using less information, which in turn impedes their vision of associated threats and opportunities (Palich and Badgy, 1995). By forming entrepreneurial perception that revolves around the individual's interpretation of risk (Forlani and Mullins 2000), nascent entrepreneurs would be more able to establish credence that aids them in assessing the propensity of gain and loss (Cooper et al., 1988; Robinson and Marino, 2013) and the probability of achieving success.

The literature has failed to assert empirically the relationship between risk perception and entrepreneurs' ability to attain outcomes as they engage in transiting their nascent ventures to an operational state. Meta-analyses of the current empirical studies that aim to draw a link between entrepreneurial behaviour and risk profile indicate that entrepreneurs tend to develop a high inclination for risk (Stewart and Roth, 2001). Following this line of analysis, Robinson and Marino (2013) and Petrakis (2007) argued that entrepreneurs who embark on pursuing entrepreneurial opportunities may not necessarily possess a great appetite for risk, but instead they may develop cognitive states and perceptions that bias their evaluation of the risk at hand. This indicates that entrepreneurs start new ventures 'not because they knowingly accept high levels of risk, but because they do not accurately perceive the risk involved in venture creations' (Simon et al., 1999; cited in Shook et al., 2003, p. 388). Thus, nascent entrepreneurs who decide to exploit entrepreneurial opportunities may possess cognitive biases. According to Penrose's (1959) argument, risk assessments generally are made on the basis of subjective measures, and this increases the propensity of developing biased thinking of reality inflated by miss-informed perception of risk and related uncertainties, embedding the founder's ability to anticipate the associated gain and loss in entrepreneurial events (Koellinger et al., 2007) and consequently, their

ability to found a new venture.

In the proposed model, we aim to understand how the perception of risk of the relevant market is represented in the cognitions of nascent entrepreneurs who succeed or fail in their founding attempts of new ventures. The proposed model posits that nascent entrepreneurs score highly for risk awareness about the market's competition are more likely to achieve success and show greater momentum in the pace of the new venture creation process as they tend to relax certain assumptions by adopting stochastic judgements supported by intuitive beliefs. This tendency makes them more likely to view emerging events as less risky and consequently increases their persistence and commitment levels causing them to focus their time, resources and efforts to founding the new venture. This cognitive perspective would explain why nascent entrepreneurs with higher risk awareness are more likely to progress in their business venturing attempts (Colman et al., 1988) and reach outcomes.

Desires and Expectations

Differences in the desire to found a new venture appear to affect the outcomes in the business launching process and accordingly act as a distinction factor (Gatewood et al., 1995). At an empirical level, a broad range of studies has focused on the motives-desires that drive the decision to found a new venture. For example, a study conducted by Gatewood et al. (1995) found that nascent entrepreneurs who are driven by desires that relate to a need for autonomy have a higher likelihood of attaining success in Nascent Entrepreneurship. Another empirical study confirmed that the desire for business creation tends to differ across different countries and contexts and is mainly influenced by aspirations that relate to status, prestige, idea development and learning (Shook et al., 2003). Yet other studies have focused on entrepreneurial desires as distinctive traits that drive entrepreneurial outcomes (Gatewood et al., 1995; Van Praag and Cramer 2001; Pena 2002; Van Praag 2003; Collins-Dodd et al., 2004), suggesting that desire for founding new ventures can either have positive or adverse effects upon the attained outcomes. They also suggested that desires driven by intrinsic reasons (i.e. putting personal ideas into action and desire for self-employment and independence) increase the propensity of creating new ventures and attaining subsequent success. This asserted the economic which suggested that the expected utility linked with the selection between career options plays a key role in influencing entrepreneurial desires (Campbell, 1992).

However, the literature still lacks solid evidence of entrepreneurial desire as a distinct predictor of

the outcomes attained of entrepreneurship (Chell, 1985). Mills (2001) justify this by stating that:

> *"it may be that the desires that lead people to become entrepreneurs are so widely distributed that their presence or absence is only a marginal discriminator. Some economists indicate that no special motives need to be adduced and an individual becomes an entrepreneur if he/she believes that his/her own use of (exogenously) available resources can yield a higher risk discounted expected income when compared with the possibility of hiring them to others."*

The proposed model employs a set of desires within the cognitive construct to explore their effects upon the outcome of new venture creation. These desires are triggered by income, innovation, power, recognition, learning, challenge and family reasons. Also, the proposed model employs expectancies that relate to nascent entrepreneurs' growth in sales and employment base in order to explore their direct effects on the outcome of the new venture creation process. The transformation of entrepreneurial expectations into active efforts to pursue the founding of new ventures constitutes a fundamental part of entrepreneurship research at the early stage of development (Shumpeter, 1934; Kirzner 1997; Shane and Venkataraman 2000; Schenkel et al., 2009). Scholars argued that subjective perception of the outlook of the new venture (i.e. future expectations and preferences) induces distinctive effects on entrepreneurial actions (Dennis and Solomon, 2001; Liao and Welsch, 2003). Gatewood (2004, p. 153) stated that '[as] every major cognitive motivational theory gives expectancy some role in determining action, expectancy theory could be the basis of a framework for explaining why some individuals choose to create organisations'.

Expectancy theory is a prevalent concept that was used by scholars to interrogate decisions, perceptions, preferences and occupational choices (Ambroze and Kulik, 1999) based on expected efficacy (Harder, 1991). Scholars debated that 'behaviour is a function of an individual's expectancy that a response will bring reinforcement, together with perceived value of that reinforcement' (Gatewood, 2004, p. 153). This follows the logic pertaining to utility models that seek to maximise the utility function (income) in association with individuals' subjective expectancies (Douglas and Shepherd, 2000). Moreover, other studies viewed expectancies as dynamic aspects that stimulate changes in terms of the valence (how we view outcome) and instrumentality (how one outcome leads to another) (Mitchell and Mickel, 1999). These stimulating aspects match the evolving nature of nascent ventures and entrepreneurial behaviours that emerge as enterprising individuals attempt to bridge gaps between their perceptual judgement (i.e. desires, motives) and reality (i.e. existing resources) (Liao and Welsch, 2003; Gatewood, 2004).

In light of the preceding discussion for [CC] model and its constituting variables, the following

hypothesis regarding the linear role of cognitive capital is proposed:

H3: Cognitive capital has significant (+) main effect on the outcome of new venture creation process

We conclude the linear modelling section by arguing that the main (linear) effects for start-up capital's attributes [HC], [SC], [CC] appear to pose risks as well as opportunities to the ways in which knowledge is created, accumulated and shared. They can be viewed as effective indicators of the sometimes-diffused concept of 'knowledge'. However, the interpretation of knowledge is achieved if nascent entrepreneurs succeed in converting endowed resources into practical knowledge, intelligence and capabilities that enable them to develop a better sense of business reality. Therefore, in the first set of hypotheses (H1, H2, H3), we argued the linear effects of start-up capital attributes may have significant impact on the outcomes of new venture creation process, but that those linear effects could have a significant—and more interesting—effect on outcomes of new venture creation process within the integrative modelling. This offers knowledge base for the main elements that constitute the integrative modelling discussed in next section.

The question then remains what those combined effects signify for the outcomes of new venture creation process, particularly extreme outcomes, whether success or failure in launching a new business. In view of that, the next section presents the two folds of the integrated modelling.

3.3 Integrated Modelling - "Start-up Capital" Interaction Effects

At this stage of modelling, the relationship between the main predictor and the outcome changes as a function of a third variable, or moderator [CC; PDs]. This part explores the main effects of startup capital's attributes (forms of nascent entrepreneurial capital- HC-SC-CC) as antecedents to entrepreneurial action rather than as direct determinants of the ultimate outcome. The integrated modelling embodies two forms of interaction:

Integrated Modelling (I): ["Startup Capital"- Process Dynamics – New Venture Creation Outcome] Relationship
- [HC X PD (Moderator)]; - [SC X PD (Moderator)]; - [CC* X PD (Moderator)]
Integrated Modelling (II): ["Startup Capital" Interplay- New Venture Creation Outcome] Relationship
- [HC X SC]; - [SC X CC**(Moderator)]; - [HC X CC**(Moderator]
Notes: - Moderators: Process Dynamics and Cognitive Capital - *Cognitive Capital as a predictor - ** Cognitive Capital as moderator

The integrative framework should be as well thought-out as mechanisms that diffuse the effects of venture resource endowments on venture creation outcomes. The obvious advantage of the integrative model is the fact that it corresponds to an explanatory mechanism, acknowledging the notion that Nascent Entrepreneurship is an evolving and complex process (Shook et al., 2003; Baluku et al., 2016; Dimov, 2017). Therefore, a holistic and configurational approach for studying the conjectural causation becomes a necessity in understanding the complexity of Nascent Entrepreneurship phenomenon and how its constituting models combine in a meaningful ways to attain the outcomes of interest (Baluku et al., 2016; Dimov, 2017). This conceptualisation comes in light of the recent insights that have expanded the conception of knowledge-based capital in order to avoid the static disposition embedded in traditional 'possessed' knowledge. This '[r]efers to more than an 'epistemology of possession'; rather, knowledge is conceived not only as a commodity to be exchanged, but also a recursive process that cannot be separated from action, practice, or behavior' (Brymer, Hitt, and Schijven, 2011, p.7).

While the idea of integration is not new, yet its methodological application has been limited by modelling limitations (Dimov, 2017). Dimovs' (2017) recent study on the conceptualization of [HC] measurement in entrepreneurship emphasised the importance of adopting the configurational thinking in order to study the conjectural causation that considers jointly the multiple factors that determine the entrepreneurial outcome of interest. Dimov in this line of reasoning advocated the use of qualitative comparison analysis (QCA) that was first recognized in the segmental work produced by Ragin in 1987. This approach appears to gain acceptance in the entrepreneurship as a way that aims to understand the holistic and evolving nature of entrepreneurship and its inherent complexities (Krause et al., 2014; Munoz and Dimov, 2015; Mandl et al., 2016; Dimov, 2017).

Dimov (2017, p.215) in this regard stated that 'the broad contribution of this work is to highlight the conjunctural and equifinal nature of the relationships that comprise the entrepreneurial process, whereby factors normally considered on a piecemeal basis are rarely sufficient on their own as they interplay with other conditions'.

The process dynamics [PD] and cognitive variables [CC] are proposed in the model of the present study as moderators, given that the model suggests that they affect the magnitude of the relationship between the start-up capital's attributes and the outcome of new venture creation process. These factors act as moderators that determine the extent to which knowledge (start-up capital) is reinforced or changed based on the cognitive states of the entrepreneurs and the enactment process of the possessed knowledge (start-up capital). Hence, the nature and extent to which start-up resources are translated into action and then outcomes will depend on understanding the interplay between start-up capital attributes, and the elements that potentially moderate this complex relationship. The model at this stage extends the focus towards the composite nature of entrepreneurial actions. Composite action in this context can be triggered by the interplay among start-up capital's attributes (HC, SC, CC) and /or nascent entrepreneurs' dynamic ability to internalise acquired capital in a way that facilitates productive behaviour.

The proposed model in this sense suggests that different nascent entrepreneurs may possess comparative skills and experiences, yet still exhibit differences in their practical and integrative abilities, depending on how they interact with process dynamics and combine their resources to internalise the information in their business environment. The model posits that success in founding new ventures is more likely to be attained by those who interpret and enact events by combining resources and engaging dynamic mechanisms that actualise the process' momentum, leading to the attainment of outcomes (success or failure in founding new venture). Therefore, this conceptualisation suggests that the process of new venture creation embodies different types of symbiotic relationships, where non-linear relationships appear to be evident at theoretical and empirical levels (Baker et al., 2003; Liao et al., 2005). This extends Davidsson's (2004) and Kessler et al.'s (2012) theorisation that addressed the venture creation process as a multi-dimensional phenomenon, emphasising the importance of resource combinations in attaining conceptual legitimacy and social acceptance.

The process of business formation involves complex interactions (see Figure 3.5), and therefore researchers from various disciplines focused on a wide spectrum of strands that facilitate or impede the individual's propensity to launch a new venture (Stinchcombe 1965; Granovetter,

1985; Carroll and Hannan, 2000; Arenius and Minniti, 2005; Audia et al., 2006; Batjargal et al., 2009). Across different decades, scholarly efforts made thoughtful attempts at exploring entrepreneurial interactions by reviewing the gestation actions executed by nascent entrepreneurs to realise the founding of new ventures (i.e. Gartner, 1988; Cooper et al., 1988; Reynolds and Miller, 1992; Bhave 1994; Carter et al., 1996; Reynolds 1997; Reynolds and White, 1997; Liao and Welsch, 2003; Davidsson and Honig, 2003; Bosma et al., 2004; Liao et al., 2005; Van Gelderen et al., 2005; Benyamin et al., 2007; Parker and Belghitar, 2006; Tornikoski and Newbert, 2007; Lichtenstein et al., 2007; Brush et al., 2008; Hindle and Klyver, 2011). However, empirical attempts remain comparatively scant with regards to the synergised patterns of interactions that foster the formation of new ventures (Reynolds and Miller, 1992). Considering the uncertain and emergent nature of entrepreneurship, we put forward the notion of integration. The integration perspective has its roots in Schumpeter's (1934) and Kirzner's (1921) theorisations. In both perspectives, nascent entrepreneurs are viewed as change agents who adopt dynamic actions that ultimately alter the economic system.

In the case of Kirzner, change is driven intrinsically within the economic system relying on entrepreneurs' level of alertness to existing deficiencies, and in such case, business emerges out of disequilibrium. In this sense, nascent entrepreneurs seek adjustments in the market process by altering ways of production, coordinating activities, combining resources in order to stabilise the founding process (arbitrage behaviour). It is viewed as incremental changes that eventually lead to an equilibrated economic system. While in the case of Schumpeter, external forces that reside in entrepreneurs' resource settings drive the change, disrupting the economic system innovatively leading to 'disequilibrium'. Schumpeter describes this phenomenon as a dynamic process of 'creative destruction' triggered by entrepreneurs' innovative actions (Jony, 2011). Recent scholarly insights have indicated that Shumpetrian and Kirznerian typologies of entrepreneurship rely mainly on the innovative edge. They have argued that even actions that provide incremental improvement and are imitative in nature (Reynold, 2007) still deal with a level of dynamics that enables efficient combining (integration) of resources and coordination of activities. Therefore, regardless of the nature of the new venture, nascent entrepreneurs need to possess distinctive behaviours and dynamic abilities linked to their start-up resource base in order to reach a general state of alertness that enable them to enact opportunities towards the successful realisation of the nascent venture (Jony, 2011).

Indeed, an understanding of the venture creation process entails in-depth exploration of the

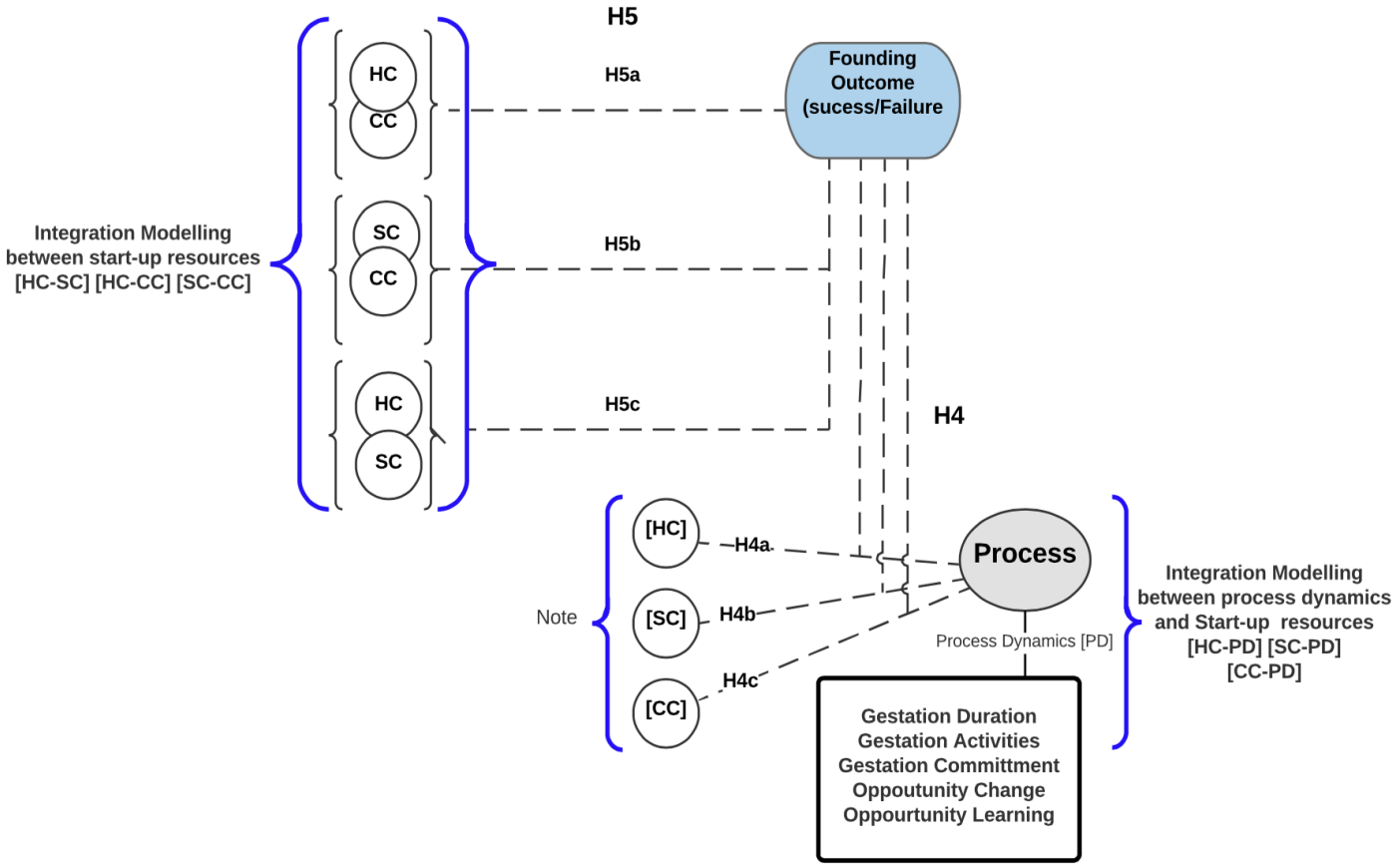
interlocked actions driven by integrative-dynamic forces (see Figure 3.5) that play an essential role in shaping the founding characteristics and fostering the successful emergence of new ventures. Entrepreneurship research has explored interactions through a set of precursor behavioural actions grounded in the theory of organising. The theory stated that entrepreneurial action patterns appear when interlocked with a set of behaviours embedded in human, social and cognitive capitals, and has argued that such interlocked patterns are particularly useful in attaining business legitimacy (Carter et al., 1996) and entrepreneurial success at the nascent stage of business venturing (Reynold, 1996).

The integration perspective has its roots in the Austrian school of economics. The economist Carl Menger (1840-1921) did not rest on mathematical models used in classic economic theories and instead introduced the 'economiser' concept, emphasising the notion that knowledge relies on the 'economiser' to assess the situation and develop economics of planning minds to identify interactive causal links. This approach was considered a fundamental initiative that paved the way for the emergence of the Austrian school. Yet, the Austrian school's thinking introduced by Mises and Menger had inherent limitations as they were merely associated with the assumption that knowledge is equally available and shared among economisers (Koppl and Minniti, 2006).

Hayek (1945) continued the path of Mises and Menger, but on the basis of different assumptions. In his early theorisation, he observed that knowledge is 'dispersed among economic agents' (Hayek, 1945), and this entails a coordination process to build a coherent knowledge that in turn enables successful entrepreneurship. He further elaborated that 'no one has synoptic view of the whole… each actor knows only a few things, and knows parts that require an integrated approach in order for the picture of opportunity to emerge' (Koppl and Minniti, 2010, p.222).

Scholars continue to rely on Hayek's theory, which viewed the action and reaction of entrepreneurs as a consequence of their interpretation (Koppl and Minniti, 2010) and ability to accumulate and integrate different forms of knowledge. In this line of thinking, in the proposed model, we view nascent entrepreneurs as 'economisers' who possess a wide range of resources, abilities and mind-sets that enable them to interact and create optimum combinations.

Figure 3.5: Nascent Entrepreneurial Capital Integrated Model



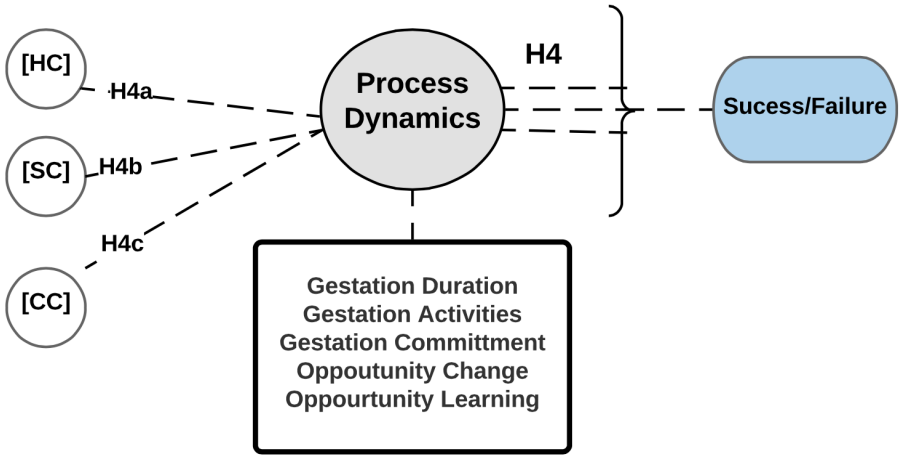
3.3.1 Integrated Modelling (I) – Integration From Dynamic Perspective:
["Start-up Capital" - Process Dynamics - New Venture Creation Outcome] Relationship

Given the dynamic, complex, fragile and multilevel nature of business founding process as well as the importance of both knowledge and action to Nascent Entrepreneurship, the proposed model (see Figure 3.6) shed light on the salient determinants of entrepreneurial success considering the scope of integration between start-up capital and process dynamics. At this stage of modelling the relationship between the main predictors [HC, SC, CC] and the outcome of new venture creation process changes as a function of a moderator [Process Dynamics].

In this form of modeling, we adopt an integrated view of new venture creation, where the forms of start-up capital's attributes and their dynamics are central to the research framework. The key assumption here is that prior knowledge embedded in start-up capital's attributes makes limited contributions to nascent venture success unless nascent entrepreneurs combine it with a dynamic context that exploits the full potential of existing knowledge (Corbett 2005; Ucbaracan et al., 2008). This clearly agrees with Rubenstein and Geisler's (2003, p. 66) statement that 'although knowledge may be power in some sense, it is not an adequate basis for running an organisation on

its own merits […] knowledge has to be combined with other attributes'. Indeed, nascent entrepreneurs shape their knowledge (forms of capital - HC, SC, CC) to attain utility and bridge gaps by putting their collective knowledge into dynamic action. The interactive nature of the entrepreneurial process tends to guide the scholarly research, throwing light on the unique conditions, characteristics and behaviours that stimulate the emergence of new ventures. The dynamic process as described by Ramos-Rodriguez et al. (2011) is 'perception' of entrepreneurial surroundings, 'discovery' of deficiencies and misfit between needs and resources, and 'creation' of solutions that respond to needs in the surroundings.

Figure 3.6: Nascent Entreprenurial Capital and Process Dynamics Integrated Model



New firm science has focused on different aspects that explain the emergence and development of new firms. Despite the large corpus of existing literature, there is limited agreement about which theories and conceptual models are best suited to explaining the formation of new ventures. Carland and Carland (2000) argued that new venture success could be predicted if we first model the venture creation as a process. However, the literature considers new venture creation as controversial topic, and questions 'whether this phenomenon could be considered as a process or not' Aidin (2015, p. 101). According to Aidin (2015, p. 105), 'the research on new venture creation is still young and in its embryonic stages'. This has led to the adoption of the Eclectic Theoretical Model (Rotefoss et al., 2005) to deal with the theoretical gap and reach a comprehensive understanding, cutting through diversified paths in varying contexts. Miller (2007) emphasised that although different circumstances and contexts may arise, there are always common factors and varying settings and dynamics that emerge because of the variations in the resources endowed by the enterprising individuals that affect the formation process of new

ventures.

Different studies have adopted different models in studying the process of venture creation, highlighting the dynamics and genesis of this phenomenon, yet there is no dominant theory (Gordon, 2012). For example, earlier studies (i.e. Shane and Venkataraman, 2000; Shane, 2003) followed the descriptive approach to portray the abstraction of new venture creation (Russell, 1999). Descriptive frameworks, according to Gordon (2012), are essential in reflecting simple yet important aspects of the new venture creation phenomenon that enable the emergence of the overall picture of the process. However, the new venture creation literature was for a long time biased in favour of descriptive frameworks that lacked theoretical and empirical grounding. Modern approaches have therefore mainly attempted to redress the imbalance by explaining rather than describing the entrepreneurial process and related dynamics. Other researchers theorised new venture creation as a systematic process with a chronological order (Bhave, 1994; Davidsson, 2008; Eckhardt and Shane, 2010). This 'stage modelling' framework adapts a priori sequences of transactions with a predetermined process rather than a random series of occurrences (Liao and Welsch, 2005).

But the literature has also made a limited contribution to our understanding of the cumulative effect of chronological or symbiotic order, as such Gordon (2012) when he questioned whether it matters in any substantive sense and argued that the chronological steps involving entrepreneurial discovery followed by the mobilisation of predetermined resources in effect contradicts the emerging, collective and dynamic nature of nascent ventures (Baker and Nelson, 2005; Shah and Tripsas, 2007). Alternatively, they suggested that the opportunity and resources co-exist within an iterative process that drives action via a collective of heterogeneous actors. This laid the groundwork for testing the integrative nature of the entrepreneurial process. For example, theories that relate to organisational emergence, social theory, psychology, strategy and economics were all employed to explain the process of venture creation (Carlsson et al., 2013; Kuratko et al. 2015). Most of these theories had a particular focus on predicting the venture outcomes using process variation as the antecedent. In contrast, limited studies looked at how the startup resources affect specific components of the process. This signifies insufficient interpretation of the phenomenon that is contingent upon the inferred process' outcomes, and in turn implies a limitation in recognising the nature of the new venture creation process.

According to Gordon (2012), the entrepreneurial process manifests as different mantles that relate to 'causal explanation', 'conceptual classification' and 'sequences' that delineate the emerging

changes and complex properties as integral parts of the process' collective being. He stated that the deepest theorisation of the process' order resides in the act of exploring the interrelations between resource-process components and how these unfold over time from the basic concept to the culminating point of the business' launch. He also pointed out that the interrelation could be viewed as discrete blocks of actions but with connected links that evolve as the process plays out. The extant literature also discussed the structure of the process, stating that there is growing empirical evidence supporting the theory of new venture creation as a 'random, simultaneous and iterative process that follows different "symbiotic" orders and sequences for discovery and exploitation as it moves forward' (Baker et al., 2003; Davidsson, 2004; Gordon, 2012). Observations made thus far, point to the potential of attaining a comprehensive and overarching theory of the nascent entrepreneurial process and its attained outcomes by incorporating a combination of directionality (iterations) and dialectic (forces). This combination aims to align common themes in the literature and makes learning possible by exploring different interactions among the components constituting the process.

The proposed dynamic actions in the study's model (see Figure 3.6) are defined as an '[e]quifinal phenomenon' where the process gets initiated from different starting points and progress along distinctive paths. Lichtenstein et al. (2006) considered these dynamics as the means of concluding the venture creation process that represents the breadth and depth of engagement with the process (Gartner et al., 2004). Entrepreneurial dynamics are embedded in tactical organising that resembles a stream of interdependent and coordinated leaps of actions, behaviours, cognitions and interventions (Romanelli and Tushman, 1994) undertaken by the nascent entrepreneurs as they become involved in the iterative exploitation of new possibilities and contingencies. For example, in Katz and Gartner's (1988) model, the process emergence properties were measured in terms of resources, intentions, boundaries and exchange aspects, reflecting the evolving paths and patterns of the emergence phenomenon. In subsequent years, Reynolds and Miller (1992) attempted to investigate the new firm's creation phenomenon for American new ventures, likening the process to a living system that follows an arbitrary sequence of events. They also employed action measures, reflecting the substantial differences in firms' rates of gestation and their effects (see Davidsson and Gordon, 2011).

Clearly, the process dynamics appear to create new possibilities for success, where the start-up capital's attributes endowed by nascent entrepreneurs come into play, converting these possibilities into a new and viable venture. This comprehensive approach was clearly observed in early

empirical attempts. For example, entrepreneurship scholars looked at these dynamics as they relate to the performance of new ventures (Hanks et al., 1994), innovation, product development (Van de Ven et al., 1999), firm emergence (Bhide, 2000), and opportunity recognition (Shane and Venkataraman, 2000) (Lichtenstein et al., 2006). Despite the significance of process dynamics, their theorisation and modelling in existing theory testing and building are invariably limited in the context of new venture creation, except for the noted work introduced by Lichtenstein et al. (2007) and Gordon (2012).

The proposed model of this study (see Figure 3.6) assumes that there are several points along the founding path (new venture creation process) where the start-up capital's attributes intersect with the process' properties, interact with business and social boundaries, and play out through change and learning that turns resources into a set of actions that persists in the face of adversity. The model explores the changes initiated during the gestation process by taking a closer look at how the observed dynamics work in terms of conceptual thinking, learning, and gestation behaviours that influence the new venture' outcomes in their interaction with the start-up capital's attributes (forms of capital – HC, SC, CC). The stated dynamics were selected because of their adaptive nature that matched the emerging nature of the business founding process. This should help us to portray an extended picture of what venture creation success looks like, explain the consistency within the linear models, and distinguish the dynamic-integrated actions that act as predictors of success. The proposed model views nascent entrepreneurs as 'aberrant artist[s] with an innate sense of impeding change' (Hill, 1982; cited in Gartner, 1985,p.699). This change materialises as nascent entrepreneurs interact with a series of dynamics that emerge in the context of new venture creation.

In the same vein, McGrath and MacMillan (2000) conceptualised entrepreneurs' mental frame of thinking as a dynamic mindset that is central to entrepreneurial success. Scholars continue to emphasise the importance of process aspects when it comes to understanding the creation of new ventures and the importance of adopting a systematic approach that investigates the interdependencies among different actors (Gartner, 1985; Aldrich and Zimmers, 1986; Moroz and Hindle, 2012; Shane, 2012). This approach adopted the classical literature of the RBV (Penrose, 1959; Barney 1991), assuming that nascent entrepreneurs can attain success in their business venturing attempts by enacting their resource endowments in a dynamic context, converting resources into capabilities in order to generate unique advantages, compensate for gaps, create a moderating effect, integrate contexts, extend knowledge, complement competencies and provide

valid alternatives that should maximise their chances of attaining success.

Adopting this dynamic approach acts as the main determinant of nascent entrepreneurs' capability to appropriate capital's attributes in a way that creates maximum utility. This field of analysis followed the management research work exploring the RBV (Amit and Schoemaker, 1993; Stieglitz and Heine, 2007) in combination with dynamic capabilities (Teece et al., 1997; Eisenhardt and Martin, 2000; Scott L. Newbert, 2005) to capture information that informs our understanding of entrepreneurs' aspiration, tenacity and capacity to found a new venture. Reviews of the literature consistently invite researchers to explore theory-driven programmes in entrepreneurship focusing on new insights, integration actions and dynamics in order to unlock its potential (Low and MacMillan, 1988; cited by Nanyang and Uhlenbruck, 2006). Moreover, Gartner and Shaver (2011) attributed the inconsistent empirical findings in Nascent Entrepreneurship to the focus on resource endowments in isolation from the process, which induces limitations in explaining its heterogeneity.

Therefore, this part of the modeling extends the investigation by examining how the interaction plays out as the process dynamics intersect with different forms of nascent capital (Start-up capital Attributes – HC, SC, CC), affecting the attained outcomes in new venture creation process. The empirical work in the entrepreneurship literature suggests that more dynamic theories about the new venture creation process are needed to reconcile essential insights and perspectives. Therefore, the proposed model follows Capelleras and Greene's (2008) and Capelleras et al.'s (2010) argument that new ventures do not simply come into existence by timing the entrepreneurial events, but instead they emerge on the basis of interactions between the building blocks (resources) at hand and process dynamics. Along this line of thinking, Fayoll et al. (2011, p.160) argued that the 'act of new venture creation does not relate to one single decision. Inaugural decisions and founding "ruptures" often result from a long and winding path. Comparable in that sense to the act of artistic creation, the act of new venture creation is not suited to simplifying causal analysis'. Therefore, the proposed model's objective is to identify the moderating dynamics that triggers the 'punctuated changes' at different modes in a way that defines their impact on the entrepreneurial outcomes.

The model explores the iterative patterns of the pursuit's actions that frame the 'emergence event' as coordinated and punctuated shifts in actions within a multi-modal organising frame, and hence, the key premise here is that some business founding attempts will be successful despite the lack of or abundance of resources. Therefore, the study focuses on exploring empirically how process

dynamics are situated in the process of new venture creation in a moderating way that creates the best fit with the start-up capital, affecting the propensity of attaining outcomes; rather than focusing on the presence or absence of actions (Davidsson, 2005). The key assumption here is that a substantial portion of the variation among enterprising individuals exist within the emerging process of new venture creation, where the actual capacity to transmit endowed resources (Start-up capital's attributes) into dynamic actions that operationalise the business opportunity matters the most.

Gordon (2012) argued in this line of thinking that active engagement in the process of venture creation acts as a compensating factor that offsets deficiencies in other forms of capital. This also agrees with Tornikoski and Newbert's (2007) notion that emphasised the importance of actions over and above the characteristics of resources in driving new venture outcomes. The benefit of the moderation model that employs dynamic actions resides in the fact that it coincides with the action mechanisms that reflects the emerging, active and dynamic nature of Nascent Entrepreneurship and their facilitation effects on ultimate outcomes.

Similarly, the proposed model draws on the 'momentum approach' that extends the static view of the antecedents into a dynamic view that synthesises start-up capital's attributes with process actions (Davidsson and Honig, 2003; Samuelsson and Davidsson, 2009). This approach also draws heavily on the work of Lichtenstein et al. (2007) who focused on the holistic effect of temporal actions. The premise in Lichtenstein et al.'s (2007) study relies on the notion that the new venture's momentum occurs on the basis of the totality of the dynamic actions. However, the proposed model deviates from this perspective by focusing on the complexity of the interaction between temporal dynamics and resource endowments.

The interactive approach deals with the limitations in the static approach, where'[k]nowledge is exemplified as rational, economic theorising in which it is treated mostly as a predictable variable of what becomes "factual" new venture creation' (Blackman and Imas, 2011, p. 104). Instead, the proposed model draws on the approach adopted by Blackman and Imas (2011) which introduced a new direction to explain the pragmatic issues in the new venture creation phenomenon. This approach adopted the 'dynamic dialogical understanding of knowledge creation' looking for unique combinations and new configurations that stimulate innovative interpretations about the central elements that appear to have better representation for the gestalt of Nascent Entrepreneurship. This approach, introduced by Nanyang and Uhlenbruck (2006), appears to overcome the constraints associated with the content models that focused on the antecedents and

consequences, overlooking the interconnectedness and dynamic nature of the process and therefore, to a certain extent, failed to inform us of the complex and emerging nature of the nascent entrepreneurial process.

Lichtenstein et al. (2006) embarked on analysing the complexity underlying the process dynamics by developing in-depth analyses of the longitudinal studies that theorised the dynamics linked to entrepreneurial organising and their impact on start-up efforts. They operationalised the emergence event in the new venture creation process by revealing the 'dialectical' and 'teleological' drivers of the emergence event to uncover the multi-layer dynamics of new venture creation in terms of its causal order. This order appears to rely on the emerging patterns of actions punctuated by coordinated and interdependent activities. These activities are: strategic organising, tactical organising and organising the vision. This notion suggests that the emergence event 'is not a subset of change, it reflects a different type of processes [that] implies the creation of a new conceptualisation, not always conscious, within which the entrepreneur's organising is re-contextualised' (Lichtenstein et al., 2006, p. 169).

3.3.1.1 Process Dynamics [PD] Moderation and New Venture Creation

3.3.1.1.1 [PD] - Gestation Action and Commitment

The conceptual framework in this study assumes that the interactions between the initial resource base of nascent entrepreneurs (HC, SC, CC) and process dynamics (see Figure 3.6) reflect how nascent entrepreneurs apply entrepreneurship and how they engage in unique combinations to extract benefits and attain outcomes by transiting the nascent business into an operational new venture (Ruef, 2005). By adopting the dynamic perspective, the model posits that nascent entrepreneurs are more likely to take iterative paths when launching new ventures by relying on effectuation (interactive-expert thinking) rather than relying on causation (planned-, predetermined thinking). The model assumes that putting the initial entrepreneurial resource base in action will turn their static nature into a dynamic medium that has considerable effect on mobilising the resource base, and accelerating their effects upon venture creation outcomes. This agrees with Gordon's (2012, p.9) statement that '[a]ction is the primary medium by which venture creation is achieved, therefore conceptual models must account for action in this manner'. The effectuation theory in this context assumes that the new venture's formation does not materialise along clear and predetermined bases, but instead emerges by exhibiting varying actions that constitute the difference between success and failure in new venture creation (Tornikoski and Newbert, 2007).

The most distinct and consistent determinant of venture creation success is the gestation actions and commitment that a nascent entrepreneur exhibits during the exploitation process (Carter et al., 1996; Liao et al., 2005; Lichtenstein et al., 2007; Gordon, 2012). Studies have indicated that the more active and committed the nascent entrepreneur is during the process of creation by achieving more gestation tasks, the more likely the nascent venture will attain success, transitioning from the nascent to the operational stage. Entrepreneurship studies posit that active and committed nascent ventures have a higher tendency to persist (Brush et al., 2008b) and that they are more likely to attain outcomes (Newbert, 2005). Previous studies distinguished successful from unsuccessful new ventures by contrasting the gestation activities that founders get commit to during the exploitation process. Empirical findings indicate that entrepreneurs who succeeded in establishing a business were engaged in carrying on more activities.

The general notion in the proposed model is that not just active and committed nascent ventures have a higher propensity of improved outcomes but also a greater likelihood of reaching a resolution in the gestation process (Parker and Belghitar, 2006; Gordon, 2012). These actions are temporal dynamics; therefore, the proposed model assumes that the nature of such effects may produce foresight that guides nascent entrepreneurs to abandon the venturing effort. This logic, according to Brush et al. (2008b), explains why some findings in the early research on Nascent Entrepreneurship concluded that successful attempts at founding new ventures were just as active as those that quit their business venturing efforts. This notion mandates further confirmation by exploring the interaction between process dynamics and the initial resource base endowed by nascent entrepreneurs (Carter et al., 1996), as presented in later sections.

3.3.1.1.2 [PD]- Gestation Duration

The duration of founding a new venture was explored in empirical entrepreneurship studies as a driving force for outcomes (Delmar and Shane, 2003; Delmar and Shane, 2004; Eckhardt et al., 2006; Brush et al., 2008b) and acknowledged as a vital element in understanding the entrepreneurship phenomenon (Bluedorn and Martin, 2008). Indeed, speed is recognised in the entrepreneurship literature as a distinct dynamic aspect when it comes to initiating active actions on a timely basis that aid entrepreneurs in accessing necessary information, building legitimacy, organising resources, exploring the business environment and dealing with emerging conditions and uncertainties inherent to the context of new venture creation (Lichtenstein et al., 2007). Research has examined the influence of gestation duration and indicates the variability of the period required for the attainment of outcomes (Reynolds and Miller, 1992), showing that

gestation duration varies from 1 month to 10 years. Liao et al. (2005, pp.13-15) attributed the variability of gestation dynamics to its nature as 'a complex process that includes more than simple, unitary progressive paths [and] a process where developmental stages are hardly identifiable'. Some researchers attributed the increased and optimised pace of action to the success in attaining positive outcomes (i.e. Lichtenstein et al., 2007; Gordon, 2012), while others found no empirical evidence with respect to the relevance of a higher pace of founding (i.e. Brush et al., 2008b).

Alternatively, Brush et al. (2008b) confirmed the encountered delays in transforming the conceived idea into practical efforts over a short duration as struggling ventures that have lower chances of attaining success (Townsend et al., 2010). But other studies viewed such delay as a learning experience that enables nascent entrepreneurs to utilise the extended time to evaluate the viability of the conceived idea, introduce changes that mitigate failure (Brush et al., 2008b), understand market conditions, reflect on the business venturing experience, rationalise the process of founding, build legitimacy, and negotiate new terms with stakeholders. The contradictory views at theoretical and empirical levels (Capelleras et al., 2010) appear to be attributed to variation in measures, population selection (Gordon, 2012), the effort exerted, nature of the business and its complexity (Samuelsson and Davidsson, 2009), level of commitment, innate sense of urgency, level of competition (Gordon, 2012), and the resources endowed by the business' founders (Perlow et al., 2002; Parker and Belghitar, 2006).

Thus far, there has been no consistency in terms of the relationship between new venture dynamics and endowment of resources (i.e. HC, SC, CC) and their combined effect on the speed of new venture creation (Capelleras et al., 2010). A higher pace of business venturing may create momentum that promotes nascent entrepreneurs to persist with the new venture's attempt (Sarasvathy and Dew, 2005) yet cannot guarantee the ultimate success of the endeavour. Therefore, despite the benefits of speed in founding the new venture, it may also be associated with limitations (Byabashaija and Schwab, 2008) that hinder the efficacy of its antecedents (resource base) if the best fit is not attained at the pace of founding used. Therefore, the study's model suggests that the outcomes driven by the initial base of resources are facilitated by the process dynamics as moderators rather than as direct effects.

3.3.1.1.3 [PD] - Dynamic Learning and Conceptual Changes

As Becker (1991, p. 45) posited, 'when people learn concepts, they learn a logical structure of

interconnected elements referring simultaneously to a set of abstract ideas and a body of interactional practice'. Dynamic-adaptive learning and the initiation of conceptual changes during the course of founding drive the stated interconnected elements, and therefore, learning by doing. These dynamic aspects introduce radical and incremental changes that are crucial aspects in enabling nascent entrepreneurs to apply, replicate and reproduce knowledge in abstract, specific and context driven forms. This contends with Aldrich and Yang's (2013) argument that nascent entrepreneurs' logic of action is attributed to the changes and dynamic nature of learning embedded in the heuristics, habits and routines accumulated over the course of their experiences and linked to their ecological rationality. In other words, dynamic mental frames allow them to form simplified models for decision-making under complex and uncertain situations, creating the best fit with existing resources. Therefore, 'nascent entrepreneurs learning slowly or not at all are more likely to fail and thus the story is one of initial heterogeneity in resources and capability being winnowed over time' (Aldrich and Yang, 2013, p. 21).

In this model, we choose to observe the effect of real-time learning and conceptual changes that reflect how nascent entrepreneurs reconsider and adapt their initial idea (opportunity) in order to make more sense of the dynamics that surround the venturing climate and to bridge the gap to bring the revised idea to fruition through abstract/conceptual thinking. The proposed model examines how such changes aid in mobilising endowed resources towards the attainment of outcomes in the process of founding a new venture.

3.3.1.2 "Start-up Capital" and Process Dynamics [PD] Forms of Interactions

3.3.1.2.1 [HC] X [PD- Moderation]

The relationship between [HC] and nascent entrepreneurial success is far from being completely understood (Ucbasaran et al., 2007). Despite the positive theorisations of the role of human capital, the congruence of extant empirical studies have failed to provide consistent compelling empirical evidence confirming the magnitude of the overall effect of [HC] on entrepreneurship success (Honig 2001; Davidsson and Honig, 2003; Busenitz et al., 2003; Florin et al., 2003; Parker and Belghitar, 2006; Deniz et al., 2007; Diochon and Menzies, 2008; Davidsson and Gordon, 2009; Brixy and Hessels, 2010). In effect, facets of human capital are not well understood in terms of their direct effects on driving new venture creation outcomes (Brixy and Hessels, 2010; Colombo and Grill, 2010; Davidsson and Gordon, 2011b). Inconsistencies are in part attributed to the gaps in human capital theory. For example, extant studies so far have shown limitations in explaining the distinctive effects of human capital's attributes, and largely failed to detect the significant

portion of human capital that clarifies why and what kind of human capital's attributes are associated with entrepreneurial success (Andriessen, 2004; Santarelli and Tran 2012). More comprehensive modelling is therefore necessary to addresses the cumulative and dynamic nature of [HC] that tests its potential in accumulating and extending existing and new knowledge (Ackerman and Humphreys, 1990). According to Davidsson and Honig (2003), '[t]he relationships between capital endowments and the fate of entrepreneurial ventures are not necessarily direct […] even if human capital is beneficial, it is only indirectly related to venture creation'. In short, the failure or success of new ventures does not appear to be related to deficiencies or abundance of resources, but instead, success or failure lies in their interaction with personal and dynamic attributes (Gimeno et al., 1997).

The integrative approach between [HC] and [PD] (see Figure 3.7) postulates that for nascent entrepreneurs to capitalise effectively on their initial stock of knowledge, a dynamic medium is needed to generate favourable results through the effective utilisation of nascent entrepreneurs' resources. Scholars appear to ascribe greater importance to human capital (Lam et al., 2007) due to its role in assimilating information, and deploying different attributes of knowledge in a dynamic and efficient manner that translates cues and combines resources in a way that maximises utility and builds long-term relations with stakeholders (Kugler et al., 2007). This, in turn, facilitates active founding in terms of actions, pace, commitment and learning. The model posits that knowledge and experience tend to have a limited role if they are not placed in direct contact with the founding process, or else may be associated with irrelevant impacts. This agrees with early studies which indicated that the derived influence upon the speed of business launching at the pre-startup stage depends on the quality and nature of knowledge and experience (Hansen and Bird, 1997). Thus, process dynamics appear to act as a platform for enacting prior knowledge and experience in a way that distinguish the outcomes of new venture creation process.

Deriving outcomes in the context of Nascent Entrepreneurship is a function of the interaction between prior knowledge and time allocation (Cooper et al., 1997). For example, previous studies confirmed empirically the positive and significant relationship between the pacing of the start-up and the founders' specific training in business (Davidsson and Honig, 2003), specific experience in management (Hansen and Bird, 1997), and prior exposure to business start-ups (Capelleras and Greene, 2008). The initial stock of knowledge allows nascent entrepreneurs to access more elevated levels of human capital that are associated with cognitive and physical advantages (Slavec and Prodan, 2012). This, in turn, enables them to form reliable perceptions of uncertainties

(McMullen and Shepherd, 2006), coordinate resources, handle interrelated tasks (Unger et al., 2006; Kugler et al., 2007) and ultimately accelerate the pace of exploitation and developments (Hayton, 2005).

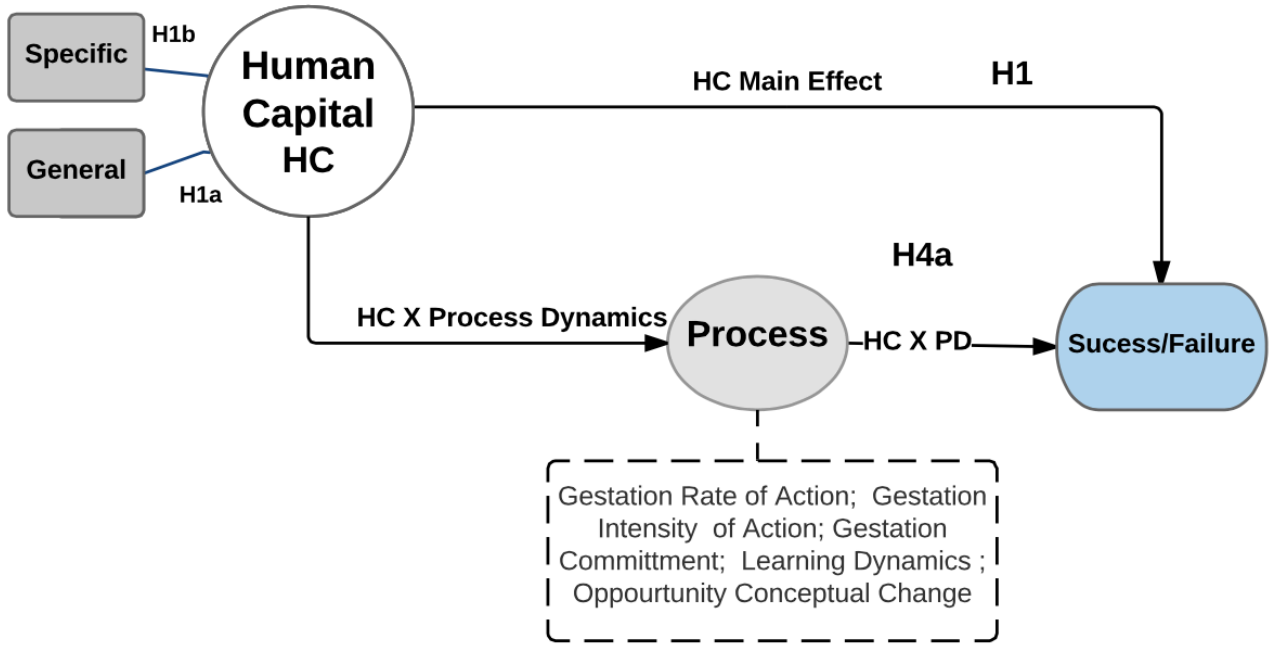
The [HC X PD] interaction posits that prior knowledge and experience provides nascent entrepreneurs with confidence in the 'unfolding promise of their venture idea', and fosters the efficient allocation of effort allowing them to be more productive (Dimov, 2010). The dynamic interaction enables enterprising individuals to persist, learn and bridge gaps in existing knowledge (Jovanovic, 1982; Hebert and Link, 1988; Reynolds 1993; Holmes and Schmitz 1996; Taylor 1999; Bosma et al., 2004; Santarelli et al., 2009; Santarelli and Tran 2011; Santarelli, and Tran 2012). This agrees with Noke and Chesney's (2014, p. 403) statement that 'creating a new business is a process fraught with difficulty and failure; the more knowledge of the process a nascent entrepreneur can gain pre-startup, arguably success will be more likely'.

In the literature, the actions attempted by entrepreneurs who are endowed with enhanced experience and qualifications appear to differentiate their new venture creation experience as they tend to exhibit a better understanding of the information that enhances their capacity to persist and become more efficient and active during the venture's creation (Davidsson and Honig, 2003; Ucbasaran, 2004; Delmar and Shane, 2004; Westhead et al., 2005). On the other end, dynamic actions enables nascent entrepreneurs to engage in gestation activities and experiential learning that increases their intellectual ability to apply and integrate knowledge, accumulate experiences, optimise start-up processes, allocate efforts and mobilise resources efficiently in order to create maximum utility that ultimately drives the exploitation action towards fruitful resolution (Davidsson and Honig, 2003; Gordon, 2012).

Clearly, the interaction with process dynamics can stimulates hidden strengths and limitations inherent in the linear form of human capital. Therefore, the proposed model tests the moderating effect of process dynamics upon the relationship between [HC] and new venture creation outcome, proposing the following hypothesis:

H4a: Nascent entrepreneurial process dynamics moderate the relationship between human capital and the outcome of new venture creation process

Figure 3.7: Human Capital and Process Dynamics Interaction Model



3.3.1.2.2 [SC] X [PD - Moderation]

Social capital is an evolving resource with a generative nature that tends to become more complex as the founding process unfolds (Grossman et al., 2012). The central argument here is that [SC] is a productive resource that involves different meanings, complexities and multi-dimensionalities that necessitate a deeper look at its interactions with the dynamics in order to support the realisation of the new venture (Tanas and Saee, 2007; Light and Dana, 2013). However, despite the pervasiveness of the network concept and its increasing popularity, understanding how social capital turns into instrumental utility remains debatable, less visible, and biased through its descriptive qualities (Honig and Karlsson, 2004; Van Gelderen et al., 2005; Tornikoski and Newbert, 2007; Gordon and Jack, 2010). The literature appears to be silent on how social capital can be deployed in the presence of dynamics, and interactions with other forms of capital, where nascent entrepreneurs must be able to respond to variations and readily changing conditions (Tanas and Saee, 2007; Light and Dana, 2013).

In reality, [SC] encompasses human actions and cognitions that are shaped by societal factors, which indicates that the concept of social capital is inherently figurative-dynamic. This reflects the dynamic nature of [SC] (see Figure 3.8) that appears to play a key role in explaining the complexities embedded in new venture creation, and the attained outcomes. Social capital can be

viewed as the context complementing other forms of knowledge, where knowledge creation process is argued to be a function of the dynamic and emerging patterns of entrepreneurial behaviours. These emerging social patterns are associated with a greater capacity to absorb, accumulate and integrate knowledge that enables receptivity to learning during the business' formation and therefore actualises the opportunity at a higher pace of founding. Social capital improves adaptability to change and receptivity to learning by the mobilisation of social resources (Skerlavaj et al., 2007; Bratkovic et al., 2009) making entrepreneurs more open to external knowledge as they participate in the exchange of experiences (Metz and Thareneu, 2001), and knowledge transfer (Kwon and Arenius, 2010; Ramos-Rodríguez et al., 2011; Schenkel et al., 2012). The stated argument agrees with the Social Information Processing Theory that portrays knowledge creation as an individual's ability to combine and exchange various forms of information, where the creation of social knowledge might be best theorised as a result of a 'combination' of interactions (Bathelt et al., 2003). Nahapiet and Ghosual (1998) refer to Social Informational Processing as a diffusion that takes place when entrepreneurs interrogate, combine and exchange information, resulting in knowledge creation. Social-dynamic interaction appears to be evident in 'accelerating the timing, relevance, and quality of information' (De Carolis, 2009, p. 530).

Therefore, it is theorised that nascent entrepreneurs who have access to general and instrumental forms of social support tend to draw on broader social connections that allow them to increase the pacing of the start-up (Davidsson and Honig, 2003; Matzek et al., 2010) that maximises the propensity for action and subsequent success within a dynamic and coordinated context (Gorton, 2012; Samuelsson and Davidsson, 2009; Patel and Fiet, 2009). Indeed, [SC] is not fixed and can be viewed as the accumulation of dynamic relationships that are driven by process aspects (Granovetter 1985; Jack and Anderson 2002). This is seen in the light of social constructionism theory, which is grounded in the work of Berger and Luckman (1967) and discussed in Alvarez et al. (2013, p. 307) who argued that:

> *"all knowledge—from common every-day experiences to the most sophisticated results of scientific research—is derived from and maintained by human interactions. These interactions give meaning to the world around us. Without this meaning, and the language that emerges from our shared understanding of this meaning, it is not even possible to discuss the nature of reality. That is, opportunities become meaningful for entrepreneurs once they become part of the socially constructed reality of the society in which the entrepreneur lives. Thus, opportunities only take on the potential for generating economic wealth once they become part of that socially constructed reality. Called the enactment process, Weick (1979) described how the behavior of an actor creates the environment within which that actor behaves."*

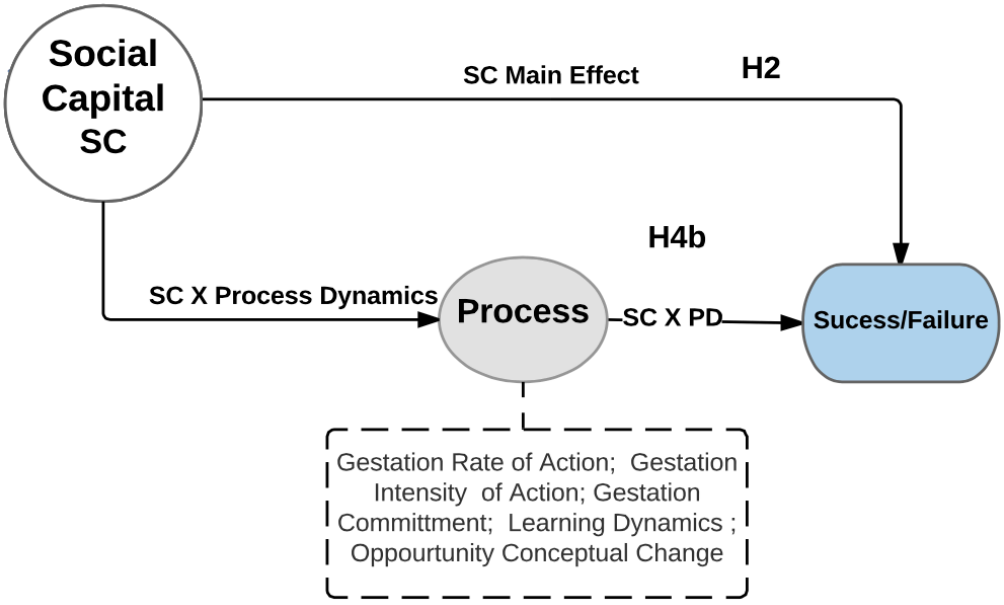
Empirical findings in the domain of Nascent Entrepreneurship have asserted the role of the social models that nascent entrepreneurs draw on to access physical and emotional support and how it helps them to persist (Davidsson and Honig, 2003) and remain active in their entrepreneurial efforts (Gorton, 2012). This indicates that when social capital comes in direct contact with the business dynamics at the pre-startup stage, it becomes an efficient means of accumulating and extracting value residing in the social system, driving actions forwards in a manner that leads to a final resolution.

We posit here that the process-moderating medium aids nascent entrepreneurs to enact their social capital by accessing idiosyncratic resources and information on a timely basis (Patel and Fiet, 2009) that matches the pace of the founding process. Thus, these dynamics should help them to utilise social relations efficiently, sustain their business-creation momentum and as such improve their chance of success.

The proposed model tests the moderating effect of process dynamics upon the relationship between [SC] and new venture creation outcome, proposing the following hypothesis:

H4b: Nascent entrepreneurial process dynamics moderate the relationship between social capital and the outcome of new venture creation process

Figure 3.8: Social Capital and Process Dynamics Interaction Model



3.3.1.2.3 [CC] X [PD- Moderation]

The entrepreneurship field emphasised the personal traits of nascent entrepreneurs until Gartner (1988) introduced a new approach, suggesting that for the phenomenon of new venture creation to

be fully explored, scholars had to pay more attention to other fundamental issues and specifically psychological characteristics that come into play when nascent entrepreneurs engage in the process of founding a new venture. It is worth noting that, the value of cognitive human capital is continuously changing because the internal cognitive composition is dynamic and because the external business environment demands regularly changes as well. Therefore, the capability to understand Nascent Entrepreneurship phenomena and respond to gaps by finding the best fit between resources and process dynamics is necessary for nascent entrepreneurs to maximize the value of the resources and increase the likelihood of success.

Accordingly, the interaction between [CC] and process dynamics (see Figure 3.9) engages nascent entrepreneurs in active attempts to bridge different forms of external and internal knowledge to inform their sense of business reality and initiate behavioural patterns that question the assumption underlying their entrepreneurial judgment. This agrees with Shaver and Scott's (1991) notion that '[s]pecification of the process by which the external world becomes represented in the mind is the first of psychology's core concerns that is fundamental to a psychological approach to new venture creation'. Considering the criticality of new venture creation in entrepreneurship research, scholars made early attempts in which they focused on new venture creation aspects from the cognition perspective that explore how cognitive differences among entrepreneurs can act as instrumental factors in distinguishing their gestation behaviours (Mitchell et al*.,* 2002), yet the field still suffers from a lack of robust empirical models, and this acts as a limiting factor in linking cognition science to dynamic entrepreneurship.

In essence, the launching process of new ventures revolves around entrepreneurs' perceptions and dynamic learning. Entrepreneurial cognitive learning could act as a form of cognitive capital that questions deep beliefs and assumptions as it interacts with the dynamic process, social and knowledge structures, leading to an iterative restructuring of knowledge. Entrepreneurial cognitive learning informs the entrepreneurs' mental schemas (Kim, 1993) allowing them to transit into different mental states that alter perceptions to fit existing reality (Katz and Shepherd, 2003). Entrepreneurial cognitive learning in this respect acts as an intervention technique that aids nascent entrepreneurs in identifying and correcting cognitive biases. Researchers argue that forming perception on the basis of entrepreneurial judgement may be associated with cognitive biases and faulty assumptions (Baron, 1998; Zhang and Cueto, 2017). Nascent entrepreneurs should, therefore, engage in dynamic cognitive learning to adjust their perceptual biases and false assumptions, creating the best fit between entrepreneurial judgement, knowledge structure and

business reality. Cognitive learning is the type of dynamic that involves reassessment that can result in a shift in the mental map that guides how individuals perceive the business-venturing situation (Lichtenstein et al., 2003).

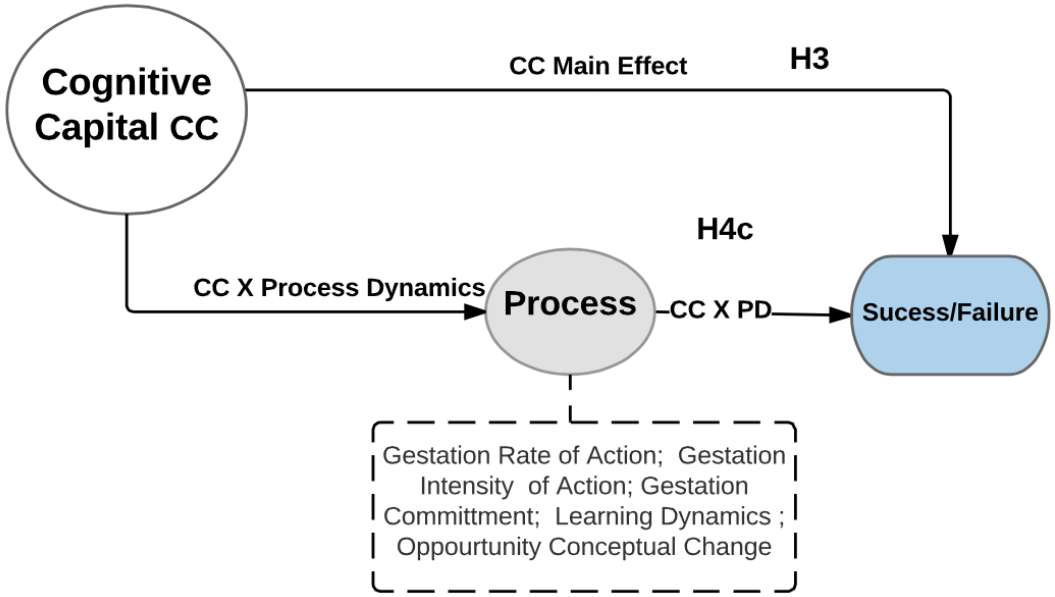
The dynamic-cognitive experience is a competence that facilitates entrepreneurs' ability to adapt to a variety of contexts, make better sense of reality (McGrath, 1999) and hence become less susceptible to cognitive biases (Fraser and Greene, 2006). Economists support the view that entrepreneurs learn and adapt concurrently and this leverages their capacity to change rationale, cognitions and behaviours based on accumulated experiences that make them better aware of their own strengths and weaknesses and in turn aids them in forming realistic expectations (Jovanovic, 1982). This dynamic-cognitive learning experience stems from success and failure as entrepreneurs adopt open minded and flexible mindsets towards business venturing quests. These views are congruent with Hmieleski and Baron's (2009) argument that circumstances come into play and alter the consequences linked with cognitive learning.

The proposed model in this study posits that the alteration of conceptual-cognitive thinking is a dynamic learning process that could be understood by exploring the interaction between entrepreneurial cognitions discussed in the previous chapter and the emerging dynamics of the entrepreneurial process that hold varying degrees of fit. The interactive process, therefore, in effect, acts as the catalyst that alters fallacious assumptions and chaotic interpretations and replaces biases with new and relevant knowledge that has the potential to bridge gaps and attain outcomes. This agrees with Simon and Houghton's (2002) notion that misjudging the need for complementary resources can contribute to misperceptions by creating an overly simplistic view of a very complex situation especially if the nature of the venture is associated with novel conditions that impede entrepreneurs' accessibility to established business models and frames of reference. Therefore, to enable effective cognitive learning, entrepreneurship must foster integration with other dynamics and knowledge structures in order to attain creativity, flexibility and willingness to change (Lichtenstein, 2003).

The proposed model tests the moderating effect of process dynamics upon the relationship between [CC] and new venture creation outcome, proposing the following hypothesis:

H4c: Nascent entrepreneurial process dynamics moderate the relationship between cognitive capital and the outcome of new venture creation process

Figure 3.9: Cognitive Capital and Process Dynamics Intreaction Model



In all, nascent entrepreneurs who have access to start-up capital resources are more likely to become active and be driven by the new venture creation dynamics (Gordon, 2012). The main premise here is that process dynamics carry strong potential to convert the resource base of nascent entrepreneurs into a necessity for action, avoiding the static view of its linear form. This is not an attempt to diffuse the tensions of unpredictability but in its more sophisticated form addresses the resource openness to the dynamics of the external environment (Leadbeater, 1999). According to Gordon (2012), the interaction between process dynamics and resource endowments are shown to exhibit varying effects that have their roots in nascent entrepreneurs' ability to create the best fit between process dynamics and the resource base. This dynamic assumption holds taking into consideration that the worth of endowed resources in driving the venture creation may vary and shift direction of influence as the process dynamics unfold over time. This notion was confirmed by Davidsson and Honig's (2003) empirical work which indicated that 'the further into the start up process one gets, the more specific and idiosyncratic will be the resources and information needed for further successful completion of the process' (p. 303). As such, the resource base is limited by the dynamics embedded in the emerging actions that nascent entrepreneurs initiate during the course of business founding. This indicates that driving the resolution of the new venture creation process is a function of the balance maintained between the start-up resource base and the variability embedded in the dynamic actions that appear to reduce the uncertainties to a level that drive the conclusion of the process.

As a result of the preceding argument, and the related hypotheses (H4a, H4b, H4c), the following

hypothesis is proposed:

> **H4:** Nascent entrepreneurial process dynamics moderate the relationship between the start-up capital's attributes and the outcome of new venture creation process.

Having examined each separate element (human, social and cognitive-based capital) and their interactions with process dynamics for potential factors associated with new venture creation success, the remainder of this chapter brings the significant main predictors together [HC, SC, CC]. The proposed model demonstrates that each element plays an important role in venture creation; therefore, it is necessary to combine them and analyse them together. The idea is to pit success predictors from each element against each other to identify the combinations that are most strongly associated with favourable outcomes (success/failure of business launching). To do this, we derive separate integrative models, combining successful predictors from the linear models discussed in earlier section.

3.3.2 Integrated Modelling (II) – ["Start-up Capitals" Interplay – New Venture Creation Outcome] Relationship

There is no doubt that the success of new ventures in the launching process depends on a broad range of factors. Start-up capital resources and process dynamics discussed in the preceding sections are only one part of the picture. For a more convincing test of new venture success, it is necessary to have a model that accounts for the combined/moderating effects among start-up capital resources themselves. In the third stage of model testing, a model is created that brings together all of the successful start-up capitals' attributes with the strongest overall drivers of outcomes identified in the first stage of model testing as illustrated in Figure (3.10).

On the basis of the RBV, research has focused on 'appropriability mechanisms' to reveal how individuals capitalise on resources to create value (Foss and Foss, 2008). Prior studies adopting this approach were mostly investigations in isolation from one another (Fischer and Henkel, 2010). The proposed model aims to fill this gap by analysing interactions between start-up capital's attributes that aid nascent entrepreneurs in creating value – so-called appropriability mechanisms – and in turn attain success in the creation process of new ventures. The proposed integrated model in Figure 3.10 seeks to identify the different forms of capital (HC, SC, CC) that combine to create unique knowledge and where a true advantage can be discerned from their pattern of interactions that in reality cannot be isolated (Welsch, 2005). Indeed, it is not the linear factors of one type of capital that are associated with new venture success; rather, it is the interdependence between

different forms of start-up capital and how different parts of those capitals fit each other. This is viewed as a vital contribution that extends theoretical and empirical insights beyond direct, additive and linear relationships (Davidsson, 2004a; Davidsson, 2005b) to determine the right mix of attributes that are critical in assessing how well those attributes function and evolve to drive success in business launching.

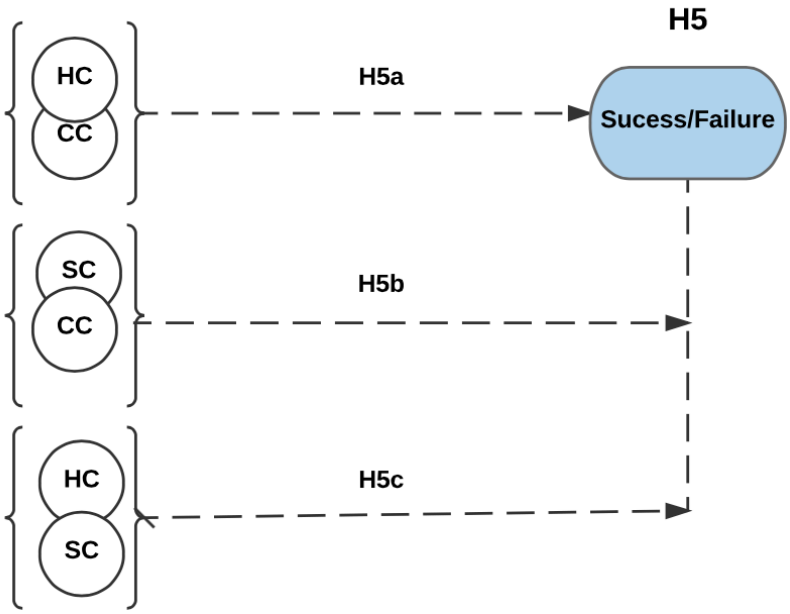
This integrated modeling contributes to the research on new venture creation by exploring and establishing evidence for the interrelationships between human, social and cognitive-based capital, and how these links, particularly in terms of their interactions with cognitive states, drive the resolution of the new venture creation process. The proposed model follows the suggestion of Baron and Ward (2004) in exploring the interaction effect between cognitive patterns and the type of knowledge the entrepreneur possesses. This effectively pits human, social and cognitive variables against each other to determine which combinations/moderations have the strongest overall integrative power on the outcome of the new venture creation process. This integrative thinking is based on the Schumpeterian tradition in which the enterprising individual is described as the key player in the economic development, where entrepreneurs embark on creating new combinations based on the inputs of endowed resources. It should be noted that not all nascent entrepreneurs possess the same capabilities. For example, some nascent entrepreneurs may be well educated, trained and come from a family business yet lack the ability to integrate start-up resources in a way that aids them to achieve success despite a wealth of relevant experience or knowledge. As noted earlier by Bandura and Locke (2003), individuals can demonstrate different levels of self-confidence despite similar levels of knowledge or experience, showing variations that reside in their entrepreneurial ability to exploit, integrate and extend knowledge in a way that aids them to maximise utility.

The aim here is therefore to observe the cumulative and integrative nature of nascent entrepreneurial start-up resources (Ackerman and Humphreys, 1990). The model posits at this level of analysis that combined knowledge equips nascent entrepreneurs with the fundamentals and high-level exposure that enables them to establish a holistic view of their opportunity thereby allowing them to handle generic tasks and routine activities. For example, the technical factors of founding a new venture are sometimes sophisticated and require substantial expertise that resides in other forms of start-up capital's attributes. This indicates that it is not nascent capital's attributes in their mere form that create value but rather the heterogeneity of these attributes that distinguish nascent entrepreneurs' innate abilities, enabling them to make optimal choices and create new

paths of action that extend the potential for existing knowledge. This ultimately brings the process of creating a new venture to a conclusion.

Correspondingly, understanding how nascent entrepreneurs feel, think and make decisions in terms of cognitions is imperative to systematically illuminate the nascent entrepreneurship stream of research. Cognitive aspects in this study are assumed to be key start-up resources that serve as sort of enablers. The interactive effect of each aspect of cognitive capital and start-up capital on entrepreneurial success is limited (Mitchell et al. 2007). There are still gaps in the literature regarding the role of cognitions in driving the outcomes of new venture creation. Despite the attention that has been paid to the cognitive biases associated with the entrepreneurial process in the context of entrepreneurial decision-making and risk taking, there have been limited contributions to the literature regarding the cognitive impact on other forms of knowledge. Therefore, in this study, a special focus is also given to the cognitive lens by investigating its moderating effect on the relationship between start-up capital's attributes [SC, HC] and the outcome of the new venture creation process.

Figure 3.10: [HC-SC-CC] Interaction/Moderation Model



In the present analysis, we view cognition capital as a key component of entrepreneurs' vision that emerges as new ventures are founded. The vision is explored through the interplay with other forms of nascent capital (HC-SC) that aids nascent entrepreneurs in conceiving mental models. The central argument here is that this cognitive vision is subject to continuous expansion and alteration that influences the emergence of the vision as an outcome (Carland and Carland, 2000).

This agrees with Sarasvathy et al.'s (2010, p. 90) description of this interaction as new ends that 'emerge endogenously within a process of interactive human action (based on heterogeneous preferences and expectations) striving to imagine and create a better world'. According to Alvarez and Barney (2007), the base of this endogenous force is the cognitive capacity of entrepreneurs. Exploring the moderating effect of cognitive-based capital on other forms of start-up capitals' attributes (HC, SC) is a novel contribution in this study that should inform our understanding of how nascent entrepreneurs with comparable bases of knowledge, experience and social resources can be associated with varying entrepreneurial capacities.

Entrepreneurship cognition has its roots in organisational and managerial cognition (Forbes, 1999). The cognitive aspects employed in this study's model are related to the mental maps, expectations, biases and desires that the nascent entrepreneurs rely on to interpret and analyse emerging trends and information that were detailed in the earlier section of this chapter. Assessing cognitive capital in the context of new venture creation is particularly complex, primarily because these cognitive aspects are usually not yet consolidated due to the short time that new ventures in gestation have to internalise and extrapolate facts and cues that inform entrepreneurs' understanding of the business-venturing situation. According to Forbes (1999), 'little is known about what goes on in the mind of individuals who create new organisations' (p. 415). He further indicated that cognitive capital's interaction with other forms of capital (HC, SC) informs our understanding of how business reality and prior knowledge intersect with nascent entrepreneurs' mental states enable them to deal with the ambiguity and uncertainty inherent in the business formation process as they develop the interpretative framework that forms their cognitions. This agrees with Gartner et al.'s (1992, p.17) view that 'emerging organisation[s] are [an] elaborate fiction of proposed possible future states of existence', and Kind and Decicco*'s* (2009, p. 69) definition of cognitive capital as 'a set of mental capacities which contribute to the awareness, integration and adaptive application of the nonmaterial and transcendental aspects of one's existence, leading to such outcomes as deep existential reflection, enhancement of meaning, recognition of a transcendental self and mastery of a spiritual state'.

This study's model (see Figure 3.10) posits that the interactions between start-up capital's attributes contribute to building perceptions, integrating knowledge, compensating in part for deficiencies in other forms of knowledge, and facilitating conflicting signals between prior knowledge and cognitions. In other words, new venture creation is viewed as a process of knowledge creation (Nahapiet and Ghoshal, 1998; Liao and Welsch, 2005), and the optimal

interaction in the resource base's attributes can considerably affect the different precedents to knowledge exchange and combination, including accessibility to information, receptivity to learning and appropriateness.

3.3.2.1 Human Capital - Cognitive Capital Interaction [Cognition Moderation]

Human capital (as measured by experience and education) alone cannot interact with the social reality of which it is a part. Therefore, entrepreneurs should capitalize on their cognition, and that is the mental processing of knowledge that utilises, reflects, senses, stores, retrieves, transforms and enacts accumulated knowledge in a dynamic way. The cognitive capital is a conscious and unconscious processing that acts as a framework within which human capital might be used, based on mental cues (Gioia, 1986). The interaction between the traditional (static) form of human capital and the dynamic form of cognition would aid nascent entrepreneurs to interpret, maintain, transform and integrate knowledge. Thus, cognitive capital in this context distinguishes between which human capital to process, which human capital to look for, which human capital to enact, and which human capital to dispose.

Clearly, the utilisation of cognitive capital as an integral component of business founding process is clearly relevant today. The complex nature of entrepreneurship has also motivated scholars to better understand and utilise the cognitive competencies of their human resources, such as knowledge, experience, and the ability to learn, as their most important qualities of success. Cognitive capital is central to the value derived from human capital as it steer the scope and direction of knowledge in action. Cognition embodied knowledge is regarded as resource (Barney, 1991); and considered to be fundamental in transforming and enacting resources and competencies in the formulation and execution of the business founding strategy. For example, the knowledge based view of the firm (Kogut and Zander, 1993) viewed cognition as enabler for effective exchange of information among the constituent employees. Cognitions in the context of nascent entrepreneurial capital may also suggest that the boundary of the success and failure in founding a new venture is predicated on the ease with which knowledge is transferred between different forms of resources. Hence, cognitive capital is a key resource to the processing of knowledge, experience and information necessary to navigate productively in today's complex business environment.

Organizational behavior scholars and psychologists and have made significant contributions to our understanding of entrepreneurs behavior, knowledge, and mental cues. Scholars have suggested that human capital that is specific to any entrepreneur is unique, because each

entrepreneur's sense making and interpretation of the knowledge and the observation of the environment around them is predicated on the unique cognitive schemas and behaviors in which entrepreneurs engage. This indicates that a reciprocal interrelationship may exist between human and cognitive forms of capital. The relationship between human and cognitive capitals has been theorized to be reciprocal, as cognitive elements appear to guide the receptivity of learning, and this in turn lead to a new knowledge and informed action (Kang et al., 2007). This agrees with Brymer, Hitt, and Schijven's (2011, p.8) argument that '[a]lthough knowledge and cognitive capabilities have potential value embedded in them, much like any other organizational resource, little or none of this potential value will be realized unless they are bundled with other resources'. Cleary, metacognitions (cognitive processes) affect the way knowledge is translated into action and that lead to a unique and dynamic knowledge held by each entrepreneur (Lei et al., 1996) and this in turn steer the actions of learning, and lead to new knowledge (Kang et al., 2007).

Moreover, entrepreneurship scholars proposed various relationships between human capital and cognitions but yielded inconclusive findings. The research appears to posit that human cognition in part influences prior knowledge [HC], where a significant portion of this knowledge is embodied in the cognitions of the entrepreneur (Hitt et al., 2001). This is expected because after all cognition '[i]s the act of knowing [and] that is fundamentally involved in knowledge processing' (Brymer, Hitt and Schijven, 2011, p. 2). Cognition in this context is a form of entrepreneurial experience, and that is defined as the individual's "[i]nteraction with objects, entities, and/or events in her/his environment" (Lombard and Synder-Duch 2001, pp. 58–59). For example, Macmillan et al. (1987) argued that entrepreneurs appear to rely on intuitions to inform their practical form of experience. In a complementary vein, Koellinger et al. (2007) argued that nascent entrepreneurs appear to show more confidence as opposed to serial entrepreneurs that in turn promotes them to apply their skills, knowledge, and experience to the entrepreneurial process. This agrees with Sommer and Haug's (2011) argument that the perception of confidence is in many cases more critical to entrepreneurial process than the actual knowledge/experience in terms of explaining attained outcomes.

In contrary, research (i.e. Zacharakis and Shepherd, 2001) has also shown insignificant relationship between the entrepreneur's practical experience and cognitions (i.e. overconfidence). Clearly, human capital in terms of knowledge and experience appears to be a complex concept (Shepherd et al., 2003) and apparently, this may also be true for the case of nascent entrepreneurship, offering a promising avenue for research about the integrative perspective of

entrepreneurial capital. Along this line of logic, the proposed model suggests an alternative direction that investigates not only human capital as an antecedent of cognitions but also the interaction effect of human capital and cognitions on the outcome of new venture creation process.

The model proposes that human capital (knowledge) is 'highly personal [and] often embedded in an individual's cognitive processes' (Sommer and Haug, 2011, p.118). [HC] is shaped by the individual's desires, needs, motivations and perceptions. 'These personal factors imply that there is sort of cognitive process working incoming stimuli where at the end of which a new, personalized object has been generated which can be stored and further manipulated' (Sommer and Haug, 2011, p.118). Cognitive knowledge therefore may be indeed an integral part of human capital development. This posits that the interaction between cognitive and human capitals has a distinguishable effect upon the outcome of nascent ventures. The early theorisation of human capital presented by Becker (1964) viewed individuals' cognitive ability as a function of human capital. This argument was based on the assumption that higher endowment of cognitive abilities tends to promote the investment in human capital, and at subsequent stages acts as a significant predictor of individuals' actions in different contexts, for example the attainment of practical knowledge (Hunter, 1986), training (Schmidt and Hunter, 1998) and success in performing general tasks. The empirical study conducted by Ucbasaran et al. (2010) investigated 567 entrepreneurs in the UK to explore at a granular level the experience of business ownership and its effect on entrepreneurs' propensity to acquire cognitive biases.

The findings present contrasting views and conflicting theoretical and empirical findings, but generally emphasise that entrepreneurs with prior venturing experience are more susceptible to cognitive biases (Tversky and Kahneman, 1974). In contrast, entrepreneurs who are endowed with prior ownership experience (failure status) and rely on comparative optimism were associated with positive outcomes. The latter case apparently acts as a cognitive learning experience that seems to reduce the gap between the cognitive assumptions (biases) and reality. Failure experience in this respect is viewed as a cognitive learning that facilitates reflection on prior experiences that tend to balance entrepreneurs' cognitive limitations and increase their capacity to become more realistic about their own skills, capabilities, knowledge and expectations (Ucbasaran et al., 2009). Despite the argument that cognitions may be associated with inflated negativity and biases that can hinder effective learning (Weinstein, 1980), the literature generally supports the notion that individuals tend to depend on established knowledge structures, thinking patterns, routines and procedures but once confronted by the emerging cognitions, entrepreneurs are prone to rethink and question prior assumptions, perceptions and thinking preferences (Levitt and March, 1988). Therefore, Shepherd

(2003) and Ucbasaran et al. *(*2011) asserted the view that entrepreneurs with prior experience are endowed with dynamic cognitive learning that allows them to reassess the venturing experience. In the same line of argument McGrath (1999), argued that individuals with less experience are more prone to conforming to their previous actions (cognitive biases) and misattributing success.

The present model argues that effective utilisation of the cognitive capital dictates the realised value of human capital. Cognitive capital appears in different forms, for example the 'ability to combine different types of information, the application of rules and solutions to a new and different situation, the mental creation of symbolic representation for problem-solving, and the detachment of thought from raw sensory and perceptual input' (Hauser, 2008, cited in Brymer, Hitt, and Schijven, 2011, p.4). Hence, unlike other forms of capital, cognitive aspects of human behavior is capable of a number of value-adding tasks that involve cognitive functioning, such as complex reasoning, socialization, innovation, integration, knowledge sharing and purposeful enactment of one's resources (Pulakos et al., 2005).

This in turn postulates that the interaction between human capital and personal cognitions serves as a basis for creating and enforcing specific values, norms and expectations that promote reciprocity and cooperative actions. This interaction can sets frames of reference for thinking and decision-making that serve as effective guidance for entrepreneurs' sense making and hence provide them with the opportunity to internalise practices inherent to their socio-cognitive medium. We believe that the interplay between human and cognitive capitals engages nascent entrepreneurs in an evaluative context that combines human intelligence and cognitive sense making in a way that aid them to attain optimum knowledge. This logic of thinking confirms the findings in an Austrian longitudinal study of 290 entrepreneurs that was conducted over a period of three years from 1998 to 2001 by Kessler and Frank (2004). The findings concluded that experience combined with entrepreneurial thinking act as significant predictor of success in the founding of new ventures. This suggests that cognitive and human capitals are associated with reciprocal relationships that tend to be framed along complementarity lines, where educated and experienced nascent entrepreneurs seek signs of conformity with their cognitive profile that guides their decision to perservere, drawing on their prior knowledge. Conversely, any lack of conformity can also prompt nascent entrepreneurs to reassess the viability of opportunities during the pursual process, averting false positive assessments.

The proposed model posits that the moderating effect of cognitive capital on [HC] dimension could mirror nascent entrepreneurs' orientation towards reflective thinking as they make inferences and sense cues from the manifestation of metacognitive activities. Metacognition encourages nascent entrepreneurs to engage in critical tasks that allow them to entertain thoughts, identify patterns and explore meanings embodied in prior knowledge [HC] and in turn paves the way for the successful transformation of experiences into new knowledge that has the potential to promote the propensity of attaining success (Kolb, 1984; Keith and Frese, 2005). Clearly, the cognitive aspects of human capital can lead to distinctive configurations of interdependence that in turn aid entrepreneurs to optimize the total utility of human capital (Brymer, Hitt, and Schijven, 2011).

H (5a): The combined effect of human and cognitive capitals is a significant predictor of the outcome of new venture creation, greater than their main effects, and the combined effect is moderated by cognitive capital.

3.3.2.2 Social Capital - Cognitive Capital Interaction [Cognition Moderation]

Despite the strong theorising effort, entrepreneurship research exploring the effect of social capital on the entrepreneurial outcomes has not yet amassed a consistent empirical foundation on which to build conclusive interpretations on how social experience could increase or decrease chances of success. Based on the work proposed by De Carolis and Saparito (2006) on the role of social and cognitive capitals in predicting entrepreneurial progress, we propose and test an integrated model of new venture creation that considers the combined effects of these attributes on the outcomes of the new venture creation process. According to Cohen and Levinthal's (1990) argument, social capital in an entrepreneur's network allows access to various information sources, increasing the entrepreneur's confidence about his or her knowledge base. We expect that entrepreneurs with the greatest social capital, coupled with the enhanced cognitive ability will make the greatest progress in creating a new venture (De Carolis et al., 2009). Scholars have argued that new venture creation is a function of the interplay of social capital and cognitions (De Carolis et al., 2009). Minniti (2004), for example, investigated cognitive ability as a function of prior entrepreneurship social role models that enhance their entrepreneurial judgement. This combination has its roots in entrepreneurship cognition and socio-cognitive theories (see chapter 2) that investigate how nascent entrepreneurs blend into a variety of social and business settings in response to cognitive cues that promote or hinder their entrepreneurial capacity.

Social-cognition theory (Bandura, 1986) suggests that the efficacy of the cognitive knowledge (i.e. desires and confidence) is presented in this research as the moderating medium that facilitates

the use of social knowledge leading to productive action. As such, cognition can acts as a 'transformative process' between social reality and action or choices (socially constructed knowledge) in a way that supports norms, values, cooperative behaviors, and socialization patterns nested in the social community (Brymer, Hitt, and Schijven, 2011). Research shows that cognitive thoughts and emotions have effects on social tasks (Watson et al., 1992), which in turn can determine the extent to which social knowledge is enacted. Drawing from the research on socio-cognitive theory, we argue that the interpretation of new venture creation outcome depends on the extent of the match between the social ecologies and the evolutionarily adapted mechanisms that underlie the entrepreneurial cognitions. The proposed model argues that cognitive psychology (hereafter cognitive capital) provides '[a] unique, practical, and empirically testable perspective' (Zhang and Cueto, 2015, p.419) under equivocal and complex decision contexts; consequently, nascent entrepreneurs become more likely to conclude the process of new venture creation. The central argument here indicates that different societies appear to hold different views and expectations for who the nascent entrepreneur must be and how nascent entrepreneur must act. Although such reality is socially constructed, yet the entrepreneurs' cognitions appear to play a role in shaping the entrepreneur's self-identity within their social realm.

We also take into account the setbacks associated with the interaction of social and cognitive thinking, where nascent entrepreneurs become susceptible to cognitive notions that may contradict the social reality in which they are immersed. According to social learning theory, as individuals engage in different forms of social interaction, they develop specific worldviews and working styles that foster their learning experience (Gibson, 2003; 2004). However, the socio-cognitive connection may also reveal that the capital employed may lose openness to reality and become dysfunctional when individuals' dependence on shared meanings within their social systems make them inclined to cognitive biases (De Carolis and Saparito, 2006) such as when they feel that they have a major impact on the reality of the founding process and therefore develop biased interpretations that hinder their learning experience. According to Coleman (1988), strong cohesive social ties foster cooperative actions, which can conversely turn into a limiting factor for motivation and commitment. This appears to be true also for founding a nascent venture, where strong social ties may restrict learning during the entrepreneurial process and entrepreneurs' ability to attain favorable outcomes from their endeavors. In essence, social and cognitive combinations from this view can potentially induce 'wishful leaps into the future' and predictions carried by extravagant preferences if the utility of these combinations is not

driven by careful estimation of substantial social knowledge in a way that bridges the disconnection between reality and the imaginative aspects.

H (5b): The combined effect of social and cognitive capitals is a significant predictor of the outcome of new venture creation, greater than their main effects, and the combined effect is moderated by cognitive capital.

3.3.2.3 Social - Human Capital Interaction

The complex nature of new venture creation appears to support the notion that 'there is good reason to suspect more complex relationships between human and social capital and venture creation than a simple direct effect' (Gordon, 2012, p.170), and therefore adopting an integrative approach is justified. According to Reynolds (2007), entrepreneurial human capital in dealing with stakeholders, as well as founding new ventures, acts as powerful socialisation element. Entrepreneurship studies have recognised the importance of the interaction between human and social capitals (Bruderl and Preisendorfer, 1998; Renzulli et al., 2000; Anderson and Miller, 2003; Davidsson and Honig, 2003; Bosma et al., 2004; Mosey and Wright, 2007). For example, Santarelli and Tran (2012) in their empirical findings found that the interaction between social and human capitals creates value; however, the robustness of this interaction depends on the type of knowledge that enterprising individuals possess. The findings detected signs of complementarity and substitutability between network participation and professional education. However, they also reported that complementarity effects tend to diminish after controlling for the experience variable.

In general, the literature addressing the interplay between human and social capitals as a driver of successful Nascent Entrepreneurship remains limited and somewhat inconclusive (De Carolis et al., 2009; Rooks et al., 2009) with some authors arguing that they are substitutes (Bruderl and Preisendorfer, 1998; Piazza-Georgi, 2002), and others in the sociological literature seeing them as complementary (Coleman, 1988; Sanders and Nee, 1996; Burt, 2001). Few researchers have investigated in a comprehensive manner the interaction of human and social capitals in fostering entrepreneurship performance and none have dealt with issues that relate to success at the start-up phase.

At an empirical level, the study performed by Mosy and Wright (2007) theorised how the variation in terms of human capital endowment affects entrepreneurs' ability to develop social capital. They argued that entrepreneurs who are endowed with prior experience have higher exposure to social networks and thus are more likely to build a broad range of social interactions. They concluded

that ‘experience appears essential to learn to build relationships with experienced managers and potential equity investors [however] a potential downside is that entrepreneurially experienced individuals may not necessarily be a conduit for passing on good practice’ (p. 932). More precisely, nascent entrepreneurs with distinct human capital should have an ‘absorptive capacity’ that enable them to tap a variety of resources (Cohen and Levinthal, 1990; Zahra et al., 2006; McCline and Bhat, 2012) making the most out of their social experience. In other words, the variation in human skills enables nascent entrepreneurs to tap into larger social networks, giving them a range of options and opportunities (Lechner and Dowling, 2003).

The literature suggests that human capital is an imperative element in the deployment of social capital, and thus any deficiency in human capital may constrain entrepreneurs’ ability to interpret and deploy knowledge embedded in their social networks. The presence of human capital may neutralise the social conformity (familiarity) effects that in some cases restrict entrepreneurial learning and creativity. By contrast, socialisation is one of the main modes ascribed to the creation of human knowledge. Nonaka (1991), in his framework of human knowledge creation, defined the ‘knowledge spiral’ as an area of intersection that revolves around social interaction and acts as a foundation for knowledge creation. He proposed socialisation as ‘tacit knowledge sharing’ that evolves as social actors interact and exchange information and ideas drawn from their collective experiences, practices, observation and intuitions. The transfer of human capital intelligence through social channels tends to spark new innovations and influence the development of reciprocal trust, which are critical factors for new venture success. Social capital in this sense is recognised as a cultivator for the attainment of higher levels of human capital (Subramanian et al., 2003) and therefore a major driver of the knowledge economy (Nahapiet and Ghoshal, 1998). This agrees with the suggestion that ‘social mechanisms underpin the production of knowledge and are critical for its subsequent distribution and use’ (Bozeman and Mangematin, 2004; cited in Mosey and Wright, 2007, p. 911).

Some studies viewed the intersection between human and social capital as substitutes; while other studies have recognised both capitals as being complementary. For example, Bruderl and Preisendorfer (1998) argued that social capital offsets the knowledge gaps associated with human capital, while Piazza-Georgi (2002) asserted that the accumulation of human capital could be associated with a diminishing effect of social capital due to the efforts invested in one capital at the expense of another. The notion that human capital and social capital are complementary forms of resources is rooted in the psychological literature (Coleman, 1988) as well as the classical

sociological literature. According to Coleman (1988) and Burt (2001), human capital is only found to be effective in the 'right' social context (Rooks et al., 2011, p.203). In other words, social context acts as an effective medium that employs human capital and turns it into a more productive capital that maximises the propensity of achieving success.

Burt (2001, p. 32) considered human and social capital as complements stating that '[s]ocial capital is the contextual complement to human capital'. In this view, Burt argued that the instrumental utility of human capital is maximised when complemented with social aspects and where higher levels of human capital enable entrepreneurs to acquire social capital by promoting their intrinsic ability to access and deploy resources, information and aspirations. Another avenue of thought is that the nature of their interaction may be viewed as substitutes as individuals tend to mobilise social resources to compensate for gaps in their investment in their existing knowledge (Piazza-Georgi, 2002; Bruderl and Preisendorfer, 1998). On the basis of the 'network compensation hypothesis, many empirical studies explained away the lack of positive effects between human and social capital. The network hypothesis was tested empirically using a sample of 1,700 German business founders and the findings indicated that the interaction effect between human and social capitals varied significantly, and therefore support for the network compensation hypothesis was not attained (Bruderl and Preisendorfer, 1998).

Some researchers on the basis of the network compensation hypothesis argued that 'if entry into entrepreneurial roles is a matter of the human capital that can be accessed through networks, then it is perhaps not surprising that models that bring the qualifications of the individual entrant into the equation are not terribly successful' (Abell, 1996, p. 185). The marginal substitutability between [HC] and [SC] indicates a poor connection between nascent entrepreneurs' human and social knowledge, where the focus on increasing one form of capital would do little to reverse the spirals of decline in the other kind of capital. This theorisation indicates that human capital does not matter to accessing social support, and this seems to agree with Coleman's (1988) and Putnam's (200) work that argued that individuals who are endowed with a high stock of human capital tend to accumulate and access less social capital due to their professional commitments that impede effective interaction with social actors, particularity the external actors (weak ties). This means that further accumulation of human capital can escalate social exclusion, impeding social interactions and nascent entrepreneurs' ability to convey social cues and shared meanings, and this would result in eroding the value of social capital. Alternatively, accumulating and maintaining social relations at the expense of human capital can induce detrimental effects, impeding the optimum

utilisation of prior knowledge and experiences. Another argument for explaining the (-) association indicates that the shortfalls in either forms of capital offset to some extend the favourable benefits of the other form of capital, leading to (-) association. Therefore, the stated social exclusion appears to take place at a business network level, and nascent entrepreneurs' reliance on the social support provided by closed networks appears to induce (-) effects through the familiarity biases that seem to produce detrimental effects on [HC]. Being more specific in our discussion on the effects of social capital on the outcome of new venture creation process, we argue in the proposed model that nascent entrepreneurs learn and interact with the process of founding more successfully if human capital aligns with social capital regardless of the nature of the interactions.

H (5c): The combined effect of social and human capitals is a significant predictor of the outcome of new venture creation, greater than their main effects

Based on the preceding discussions highlighting the role of the integration and moderation in the context of bussiness lauching process and the anticipated outcomes and in light of the hypothetical links discussed in the preceding section, the following hypothesis is formulated:

H (5): The combined effects of start-up capital's attributes have greater predictive power than the main effects of their linear model

Table (3.1) Nascent Entrepreneurial Capital Hypotheses

Hypothesis Section	Description
"Start-up Capital" linear Modelling (Main Effects)	
[HC] - linear Model - Main Effect	**H1:** Human capital has a significant (+) prediction on the outcome of new venture creation process.
	H1a: General human capital has a significant (+) prediction on the outcome of new venture creation process.
	H1b: Specific human capital has a significant (+) prediction on the outcome of new venture creation process.
[SC] - linear Model - Main Effect	**H2:** Social capital has a significant (+) prediction on the outcome of new venture creation process.
[CC]- linear Mode- Main Effect	**H3:** Cognitive capital has a significant (+) prediction on the outcome of new venture creation process.
Integrated Modelling (I) – "Start-up Capital"- Process Dynamics Interplay	
[HC; SC; CC] X [PD –Moderation]	**H4:** Nascent entrepreneurial process (New Venture Creation) dynamics moderate the relationship between the start-up capital's attributes and the outcome of new venture creation process.
[HC] X [PD –Moderation]	**H4a:** Nascent entrepreneurial process (New Venture Creation) dynamics moderate the relationship between **human capital** and the outcome of new venture creation process.
[SC] X [PD –Moderation]	**H4b:** Nascent entrepreneurial process (New Venture Creation) dynamics moderate the relationship between **social capital** and the outcome of new venture creation process.
[CC] X [PD –Moderation]	**H4c**: Nascent entrepreneurial process (New Venture Creation) dynamics moderate the relationship between **cognitive capital** and the outcome of new venture creation process.
Integrated Modelling (II): "Start-up Capitals" Interplay	
[HC-SC-CC]	**H5:** The combined effect of star-up capital's attributes is a stronger predictor of Nascent Entrepreneurship success than linear models
[HC] X [CC – Moderation]	**H5a:** The combined effect between human and cognitive capitals is a stronger predictor of Nascent Entrepreneurship success than linear models and moderated by cognitive capital
[SC] X [CC- Moderation]	**H5b:** The combined effect between social and cognitive capitals is a stronger predictor of Nascent Entrepreneurship success than linear models and moderated by cognitive capital
[SC] X [HC]	**H5c:** The combined effect between social and human capitals is a stronger predictor of Nascent Entrepreneurship success than linear models.

Chapter 4: Research Methodology

4.1 Introduction

Overall, the research methods adopted here derive from the study's general philosophical perspective stated in chapter 1 and from the approach embraced throughout this monograph. The aim of this chapter is to develop a suitable methodology for longitudinal data analysis to examine the factors influencing the outcomes of the new venture creation procs and test the predictions of the model regarding the impact of nascent entrepreneurs' types of capital on the founding success for nascent ventures, on the basis of a conceptual framework incorporating both the resources of the founder and founding process dynamics. Therefore, This chapter starts by casting light on the details of the research philosophical stance, strategy, design and methods used.

4.2 Philosophical Orientation of Thesis

This section focuses on the important philosophical aspects that are related to the approach used in this thesis, which will establish the basis before analysing the thesis design and methodology selected. The adoption of a particular research stance and approach facilitates the selection of an applicable and coherent research strategy. Social scientists studying business management conduct their research on the basis of either subjective or objective paradigms, which act as the fundamental infrastructure for the research orientation. This selection is a matter of choice, which will depend primarily on the tradition within the subject discipline, the nature of the investigation, the researcher's experiences and their perspective on social reality.

This thesis adopts a positivist perspective, because the positivist paradigm may be viewed as the 'dominant paradigm' in entrepreneurship and many areas of management research. The positivist approach entails a systematic methodology, which enables us to make necessary generalizations informed by the quantified data that can be used to test the hypothetical model. Following the positivist paradigm, the research will focus on facts obtained from respondents, which will be studied objectively, rather than on the more phenomenological interpretation of meanings. Carolina and Carolina (2000) advised that future researchers should view theory in emerging fields like entrepreneurship as a model that draws links among essential constructs that are necessary in explicating the phenomenon. Therefore, our theory in this study follows exploratory perspective instead of deterministic. We believe that this approach should aid us in developing our

understanding, nurturing us with new insight of the phenomenon. This study, which emphasizes the impact of a flux of actors in predicting the outcome of new venture creation, essentially proposes that knowledge is an integral component of entrepreneurial success. Knowledge is here portrayed as an evolving construct driven by experimental learning of the dynamics and the interactions among start-up capital attributes. This positivist epistemological stance focuses on the value of resources for cultivating entrepreneurial capacity within the start-up context. However, it is also assumed that dynamics and cognitive aptitude significantly influence the entrepreneurial intellect, which could result in variations that affect entrepreneurial success in the nascent period. Here too, the study's positivist orientation takes the phenomenon of new venture creation as an observable reality constituted in a social context, which can be quantitatively measured; there is only limited focus on interpretative phenomenological analysis.

Nevertheless, it should be acknowledged that entrepreneurship is a multi-paradigmatic and dispersed phenomenon (Shane and Venkataraman 2000) involving a mix of different resources, outcomes, behavioural patterns, contexts, social orientations and the complexities inherited in human cognition. As Burg and Romme (2014, p.371) stated, "the field of entrepreneurship research is multidisciplinary and pluralistic in nature. It is multidisciplinary in terms of the economic, psychological, sociological, and other theories and methods it draws upon". Accordingly, there has been some limited convergence towards a common philosophical stance (Davidsson 2008; Alvarez and Barney 2010). Similarly, Burg and Romme (2014) argued that the paradigmatic disagreements between scholars are rooted in academic and pragmatic issues, which make it hard to reconcile the difference in philosophical perspectives. They further explain that some researchers advocate experimentation in line with the 'narrative–constructivist notion of transformation', to form valid knowledge in unpredictable environments; conversely, other researchers endorse the cautious utilization of systematic and comprehensive analysis to predict entrepreneurial phenomena, bridging theory and practice. The next section sheds light on the ontological and epistemological assumptions underlying our choice of the positivist paradigm.

Ontological Assumption

The selection of research stance was based on the realist ontology, which connects with the researcher's vision of the world as an objective, physical and absolute reality. Nonetheless, in order to extrapolate intuitive insights that inform the integrative nature of the proposed model, it has been decided to relax the assumptions associated with extreme ontological realism; it is thus assumed that objective reality is influenced by individuals' interpretations, social construction,

impressions, imaginations and cognition. As a result, the pragmatic ontological position for this thesis demands quantified measures with an interpretative flavour, which are sensitive to the different interactions and dynamics that influence new venture creation in the nascent period. Such measures of reality aim to quantify the separate and integrated effects of different types of start-up capital attributes, and to explain the interaction and dynamic links between them, so as to understand how they influence the outcomes attained. As already explained, the choice to adopt a longitudinal study that captures and analyses the performance of new ventures during their early founding stage, and the choice to utilize quantified instruments to gauge separate and integrated effects on the gestation process, has been dictated by a realist ontological viewpoint. Thus, although the perception of reality is objective, reality may be characterized as process-based. Adopting the assumption of a process-based reality allows us to gain a fuller understanding of social and cognitive factors. It is in line with Morgan and Smircich's (1980) description of the process of reality as: "the world is in part what one makes of it". They go on to explain:

There is little clarity in defining the essence of the entrepreneurial process: the field of entrepreneurship is unpredictable, with little established theory; researchers tend to have a blurred vision which limits their ability to define common language, explore thoroughly the underlying concepts, explicate theoretical ideas and understand the variations that lay the foundation for SME continuous improvement (Nielsen and Lassen 2012). This results in a bias towards a philosophical approach with pragmatic focus (Tranfield *et al.,* 2003).

The process-oriented perspective allows the investigation of the factors underlying the success or failure of nascent ventures, so as to explain the emerging behaviour of nascent entrepreneurs and their ultimate impact on the outcomes; hence this research adopts a realist ontological philosophical approach, which reflects our personal perception of reality in a continuum (Burrell and Morgan 1979). This study's philosophical stance towards the phenomenon of creating nascent ventures assumes that reality is a dynamic and integrated process. This is in accordance with Morgan and Smircichs' (1980) view of the business reality as an iterative and recursive process, which they characterize as "concrete in nature but ever changing in detailed form".

Therefore, the aim is not to explore causal mechanisms in detail, but rather to draw dynamic-integrative connections between resource factors and outcome patterns; these connections help to explain how certain outcomes could be attained on the basis of specific interactions. A focus on integrative relations not only serves to rise above paradigmatic issues, but also enhances the future of entrepreneurship research by questioning the fallacy behind linear approaches that look at the

direct correlations among independent elements (Sarasvathy *et al.,* 2013). This ontological stance, in conjunction with a dynamic orientation, should help us to attain a holistic picture. This picture provides further insight into how different actors come together, thus affecting how reality is internalized and formed on the basis of the emergence of new meanings; it also grants insight into how these meanings differ among individuals as they embark on constructing a new knowledge that puts these ontologies in effect. "This is exactly what Bill Gartner was seeking when he desired researchers in new venture creation to have greater respect for the vast heterogeneity of the process"(Hindle and Kylver, 2011,p. 114).

The Epistemological Stance

The ontological position affects the epistemological perspective, since it affects how individuals perceive, define, validate and construct knowledge (Lindgren and Packendorff, 2007). The epistemological stance of this study was selected on the basis of the objective positivist position on the philosophical continuum discussed in the preceding section. The epistemological perspective of this study is more dynamic and adaptive, as it emphasizes the necessity of observing and measuring knowledge with consideration of the integrative and interactive effects within the entrepreneurial process (Steyaert, 1997). This balanced approach assumes that observed intentions and behaviours are essentially objective facts, but at the same time are perceived as the product of on-going interactions and negotiations with the surroundings and boundaries; these interactions uncover facts that guide human actions and transform their sense of observed knowledge and reality. This adaptive deductive approach aims to relax the fixed assumptions underlying the operationalized theories and concepts associated with the more extreme end of the positivist tradition (Morgan and Smircich, 1980).

This thesis's philosophical stance follows Blackman and Imas's (2011) concept of 'transgressive knowledge creation in entrepreneurship': new venture creation at a nascent stage is addressed from a more artistic perspective, with an interactive epistemological foundation, that is intended to generate new outcomes and new interpretations of new venture creation. Therefore, the philosophical stance focuses not on the definitional issues or on the characteristics that encompass this phenomenon; rather, the focus is on how the different factors underlying this phenomenon coevolve to create a new knowledge that contributes to the outcome of the process of launching a business. This study is intended to engender dialogue concerning start-up capital attributes and business dynamics, in order to explicate the adaptations in entrepreneurial behaviours. This will offer new interpretations, which transcend the classical boundaries, models and status quo that

were previously recognized as accepted notions in the early stage of business development.

In epistemological terms, we aim to conceptualize knowledge creation in nascent entrepreneurship by questioning established norms, rethinking the accepted assumptions deployed, bridging gaps and challenging the received conventional wisdom as we explore how nascent entrepreneurs utilize resources and manage dynamics at independent and integrated levels to create and extend relevant knowledge. This entails a reformulation of knowledge to reveal new relationships between means and ends, new styles of thinking and new patterns of actions as the basis for success in launching nascent ventures. Nascent actions revolve around the utilization of resources to recreate or rearrange knowledge. For the purposes of this study, it becomes clear that the integration of different aspects of the resource process matters: understanding how such knowledge emerges and evolves helps us grasp how new ventures behave and attain their outcomes. Consequently, understanding what these resources hold, and how they coevolve from mere resources into forms of knowledge, is vital for developing better models and theories, combined with pragmatic awareness for the whole to emerge and to be understood.

This study follows the recent trend in entrepreneurship research, which combines rationalist and empiricist philosophical perspectives with a sceptical orientation. This adds another philosophical layer, by questioning accepted knowledge. This orientation views nascent entrepreneur as actors who are actively engaged in constructing meanings, rather than just relying on the information received (Ortony, 1993). Accordingly, although many of these enterprising individuals access information socially (Berger and Luckmann 1966), we nevertheless need to explore how their mental capacity for processing and interpreting passive information derives new meanings, and also how their ability to turn it into relevant knowledge depends on their pre-existing knowledge and its context (Ortony 1993). This tallies with Schwandts' (1994) argument that the construction of knowledge in the context of entrepreneurship is not an objective practice, where people observe facts and create knowledge, but rather an interactive process, where individuals continuously negotiate various dialogical situations within their social context; this interaction helps individuals to sense meanings and conceive knowledge that corresponds to mind-sets, social ideology, practices and prior knowledge.

This integrated perspective answers the call for a combination of different philosophical orientations, embracing different voices and styles of thinking; it thereby enables an original contribution which moves away from the business-like norms and prescriptions previously imposed on this kind of study. By adopting this integrated epistemological position, researchers

can generate knowledge and overcome gaps, weaknesses, and instabilities in entrepreneurship concepts; they can also negotiate new terms, meanings and structures ranging from stability and novelty. The proposed model focuses on complexity theory: the assumption of linear causation is relaxed, as we look instead at dynamics and the interaction between these dynamics and resources (Anderson 1999).

The approach adopted here aims to explain the changes that take place during the founding endeavour as an unfolding process which is influenced by the dynamics of conceptual thinking, learning and gestations' forces (Founding rate and intensity). This approach is evidently linked to the evolutionary image, which seems to be more suitable for entrepreneurial studies that are less deterministic and more oriented toward understanding social contexts. This thesis also adopts the image of contingencies, drawing on Gartner (1985), who proposed a conceptual framework in which the creation new ventures is a process that involves a series of contingencies which explain the multidimensional phenomenon of new venture creation by observing the nature of complex interactions contingent on the dynamics of entrepreneurial process (McKelvey 2004; Nielsen and Lassen 2012). Gartner's (1985,p.697) notion indicates the importance of adopting a philosophical stance that promotes integrated thinking:

[...] researchers need to think in terms of combination of variables that make up each new venture creation. The creation of a new venture is a multidimensional phenomenon; each variable describes only a single dimension of the phenomenon and cannot be taken alone.

In sum, this thesis, falls under the positivism paradigm, as it aims to test theories, behaviours and relate a number of relationships among different constructs that constitute the determining elements of business lunching phenomenon. This philosophical approach would hopefully reveals the multifaceted and complex nature of nascent entrepreneurship through the explanatory analysis. The thesis uses the deductive approach by developing and testing the research hypotheses incorporated in the proposed conceptual model via the selected statistical analysis.

The philosophical stance of this research emphasizes that the capital system employed in the founding of nascent ventures is in essence an open system. Although this system may be taken as a metaphor, which highlights vital aspects of the philosophy that could be adopted to attain realistic and sensible meanings, it is not an ideal image of nascent entrepreneurship that can guarantee success. Therefore, the realist ontological conjecture behind these images represents the founding process as a complex and interactive system with multiple components. The research thus adopts a

positivistic epistemological philosophy and nomothetic methods so as to provide systematic explanations for how the entrepreneurial process unfolds and creates knowledge, which results in either successful or unsuccessful outcomes for nascent ventures.

4.3 Research Strategy

The data collection process is considered a key component of any research design (Rosenthal and Rosnow, 1991). In this research, a longitudinal study was selected to observe the new venture creation phenomenon over a period of four consecutive waves that monitor a broad range of aspects of gestation. Longitudinal studies may be described as observational and are mainly used for studying developmental trends. This agrees with Diochon et al.'s (2008) statement that 'longitudinal research facilitates a more reliable and valid measure of success' (p. 163). The present study applies a secondary survey strategy to a sample of nascent ventures in the US. This strategy is usually associated with the deductive approach, and is one of the most widely recognised methods in social and management science research (Cheng and Phillips, 2014). According to Bryman and Bell (2007), the use of secondary surveys enables us to follow large quantities of data from a sizeable population of nascent entrepreneurs in a highly cost-efficient manner.

The empirical model in the present study is tested by a sample of PSED secondary data from the US. The PSED is a longitudinal data set of adults in the process of founding new ventures who were identified from a phone screening of 64,222 individuals in the United States who are 18 years of age or older. PSED provides large-scale data within a comprehensive longitudinal dataset that facilitates an understanding of the new venture creation process and its unique features (i.e. characteristics, resources and processes), and thereby provides meaningful interpretations of the nascent stage of business venturing (Reynolds and Curtin, 2011).

The longitudinal dataset was collected in four annual waves (1997-2000) to allow the analysis of new venture creation. These were random samples of nascent firms which were in the process of being created, but were not yet established in the marketplace. The PSED-I data used for testing the hypotheses had a panel nature, and each panel captured one year of observations for the variables selected. The PSED-I cohort was selected for this project because a greater diversity of variables was used than in the more recent version of the PSED. This cohort was collected during the period 1997-2000 and was based on a representative household sample that captured nascent

enterprises long before they were included in business registries. A screening criterion for eligibility was followed to qualify respondents as nascent entrepreneurs (refer to Appendix A).

This criterion sought to confirm that the new venture was not just a wish but an idea that was being actively pursued. Eligible nascent entrepreneurs were identified based on two criteria (Refer to Appendix A). Based on these criteria, 3,592 nascent entrepreneurs were identified, of whom 2,763 were involved in founding their own ventures. The eligible respondents agreed to participate in detailed data collection, consisting of phone interview and mail questionnaire. Four panels based on a total of 6000 observations were screened, and usable observations were incorporated in a pooled analysis of the variables studied. The first wave of data collection following the initial screening eliminated the cases with non-person ownership (>50%) in order to overcome the biases driven by corporate interests, and also eliminated 27% of the cases that reported positive monthly cash flows for more than 90 days that covered expenses and salaries for more than three months. Further attrition among the eligible respondents occurred through loss of contact (7%) and non-completion of the phone interview (20%). The original sample of qualified nascent entrepreneurs was reduced to a mix gender sample of 816 nascent entrepreneurs who completed the detailed phone interview over three additional waves of data collection (phone interview and mail questionnaire).

For a more comprehensive account of the PSED's data collection, see Gartner et al.'s (2004) Handbook of Entrepreneurial Dynamics.

4.4 Research Design

After defining the requisite strategy to answer research questions and address the gaps identified in Chapter 1, the research design was determined which involved a series of decisions to rationalise the empirical process and facilitate the efficient conduct of this research. The selection of the research design varies depending on the research theory. The study follows a methodological design that adopts multiple approaches – 'background theory', 'focal theory', 'data theory', 'novel contribution' (Phillips and Pugh, 1994) and contingency theory (Hmieleski et al., 2015). Background theory was presented through a review and analysis of the literature on Nascent Entrepreneurship, highlighting key issues and gaps. Focal theory was developed through assessment of existing perspectives and paradigms concerning the attributes affecting Nascent Entrepreneurship. The study's data theory combines the strengths of linear and integrative analysis to gain an explanatory edge. As highlighted above, the deductive research approach was adopted to

develop and test the theoretical propositions. This approach utilises secondary data methods. Secondary data from the Panel Study of Entrepreneurial Dynamics (PSED) are used to test and validate the theoretical propositions as detailed in section 4.6. The novel contribution comprises new constructs that have the potential to extend the body of research and allow for further replication at theoretical and empirical levels. The distinctive contribution of this study is its development of a dynamic-integrated framework for considering human, social and cognitive capitals. This study is thus one of few to explore how nascent entrepreneurs use combinations of their resources at the early stage of business formation in a way that facilitates or hinders the progression of the business.

The last approach draws on contingency theory, assuming that the nature of the relationship between resource endowments and the outcome of the new venture creation process is dependent on a third variable (moderating variable in the integrative modelling). The application of the contingency approach in business management research has emerged from the notion that there is no single ideal way or practice of configuring a new venture, and hence the optimal execution depends on the interaction between start-up capital's attributes themselves as well as the interaction between the business attributes (dynamics) and the resources (Morgan, 2006; Hmieleski et al., 2015). This approach agrees with Alvarez and Barney's (2007) logic that 'when entrepreneurs operate in a creation context, different sets of entrepreneurial actions are likely to be most effective' (p. 22).

The present investigation follows the tradition of organisational research that considers the attained performance to be a function of the behaviours, personal attributes and actions of enterprising individuals (Baron, 2013). This line of thinking also draws on the resource-based view of the firm (Alvarez and Busenitz, 2001) suggesting that different combinations of start-up resources are likely to contribute to the enterprise's success. This also accords with the approach followed by Sirmon et al. (2007), where the factor of dynamism was selected as a key contingency element that plays a role in drawing a hypothetical link between the founders' resources and attained outcomes. The contingency view argues that when nascent entrepreneurs' evaluation about the nature of the business environment in which they found a new venture is accurate in terms of the degree to which it reflects a founding context that aligns with the founders' resources, knowledge and actions, it follows that their progress in launching of new ventures will be comparatively effective (Alvarez and Barney, 2007). Therefore, understanding the requirements for successful Nascent Entrepreneurship are both theoretically and pragmatically important. These inferences are

grounded in fundamental differences based on the degree to which the business founding environment and resources endowed by the founders are in synergy.

4.5 PSED-I Data Advantages, Limitations, Selection and Transformation

The benefits and limitations of the longitudinal approach may tend to dominate empirical efforts in all areas of entrepreneurship research (Ireland et al., 2005). These aspects are detailed in next sections, and followed by the procedture to select and transform variables.

4.5.1 PSED-I Data Advantages

Initiating a longitudinal study of new ventures in their very early stage of creation was "an important breakthrough" in nascent entrepreneurship research, and the Panel Study of Entrepreneurial Dynamics (PSED) was thereby the first of its kind, allowing researchers to use a random sample of new ventures in their early phase of development (Davidsson and Gordon, 2012, p. 853). PSED is a secondary dataset that refers to 'data collected by primary researchers under a specific conceptual scheme [that] can be reanalysed under a vastly different scheme and may lead to new insights' (Kaase, 1991, p. 3253). Secondary data is defined as empirical exercise that involves the use of existing datasets to compile and assess evidence to inform the interpretation of theoretical knowledge (Popay et al., 1998) by applying various quantitative techniques so as to make inferences. Use of secondary data is becoming an increasingly prevalent research technique (Smith et al., 2011) and is characterised as a viable, cost-effective choice (Dale et al., 1988).

In deed, today there is immense interest in utilising secondary datasets to address entrepreneurial phenomenon. Secondary datasets are particularly appealing for researchers because of their availability, size and probabilistic sampling. The use of large datasets based on probabilistic sampling (i.e. PSED) has been common in major entrepreneurial journals (Shaver, 2007). According to Busenitz et al. (2003), the descriptive accuracy of large, representative samples has distinct significance toward academic legitimacy, informing theory development that can lead to specific conceptualizations within the field of entrepreneurship.

The use of Panel Study of Entrepreneurial Dynamics as a secondary dataset is a sensible strategy given the low base rate of entrepreneurial progress which makes the production of representative samples complicated. Therefore, its use has the potential to impact the direction in entrepreneurship

domain. First, and most importantly, the longitudinal approach of PSED dataset offers various benefits for the purpose of this research, as it include extensive topics and the in-depth analysis possibilities that explore the founding process in real time basis and as such potential cognitive biases are reduced to a minimum level, thus overcoming the potential for hindsight bias, self-presentational concerns or memory decay (Johnson et al., 2006; Cassar, 2010).

Second, using secondary datasets (i.e. PSED) can facilitate the development of research projects that might otherwise be delayed by having to establish large teams of researchers, demanding, costly and time-consuming procedures on a case-by-case basis, and also the logistical and financial support of large organizations. It is a flexible empirical method that facilitates access to archived raw data that are available in the public domain for different scholarly purposes. Secondary data offers methodological advantages and may be considered particularly suitable for those who prefer to spend research time on conceptual and substantive issues, rather than on collecting data and managing subsequent processes such as interviews and data entry (Ghauri and Gronhaug, 2005). Indeed, researchers on small projects may not have the resources to handle the process of data collection from a representative sample.

Third, as researchers: draw on data from multiple waves, use a dependent measure observed at a distinct time than the independent measures, and include multiple independent measures to explain the observed effects, we can take advantage of temporal heterogeneity and overcome issues (i.e. lack of causality) linked with retrospective research (Davidsson and Gordon, 2012).

Fourth, the data contained in PSED also provides several benefits for exploring entrepreneurial capital in the context of nascent entrepreneurship. It provides extensive material informed by expertise and professionalism (Stewart and Kamins, 1993). The substantial breadth of secondary data allows researchers to use a representative sample that is highly likely to generate generalisable outcomes at various levels of aggregation (Smith et al., 2011; Johnston, 2014). Given that the nascent ventures are in the process of being founded, the effects of pre-entry startup capital's attributes in different forms of knowledge, experience and relations are likely to be immediately influencing the fledging venture's development (Delmar and Shane, 2006; Dencker, et al., 2009).

These benefits in turn signals that PSED dataset is rich enough and has adequate level of quality to allow researches to investigate theoretical quires.

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4.5.2 PSED-I Data Limitations

The PSED was initiated to deal with a series of issues that have plagued the Nascent Entrepreneurship literature (Reynolds, 2000). In fact, despite the benefits of secondary survey strategy, such datasets include assumptions and design limitations inherited through its founder, and this in turn produce inquiries that are limited by the available data. Clearly, this source of data carries inherent limitations, biases and deficiencies deriving from the lack of sufficient data and the authenticity of the instruments used for the data's collection.

The main purpose of the PSED was "to provide systematic, reliable data on the basic features of the entrepreneurial or start-up process… [and] to provide reliable data on those factors or variables that would account for or explain or predict the variation in these transitional events" (Reynolds, 2000, p. 160). However, while existing researches based on the PSED I dataset produced widespread insights into nascent entrepreneurship phenomenon, a number of limitations were also uncovered—lack of representativeness and the need for methodological improvements in particular—which led to the decision to develop another comprehensive dataset (PSED II).

It is apparent that no single strategy toward data and methods can fully attains the aim of making truly valid conclusions. There are several key limitations that appear regarding the prevalent use of longitudinal- secondary datasets in developing specific conceptualisations within the target field, even those that are representatively sampled. First, research concepts may be adjusted to the available datasets. In this sense, also PSED undertakings come closest to this limitation, as many aspects of the data collections were developed by efforts to measure items that operationalise some specific concepts (Carter and Brush, 2004). This may associates with genuine limitation, considering that the theorisations specific to Nascent Entrepreneurship is itself deficient (Davidsson, 2006).

Second, there are other limitations that can impede the usefulness of large-scale data in testing concepts/models. For example, in PSED I over 100 individuals were engaged in producing the design and variables of the dataset. This resulted in some variations in the coding procedures for different modules in the PSED because they were designed by different research teams with varying

foci. In particular, there are variations in the definition of attitude scales in the PSED-I mail questionnaire[2]. This according to Reynolds and Curtin (2004) necessitated a process of reconciliation among the preferences and interests of this large group. Therefore, no single set of researchers would likely be able to test their ideas as thoroughly as they would wish, in terms of constructs measured, and even the number of measures representing a given construct.

Third, the use of available measures may not have been psychometrically validated, particularly for researchers who were not engaged in creating the dataset. The operationalisation of such measures may meet the content validity test, but hardly withstand stringent psychometric assessment. Likewise, these measures may have been calculated from categorical variables that are perfectly valid for the purposes intended. But when these variables are combined into continuous measures through a mathematical process to create a measure meant to reflect a latent construct, the new measure may lack the necessary validation. Thus, the operationalisation of measures will be limited by the available items in the dataset. This agrees with Chandler and Lyon's (2001) argument that the validations of measures in entrepreneurship research are often not meeting a satisfactory level.

Forth, another limitation of PSED database emerged from the notion that a very large share of knowledge in nascent entrepreneurship has been derived from the continued use of the same source with the same individual cases across different studies, even if such dataset is representative of the target population. This limitation may result in biases and Type I error in the findings, and in turn inflate the possibility of detecting correlations based on chance. This fact is confirmed by Shaver's (2007) argument, declaring this issue as a concern for entrepreneurship field as a whole, stating "the resulting literature is top-heavy, with too many papers, over too many years, relying on slightly different analyses conducted on entirely too few databases."

For the purpose of this research, theoretical triangulation was applied in the deduction process to formulate the conceptual framework. This is in order to improve the validity and legitimacy of the study and to limit the errors and biases associated with a single source (Saunders et al., 2009). The triangulation employed a hybrid of longitudinal secondary data with multiple constructs that were tested at independent and integrated levels in order interpret substantively the heterogeneity,

[2] The rationale for these differences is explained in Gartner et al.'s (2004) Handbook of Entrepreneurial Dynamics.

complexity, limitations and strengths of the business-launching phenomenon. In fact, a research based on secondary survey strategy requires the researcher to consider issues of reliability, validity and generaisibility regarding data collection, data, and results. As Venkatraman and Grant (1986) argued, measurement items are a quantitative way of outlining constructs. The operationalisation is a process of finding these items that will involve the specific phenomena via constructs and variables. This process should address the issues of internal consistency and validity in order to ensure that the measurements are reliable and valid (Schwab, 2005).

At this point it is important to consider the components used to test construct validity, generalisability and reliability, as explained in section 4.5.3 below.

4.5.3 PSED-I Data Validity, Reliability and Generalisability

As stated in the foregoing section, there are certain limitations involved in using secondary data that need to be dealt with through the research design. Thus, the foci of the study and research questions were refined on the basis of the availability of data. From the previous chapter, it is evident that the proposed factors of the conceptual model embody numerous variables. As such, before conducting the statistical analysis, the selected data were examined in order to identify and eliminate the cases with missing data and outliers. Accordingly, the approach adopted in this study involved an iterative process, specifying the variables most appropriate for our conceptual framework, confirming the relevance and quality of the data available, and finally examining their coherence for this project. This was to ensure the validity of the analysis (Hair et al., 2006).

The present study has inculcated the required rigour and quality by applying specific procedures to deal with the preceded limitations. First, to select a suitable set of questions for the present research, a full review of the PSED manual was carried out to scrutinise the various questions that match the scope of the analysis and the conceptual framework that this investigation demands. Coding materials were then obtained and the procedures and the protocols followed during the data collection period were ascertained (Boslaugh, 2007). Supporting documentation that explains any issues or limitations on the dataset was accessed to ensure a reliable and consistent procedure based on the quality and congruency of the dataset (Smith, 2008; Smith et al., 2011). Subsequently, necessary adjustments were made by further theoretical examination to address the distinct characteristics of secondary datasets and to ensure that the data were appropriate and relevant to the area of interest (Dale et al., 1988; Smith 2008).

Second, the present study has tested the unidimensionality or internal consistency. In general, such checks represent the extent to which the measures to be used reflect one specific construct. The unidimensionality check for the present study is being addressed through exploratory factor analysis in that each factor should consist of items loading on a single factor (Venkatraman and Grant, 1986; Tracey and Tews, 2005; Hair et al., 2006).

Third, content validity is recognised as face validity that deals with the extent to which the items reflect accurately a specific domain of the construct as defined conceptually (Venkatraman and Grant, 1986; Schwab, 2005). A measure is content valid through the use of experts and/or academics in the relevant field in order to examine and amend the measurement items. Content validity for this research was dealt during the design process; specifically, in developing variables adopted from well-grounded theory and prior studies, as already tested constructs should have increased validity. In regard to the measures included in the research, strong literature bases exist to support the content validity of human capital, social capital, cognitive capital, and process dynamics as we select the measures rigorously based on the definition of each model and on previously well-established items.

Fourth, convergent validity refers to the extent to which multiple attempts to measure the same variable with different methods, are in agreement (Carlson and Herdman, 2012). This means that having different instruments to measure the same variable/concept should attain close correlation as an evidence of convergent validity. In the present study, we followed the approach of Cruz et al. (2010). The approach used herein to test convergent validity is that of correlation of each item with the summated scale/factor. The results were satisfactory indicating that there is high convergent validity for all factors.

Fifth, discriminant validity is used also to detect the presence of common method variance- as a potential threat to validity (Barringer and Bluedorn, 1999; Podsakoff et al, 2003). Therefore, we employed Exploratory Factor Analysis to determine the number of factors that were necessary to account for the variance in the multi-item measures (discriminant validity). For this purpose, we conducted a principal component analysis with varimax rotation, constraining the number of factors used in the study's empirical model. The standardized factor loadings are all above 0.64; and all alpha levels are above the 0.60 threshold (Nunnally, 1970). Thus, the outcomes of this analysis did not indicate any significant problem in our data. The results are reported in chapter 5.

Sixth, entrepreneurship studies may also deploy a single item to measure complex constructs, and

this may represent another limitation in terms of valid measurement. In this respect, research posits that the validity derived through a simple measurement and/or single empirical model can be a difficult task. Therefore, the present study used multi-items measurement in order to strengthen the variability and thus, sensitivity of measurement, and allow assessment of reliability. We aim here to derive confidence through the representativeness of multiple and interactive elements (Shadish et al., 2002). Put differently, our ability to apply the empirical results beyond a specific dimension is also recognised as generalisability. Short et al. (2002) note, "the representativeness of a sample determines the generalisability of findings extrapolated from the sample." But whereas most studies may conceptualise valid data in terms of a representative sample of respondents, empirical predictions have more than one aspect of sampling. As such, researchers should attain representativeness across different dimensions to claim valid modeling. In the present study we embrace a dynamic-integrative framework with multiple dimensions to discuss how the use of data shapes inquiries in the domain of Nascent Entrepreneurship.

Finally, PSED creators argue that the use of probabilistic collection gives credence that the sample is representative of the population. They stated, with some rationale, that the sample is representative of the U.S. population with over- sampling minority and women (Gartner et al., 2004). Also, they indicated that PSED undertakings used multiple observations over time. Hence, sampling occurred over temporal settings within a limited period. Likewise, post-sampling stratification weights accompany the PSED dataset based on estimates from the U.S. Census Bureau's most recent population survey. The weighting procedure adjusts sample findings based on gender, age, household income, and geographic region (Reynolds 2000) and thereby, corrects for sampling biases built into the data collection, and for differential nonresponse. This procedure promotes wide generalisability of study findings using PSED data (Reynolds 2000). Further details regarding the creation and application of weights are discussed in Reynolds (2000); the process is also described in the PSED website http://www.psed.isr.umich.edu/ at the link entitled "Curtin—Computation of Weights").

Therefore, given the effort and resources for PSED datasets to be assembled, we do not advocate abandoning their use. Rather, we warn that the findings should be interpreted in terms of potential statistical artifacts.

4.5.4 PSED – I Data Selection and Trasformation

The secondary data encompass a mixture of scaled, ordinal, dichotomous and multiple-category questions, which were selected to suit the nature of the study and employed to determine the role of human, social and cognitive capitals as well as process dynamics in the creation of new ventures.

The cleansing data stage started with the creation of a frequency distribution table for the selected variables so as to eliminate the unusable ones with a low response rate (60% and below). Data transformation (recoding), cleansing procedures for out-of-range values and imputation for missing data were applied to selected variables so as to overcome the potential limitations explained above and homogenise the database. Next, the data were pooled across the four consecutive waves to allow, within each zone of analysis, a sufficient number of observations to effectively operationalise the research questions. The selection of the primary predictors of success is thus based on this pooled analysis, which groups all waves together. This enabled identification of the strongest overall predictors of success that remained consistent over all the waves of the research study.

The transformation procedure was carried out in consultation with the primary team involved in the PSED-I data's collection and was designed to both reinforce confidence in the findings and mitigate the aforementioned concerns. It involved the following steps:

1. Variables with continuous values were collapsed into categorical variables (visual binning);
2. Dichotomous variables were dummy coded into values of 0 and 1;
3. Negatively worded items were reverse coded to create scale scores; all Likert scale items were unified in one direction across the whole sample;
4. New variables were created (composite variables) to measure cognitive capital;
5. Missing values for dichotomous variables with a rate of response above 60% were recoded as 0;
6. Missing values for Likert scale questions with a response frequency above 60% were recoded as 3 (neutral);
7. Mean scores were calculated across the four consecutive waves to grant a sufficient number of observations (combine responses) for variables with a 70% and above response rate across the four waves;
8. New variables were computed to measure the diversity of experiences.

Robustness Tests – Sample Structure

A representative sample of nascent entrepreneurs is undoubtedly heterogeneous (Davidsson, 2006; Dimov, 2010). In order to control the heterogeneity and ensure acceptable internal validity for testing the relationship between the nascent entrepreneur's attributes and new venture formation, I conducted a robustness test with a sub-sample for nascent entrepreneurs who were acting alone, i.e. were involved in an independent, 'solo' effort. A sub-sample for a total of 391 of the 830 nascent entrepreneurs in Wave 1 were starting their businesses alone; and a total of 439 of the 830 nascent entrepreneurs in Wave 1 were involved with more than one person in starting a particular venture (team based founders). We repeated the analysis on the sub-sample of the data set that excluded those nascent entrepreneurs who are identified as solo founders. When testing our results on the sub-sample we obtained robust results that are not sensitive to the choice of sample. In addition, one of potential sources of heterogeneity is the varying motivation of the sample entrepreneurs and its impact on nascent venture performance. Number of economic perspectives tends to posit that entrepreneurial action is motivated by pull or push factors. These motivating factors can also facilitate entrepreneurial success or failure. When we eliminated the sample driven by push factors from the PSED I items, their impacts were not significant in the model.

4.6 Measurement Used in the Empirical Analysis

This section describes the measures employed in the proposed conceptual model presented in Chapter 3. The items that constitute the model's factors were selected from the PSED-I dataset. The selection of measures was guided by careful consideration to the structure of the conceptual model described in Chapter 3 and to the review of the literature on certain existing measures deployed in different entrepreneurship articles that capture the key factors that are likely to affect the propensity to launch a new venture. The decision was made with the aim of incorporating all the possible aspects of start-up capital's attributes and process dynamics, while avoiding the use of redundant items. In this study, mainly ordinal scale items were deployed to measure the conceptual constructs supplemented by nominal scales to measure other items. The items selected and their measures are discussed in the following sections.

4.6.1 Dependent Variable (DV)

The dependent variable is the binary outcome of new venture creation process attained by nascent

entrepreneurs, which takes a value of 1 for the nascent entrepreneurs who were successful in launching their new venture, transitioning from the nascent stage (pre-startup stage) to the operational stage (start-up phase); and 0 otherwise; bundling together the struggling attempts and failed cases (Lichtenstein et al., 2007; van Gelderen et al., 2005). The outcome in the present study can be regarded as either a successful newborn venture, or a well-informed business exit 'assuming the actions taken toward venture creation are neither naive nor destructive' (Gordon, 2012, p. 165). However, future research should embark on developing screening criteria that allow early exclusion of naive cases without excluding cases that include genuine start-up attempt.

To determine whether the new venture reached emergence status, what constitutes the point of emergence (founding success) must be specified. Having objective measures that pinpoint the moment of emergence is difficult (Katz and Gartner, 1988; Reynolds and Miller, 1992; Carter et al., 2004; Brixy and Hessels, 2010; Davidsson and Gordon, 2011b). Some authors have argued that determining the point of transition from nascent venture into a newborn business via objective measures may not be practical choice due to the fact that new venture creation phenomenon is a gradual process and not a simple discrete event (Diochon et al., 2005a; Carter et al., 2004).

In effect, scholars have explored the resource endowments accumulated by entrepreneurs in relation to a wide range of outputs (Ucbasaran et al., 2008) that include the decision to become self-employed, the size of the firm in which they have an equity stake (Bates, 1990; Otani, 1996), the survival of the enterprise (Gimeno et al., 1997; Bruderl et al., 1992) and the performance of the new venture (Bosma et al., 2004). In the present study, the focus is on outcomes that relate to the process of founding a new venture (success /failure of business founding attempt). In this regard, different measures were employed to determine the successful commencement of the new venture (Reynolds and Miller, 1992). One of the measures widely used to determine the point of success in forming a business is the measure of the sales generated. However, according to Davidsson (2006), nascent ventures may generate first sales even before engaging in the business founding activities, and hence it may not reflect a conclusive measure in this respect.

In the present study, the determination of the completion of the new venture creation process is achieved through self-assessment by the nascent entrepreneur on whether the nascent venture is launched or not (i.e. Van Gelderen et al*.,* 2001; Brixy and Hessels, 2010). The actual question used in the PSED was: 'How would you classify the status of your firm? Is (1) the attempt

operational and running; (2) are you still setting up the business; (3) have you temporarily delayed your start-up effort; (4) have you completely abandoned your start-up effort?' It is worth noting that these subjective measures are becoming widely recognised in management studies research (Van Gelderen et al., 2000; Zahra and Bogner, 2000; Rhodes and Butler 2004; Parker and Belghitar, 2006). However, according to Kessler et al. (2012), variables based on self-perceptions also are subject to distortion.

Table 4.1: [DV] in the Nascent Entrepreneurship Literature

Dependent Variable	Authors
Attaining Business Milestone	Delmar and Shane (2004)
Persistence Dichotomizing (3) into 'terminated' vs. 'continuing' status, with the latter combining 'operational' and 'still trying' cases.	Brush, Manolova and Edelman, (2008b)
Making Progress Accumulation of gestation activities between two or more points in time	Davidsson and Honig (2003)
Self-Reported Status of the Venture 'Terminated', 'Still Trying', and 'Operational'	Parker and Belghitar (2006)
Achieving first sales or profit/positive cash-flow for the first time	Newbert (2005)
Getting operational' or 'achieving operational status' Dichotomizing (3) by contrasting 'operational' with the other two combined or to 'terminated' only	Lichtenstein et al. (2007)
Continuous measures of levels of sales or profits	Delmar and Shane (2006)

4.6.2 Independent Variables (IDV)

This section presents the three forms of the nascent entrepreneurial capital variables (human, social and cognitive based capital), that is, the endowed resources available for the venture to capitalise on the business-launching attempt. The nascent capitals' variables (Start-up Capital's Attributes) refer to different forms of knowledge that nascent entrepreneurs possess and bring to new ventures under creation and examine the comparative importance of different dimensions

that relate to start-up capital's attributes.[3] The nascent capital variables grouped into three dimensions, Human Capital [HC], Social Capital [SC], Cognitive Capital [CC], that are recognised as having substantive theoretical effects in the entrepreneurship literature (Baron and Markman, 2000; Gordon, 2012). The analysis involved determining the effect for each variable that constitutes the startup capital model rather than the sum of its parts.

According to Stringfellow and Shaw (2009, p.139), these forms of nascent capital are 'interchangeable and in constant flux and this, coupled with the problems of defining and categorising each form of capital, can make the entrepreneurial capital framework difficult to apply in a realistic and meaningful way'. Indeed, nascent capital attributes are associated with complex and multifaceted dimensions and therefore the extant research has adopted a wide range of measurements approaches, such as the formative measurement model (i.e. Edwards and Bagozzi, 2000; Hitt et al., 2001; Dagum et al., 2007; Davidsson and Gordon, 2011; Gordon 2012; Dimov, 2017) and the reflective measurement model (i.e. Subramaniam and Youndt, 2005; Dimov, 2017).

In the present study, the absence of a theory to promote specific measurement components of the start-up capital relative to others (Dimov, 2017), and the scholarly debate in social science about the suitability of formative and reflective measurement models (Edwards, 2011), formative or reflective indices have not been tested or used in this study. Instead, multiple variables have been used separately, focusing on the specifics of the resource dimension (Pennings et al., 1998; Buchholtz et al., 2003; Lester et al., 2008) that allow us to capture broad effects of knowledge about the phenomenon of business lunching. Moreover, our approach of not constructing indices

[3]The independent variables are operationalised at founder level. We purposely use the founder, and not the firm, as the unit of analysis, choosing not to aggregate measures of entrepreneurial capital, and instead control for those founders who have partners. We follow this procedure because aggregating entrepreneurial capital across new venture founders is not a straightforward task. On one hand, it is not clear whether simply adding indicators of entrepreneurial capital across the entrepreneurial team would produce an accurate measure of entrepreneurial capital for the firm; on the other hand, considering only one of the founders as representative of the firm (even if it is the one with the highest levels of entrepreneurial capital) while ignoring the other partners is also likely to be inaccurate (Baptista et al., 2014).

was driven by the observation of some researchers who have pointed out issues regarding the high correlation among the facets constituting human and social factors that can overstate the specified effects, and as such signal issues with the conceptualisation (Petter et al., 2007; Diamantopoulos et al., 2008; Dimov, 2017). For example, Dimovs' (2017) recent findings on the conceptualisation of [HC] measurement in entrepreneurship study indicated that the linear combination of its components produces a formulation of a total [HC] score and this in turn may become biased by the scales used to measure these individual components, bearing in mind that standardising such measures can be difficult because the components may have different population distributions. Moreover, such formulation appears to indicate that the [HC] variables are highly interchangeable and biased by certain career patterns, and hence linear score, apparently, limits the researchers' ability to consider the inherent complexity of start-up capital attributions, and therefore, constrain the emergence of meaningful insights about startup capital conceptualisation and their effects on entrepreneurial outcomes.

4.6.2.1 Human Capital [HC] Measurement

In this section, light is shed on the [HC] measurement's selection and its operationalisation. Previous research has discussed the broad conceptualisation of human capital in entrepreneurship, indicating an emphasis on measures that relate to general and specific forms of knowledge (Bates, 1990; Gimeno et al., 1997; Bosma et al., 2004; Ucbasaran et al., 2008; Dimov, 2017). These measures emerged as part of the traditional approach to human capital theory that had a particular focus on the economic-production perspective.

In the economic tradition, economists have analysed the accumulation of human capital using proxy variables that assess its cost, productivity and education aspects (Bontis et al., 1999). The underlying principle of the education investment approach is to find the value of human capital based on a formal indicator that represents a proxy of the human capital value (Wachtel, 1997; Baron and Markman, 2000; Lee and Barro, 2001). However, education measures can signal individuals' status of knowledge, aspiration and discipline and are not conclusive indicators of actual skills or productivity (Cooper et al., 1994; Ucbasaran et al., 2008). The second approach in the economic school of thinking has viewed the accumulation of human capital as an effective means of facilitating new possibilities for generating higher income (Becker, 1993; Mulligan and Martin 1995; Lee et al., 2005; Sidorkin, 2007; Frank and Bemanke, 2007). This contends with Sheffin (2003, p.22), who defined the measurement of human capital as 'the stock of skills and knowledge embodied in the ability to perform labour so as to produce economic value'. In spite of

this, research posits that this approach does not present a complete measure for human capital, as other unrelated human capital factors appear to affect the individual's productivity. The third approach to measurement, the cost based approach, is another proxy that measures human capital by aggregating the total cost of the investment to enhance the productivity of the labour. However, this measurement approach has also not been accepted as a precise measure due to its limitation in drawing clear boundaries between investment and consumption (Kong and Bon, 2009).

Evidently, human capital's measurement is limited by the economics thinking and the multivariate modelling that focuses on proxy indicators that relate to educational attainment and monetary related measures, mounting the years of their accumulated education and experience which contributed to the sceptical view of human capital measurement in entrepreneurship (Dimov and Shepherd, 2005; Ucbasaran et al., 2008; Dimov, 2017), limiting our understanding of [HC] heterogeneity, representations and its effects on entrepreneurial outcomes (Unger et al., 2011). The modern perspective considers these proxies as incomplete measures of human capital (Bontis et al., 1999; Dimov, 2017). In this regard, Bontis et al. (1999) noted that there is disbelief in the precision of human capital's measurement, indicating that such measures 'suffer from subjectivity, uncertainty and lack reliability in that the measures cannot be audited with any assurance' (p.395).

Therefore, in more recent decades, a scholarly call for an advanced approach was suggested, considering the notion of human development that incorporates specific aspects beside the general and monetary perspective (Dagum and Slottje, 2000). This was regarded as a compulsory step towards accurate measures with consistent results that avoid the drawbacks of classical approaches. For example, based on the meta analysis findings of Unger et al. *(*2011) utilising human capital measures (education and work experience) in 81 cases, they suggested that future measures of human capital should distinguish the outcomes of [HC] investment from the possession (investment) of knowledge and skills themselves, and more importantly, take into account specific aspects (qualities) that strengthen the analysis's ability to predict success of nascent ventures given their evolving nature, context and sources. In addition, Dimov (2017) called for a qualitative understanding of the [HC] construct by developing the theorization of [HC] measurement on the basis of new methodological approaches (qualitative comparison analysis (QCA) based on Boolean algebra) that take into consideration configurational (qualitative) logic rather than focusing on [HC] quantities.

In this study, we follow Dimovs' (2017) logic, utilising multiple variables for human capital prediction that were used at linear and integrative level of analysis. This allows us to avoid the perspective that 'these indicators represent interchangeable proxies for one's human capital, albeit with varying degrees of proximity' (Dimov, 2017, p.222). This means that the proposed conceptualication of [HC] model does not assess the returns of investment in education and experience based on the common premise that "each year of accumulation represented a unit that is consisted and interchangeable across different domains of experience" (Dimov, 2017, p.223). But alternatively, considers that the source of [HC] and its integrative potential regardless of the amount feed into different knowledge paths. This diversion should result in different configurations and varying accumulation patterns for knowledge and competencies that have promising venues for [HC] measurement. According to (Dimov, 2017,p.223): '10 years of total experience can amount to qualitatively different capacities depending on the individual experience of which they are composed'. Therefore, in the present study, [HC] model was measured with seven items identified from a review of the literature on the existing measures.

The selection of the PSED human capital measures in the present study was made on the basis of Human Capital Theory as well as the entrepreneurship literature emphasising the role of general and specific knowledge in the context of business start-ups (Stuart and Abetti 1990; Storey 1994; Bruderl et al., 1992; Shepherd, 2003; Bosma et al., 2004; Rauch et al., 2005). General and specific facets of knowledge have been recognised as important measures of productivity (Becker, 1962; Oscarsson, 2001; Davidsson and Honig, 2003) and have been extensively cited by entrepreneurship authors (Dakhli and De Clercq, 2004; Ram et al., 2007; Kugler et al., 2007; Ucbasaran et al., 2008; Unger et al., 2011). [HC] variables were measured and operationalised as detailed in Table (4.3).

The general dimension of the [HC] knowledge captures the general human capital factor, which was defined as the total years of education possessed by the nascent entrepreneur (i.e. Cooper et al., 1988; Boden and Nucci, 2000; Davidsson and Honig, 2003; Dakhli and De Clercq 2004; Astebro and Bernhardt 2005; Camacho and Rodriguez, 2005; Muelle, 2006; Lam et al., 2007; Coleman, 2007; Ucbasaran et al. 2008; Shaw et al., 2009; Ganotakis, 2010; Brixy and Hussels, 2010; Davidsson and Gordon, 2011; Evald et al., 2011; Jansen et al., 2013; Prasad et al., 2013; Santarelli and Tran, 2013; Roberto and Yu, 2015), as well as the breadth of training and derived skills across different functional areas (Becker, 1962; Shaw et al., 2009; Ganotakis, 2010; Santarelli and Tran, 2013).

Despite the highlighted limits of the general form of human capital as described earlier, this measure entails aspects that are widely studied in the research on entrepreneurship and career choices, representing the individual's innate productivity (Spence, 1974; Becker, 1975). At an empirical level, several studies have described the attainment of general knowledge in the form of education and training as dominant measures that distinguish personal endowments of skills and knowledge (i.e. Becker, 1962; Bates, 1990; Barro and Lee, 1996; Cooper and Gimeno-Gascon, 1992; Cooper et al., 1994; Teixeira, 1998; 1999a; Davidsson and Honig 2003; Arenius and Minniti 2005; Koellinger et al., 2007; Van der Sluis et al., 2008). Extant empirical studies have deployed general measures of human capital to test different phenomena as indicated in Table (4.2).

The specific (practical) form of human capital refers to the enterprising individual's specific experiences that measure the nature of knowledge, and professional expertise (i.e. Boden and Nucci, 2000; Davidsson and Honig, 2003; Dakhli and De Clercq 2004; Astebro and Bernhardt 2005; Lam et al., 2007; Krasniqi et al., 2007; Coleman, 2007; Ucbasaran et al., 2008; Shaw et al., 2009; Ganotakis, 2010; Brixy and Hussels, 2010; Jansen et al., 2013; Prasad et al., 2013; Santarelli and Tran, 2013). The practical measure (know-how) is action orientated knowledge measured in terms of practical experiences in specific domains and contexts, synthesised in the entrepreneur's intellect, talent, intuitions and perceptions (Becker 1964; Gimeno et al., 1997; Peterman and Kennedy, 2003; Unger et al., 2011; Evald et al., 2011; Martin et al., 2012). The specific aspects of the [HC] model in this study are measured along different dimensions that relate to nascent entrepreneurs' prior experiences in: business ownership (entrepreneurship experience), industry, management and supervision.

We also employed (prior experience in parents' start-up). The latter variable is acknowledged as a social instrument measure that was borrowed from established frameworks in the social sciences (i.e. Duncan's Occupational Inheritance concept, 1967; Bandura's Social Learning theory, 1977; and Ajzen's Theory of Planned Behaviour, 1991) to observe the effects of 'Transmission of Parental Self Employment Status' (Laferrere, 2001) and guide the empirical research in conceptualising the social antecedents of entrepreneurs' career choices (Dyers, 1994), intentions, actions and aspirations (Scott and Twomeys, 1988). According to Delmar (2000), this measure debatably belongs to human rather social capital. Delmar's study noted that working in a family business context contributes more to human capital measurement. This present study has adopted Delmar's notion, employing prior experience in parents' start-up as a specific measure of [HC]

embedded in a social context. After carefully considering the above insights, issues and existing measurement found in the entrepreneurship literature, it was decided to adopt the HC measures presented in Table (4.3). Table (4.2) provides a synopsis of the studies using the general and specific forms of human capital in the entrepreneurship literature.

Table 4.2: [HC] & Entrepreneurship Literature

[HC]	Authors	Impact
General [HC]	Davidsson and Honig (2003); Ucbasaran (2008); Estrin et al. (2016)	Discovery Successful exploitation
	Gaag and Snijders (2005); Diochon et al. (2008); Rooks et al. (2009); Sriyani (2010); Brixy and Hessels (2010); Santarelli and Tran (2012); Hoyos-Ruperto et al. (2013); Hmieleski et al. (2015)	Entrepreneurial Performance
	Quan and Huy (2014)	Entrepreneurial Intention
	Van Gelderen et al. (2000); Davidsson and Honig (2003); Paker and Belghitar (2006); Dimov (2010); Gordon (2012)	Founding Success
	Rostgaard et al. (2011)	Internationalisation
	Klyver and Schenkel (2013)	Rate of Engagement in the Founding Process
	Arenius and Minniti (2005); Mueller (2006); Romero and Yu (2015)	Likelihood of Becoming Entrepreneurs
	Baptista et al. (2014)	Early Survival Chances
	Bayon et al. (2014)	Nascent Entrepreneurial Activity
	Bates (1990); Bruderl et al. (1992); Gimeno et al. (1997); Bosma et al., 2004; (Delmar and Shane, (2003, 2004)	Entrepreneurial Survival
	Schenkel et al. (2012)	HC-SC in the New venture creation
Specific [HC]	Van de Ven et al. (1984); Stuart and Abetti (1990); Bruderl et al. (1992); Cooper et al. (1995); Gimeno et al. (1997); Pennings et al. (1998); Bosma et al. (2004); Forbes (2005); El-Saouda et al. (2006); Diochon et al. (2008); Hmieleski and Carr (2008); Rooks et al. (2009); Samuelsson and Davidsson (2009); West and Noel (2009) Sriyani (2010); Brixy and Hessels (2010); Santarelli and Tran (2012); Hessels et al. (2014).	Entrepreneurial Performance
	Davidsson and Honig (2003); Ucbasaran (2008); Klyver and Schenkel (2013); Estrin et al. (2016);	Discovery Successful exploitation
	Van Gelderen et al. (2000); Newbert (2005); Rotefoss and Kolvereid (2005); Van Gelderen et al. (2006); Paker and Belghitar (2006); Kessler and Frank (2009); Dimov (2010); Kessler et al. (2012)	Likelihood of Founding a New Venture
	Peterman and Kennedy (2003); Evald et al. (2011)	Entrepreneurial Intentions
	Baptista et al. (2014)	Early Survival Chances
	Chatterji (2009); Ingram et al. (2014)	Acquiring Funds for New Ventures
	Schenkel et al. (2012)	Relationship between [HC]-[SC]
	Mueller (2006)	Likelihood of Becoming Entrepreneur
	Neira et al. (2013); Bayon et al. (2014)	Entrepreneurial Activity

Source: PSED I- Codebook

Table 4.3: Human Capital Variables

Variable	Definition
Managerial Experience	Nascent entrepreneur managed a business owned by someone else, either as the senior executive or part of the senior management team 1= if yes, 0 otherwise
Supervision Experience	Number of people between nascent entrepreneur and CEO (Binned Variable) 0= CEO; (1-2) high rank; (3-4) Med Rank, (5 +) Low rank
Ownership /Prior Startup Experience	Nascent entrepreneur had founded at least one firm in the past. 1= if yes, 0 otherwise
Technical/industrial Experience	Nascent entrepreneur had a production and plant management (Technical / Industrial Experience) 1= if yes, 0 otherwise
Experience In Parents' Startups	Nascent entrepreneur had a work experience in parents' start ups 1= if yes, 0 otherwise
General Education	The founder level of educational attainment. (1-4) Categories 1= Up to high school 2= Pre College 3= College Degree 4= Post College
Diversity of General Training	Number of trainings in different functional areas (0-3 Binned variables) 0 = None; 1-2 = Low; 3-4 Med; 5+ = High

4.6.2.2 Social Capital [SC] Measurement

In this section, light is shed on the [SC] measurement's selection and its operationalisation. [SC] is considered a fundamental measure for various facets of organisational emergence (Aldrich and Carter, 2004), and constitutes a significant portion of the research in entrepreneurship (Bruderl and Preisendorfer 1998; Lechner and Dowling, 2003). A variety of social measures have appeared in social, management and entrepreneurship studies (World Bank, 1985; Coleman, 1990; Bourdieu and Wacquant, 1992; Fukuyama, 1995; Putnam, 1995; 2000; Onyx and Bullen, 2000; Adler and Kwon, 2002; Glaeser and Redlick, 2008; Evald et al., 2011). However, there is still a lack of consensus about these measures in their capacity to draw links between social and entrepreneurship concepts (Audretsch et al., 2006). This can be attributed to the premise that the social concept is embedded in a multi-dimensional construct (Koka and Prescott, 2002; Gordon, 2012). Social measures appear to vary depending on whether the selected metrics emphasise social aspects that relate to the effects, substance, or sources of social capital. Other social measures vary depending on whether they focus on relational, structural, or cognitive aspects (Adler and Kwon 2002). These variations in measurement have resulted in conflicting interpretations.

Critical debates still continue among researchers in the conceptualisation and measurement of social capital. Social capital measures appear to differ greatly across disciplines and research settings. Contributing to the discourse, Adler and Kwon (2002) added that the selection of measures varies according to the level of analysis where measures appear to be a matter of choice for scholars depending on the selected area of focus. Similarly, Perdue (2010) emphasised the difficulty in the operationalisation of social capital, stating, 'the position of social capital as dependent or independent variable as well as the direction of causality are not always firmly established' (p. 213). If we narrow our focus specifically to the theoretical link between social capital and entrepreneurship, we find that research recognises the lack of a proven connection (Hoang and Antoncic, 2003; Shaw, 2006). For example, research has emphasised the lack of empirical and theoretical consistency in justifying social network measures (Van Der Gaag and Snijders, 2004; Shaw 2006; Doh and Zolnik, 2011). Research has also recognised the multi-dimensional nature of social capital that offers a rich platform for analysis for different streams of research (Audretsch and Keilbach, 2004).

But, on the other hand, the multidimensionality of social capital appears to induce limitations in the measurement considering the complexity and diversity of the social concept (i.e. measuring the diverse resources embedded in social networks). Researchers argue that social capital's multi-dimensionality hinders direct measurement, and therefore measures should be aligned to specific notions (Koka and Prescott, 2002) such as relational (norms, values and trust), cognitive (shared narratives), and structural (social ties configurations) dimensions (Nahapiet and Ghoshal, 1998). Other entrepreneurship studies identified social capital as an index that is based on multiple dimentions that consist of 'associational activities' (passive and active membership) and 'civic norms'. This index was created to explore the social capital effect on entrepreneurial behaviour (Doh and Zolnik, 2011). However, researchers were constrained in operationalising social indices and combining multiple social constructs into one measure. Generally, the social capital construct employs variables that measure the value of relationships and the individual's ability to interact socially, emphasising that the social network has been recognised as the dominant measurement approach in social capital theorisation (Thornton and Flynn, 2003). This was also noted in Van Deth's (2003) review of the methods employed to operationalise social capital, where trust and social network measures were discussed as prevailing indicators. These measures continue to attract the attention of researchers in different streams of research (Lin, 1999; Olives and Ichiro, 2015).

Despite the debates and the substantial variations in defining social capital measures and their contribution to entrepreneurship, earlier and recent research in entrepreneurship appears to pay particular attention to the resources that are potentially accessed through the personal (strong) and business (weak) ties in social networks. However, the question arises as to how social interaction between rational actors is to be modelled when there are a large number of actors to be considered. 'The economic analysis of social networks offers a way forward […] where networking is often regarded as a manifestation of social capital, and many of the insights of social capital theory can be found, quite independently, in the network literature' (Casson and Buckley, 2010, p. 151).

As noted by Van der Gaag and Snijders (2005), when researchers attempt to develop social measures, a number of doubts need to be resolved. First, the researcher should adopt a precise definition of social capital and then make a selection decision between the 'use' of resources, and the 'access' to resources (Lin, 2001a; 2001b). In the present study, prospective research is being dealt with and therefore it is advantageous to measure the potential 'access' and 'use' of social capital. Clearly, the focus here is on measuring social capital within the individual's 'access-use' lens, and specifically in terms of resource availability, relationships, role models and skills. We quantify social capital's 'access-use' approach by asking nascent entrepreneurs if they received advice, support or value from different social actors within their personal/business settings. Discussing this approach, (Van Der Gaag and Snijders, 2005) proposed two methodological paths that have been pursued to collect 'access' and 'use' type social capital data. The first method is a 'resource generator' instrument, and the second method is a 'position generator' instrument. As noted by Van Der Gaag and Snijders (2005), the first instrument 'maps the ego-centred social network as a starting point for a subsequent social resource inventory' (p.3). The second measurement instrument is the 'position generator' which, according to Van Der Gaag and Snijders (2005), is a method [that] measures access through network members to occupations, seen as representing social resource collections based on job prestige in a hierarchically modelled society' (p. 4). However, they also highlighted the potential disadvantages of this method, one of which is the lack of specificity and precision of the social resources and their diversity as well as its focus on position-related dimensions which is not a common dimension in social capital, and thus has limited use in new venture creation settings.

Despite the criticism in terms of theoretical redundancy and lack of consistency in aggregating resource data into social measures, we have opted for the 'resource generator' approach, allowing

us to focus on potential flows of supportive social resources that analyse the effects of social resources in terms of the skills attained, the value and the motivation accessed via social role models and finally the expressive benefits attained through strong and weak ties. For the investigation of the context-specificity of social capital, multiple measures are needed that each refers to a separate portion of accessible social resources (Van Der Gaag and Snijders, 2005). For this purpose, position generator measures have limited use.

The [SC] variables were measured utilizing four items resulting from the review of the literature on existing measures. The four items focus on aspects of social relations, skills and more specifically the flows of supportive social resources and their effects in driving entrepreneurial outcomes (Davidsson and Honig, 2003; Davidsson and Gordon 2011; Gordon, 2012). The selection of social measures was guided by the items listed in Table (4.4). The selected social measures focused on homogeneous and heterogeneous ties, for example, whether close ties support starting a new venture (Van Deth, 2003; Davidsson and Honig, 2003; Prasad et al., 2013; Santarelli and Tran, 2013); if nascent entrepreneurs have close ties that own businesses (i.e. Davidsson, 1995); if support (business advice) comes from professional experts (Van Deth, 2003; Grootaert et al., 2004), and receiving help from people external to the venture in gestation. Also, the presence of social skills, which is theorised as an effective mechanism in negotiating and communicating with stakeholders, was employed as a social measure that explores the use and application of social competencies (Baron and Markman, 2000) in the context of new venture founding. After carefully considering the above insights, issues and existing measurements found in the entrepreneurship literature, it was decided to adopt the [SC] measures in Table (4.5). Table (4.4) provides a synopsis of the studies using SC in the entrepreneurship literature.

Table 4.4: [SC] & Entrepreneurship Literature

SC Variables	Authors	Impact
Structural Relational SC Cognitive SC	Romero and Yu (2015)	Likelihood of becoming entrepreneur
Social Competence (skills)	Hoyos-Ruperto et al. (2013)	Entrepreneurial success (growth rate and net profit)
Nature of Network Size	Ingram et al. (2014)	Acquiring fund for new ventures
Strong ties/Weak Ties	Hmieleski et al. (2015)	Entrepreneurial performance
Joined Trade or Professional Association Business Networking Group Parental entrepreneur External Non-Owner Helpers	Gordon (2012)	Venture creation outcomes

Table 4.4: (Continued- [SC] & Entrepreneurship Literature)		
SC Variables	**SC Variables**	**SC Variables**
Network Index Social Role Model	Kessler and Frank (2009)	Founding success
Social Networking Family Role Model	Kessler et al. (2012)	Founding success
Entrepreneurial Network	Klyver and Schenkel (2013)	Active in the start-up (Founding)
Social Networking	Neira et al. (2013)	Entrepreneurial activity
Social Capital Effectives	Reynolds (1999); Hmieleski and Carr (2008)	Entrepreneurial performance
Bonding Strong Ties	Davidsson and Honig (2003)	Discovery Successful exploitation
Know an entrepreneur	Estrin et al. (2016)	Engaged in commercial start-up
Networking with other entrepreneurs	Evald et al. (2011)	Entrepreneurial intention/Expectation
Self-Employed Parent Kin own Business Friends own Business	Parker and Belghitar (2006)	New venture creation (founding) outcomes- Likelihood of successful start-up
Social Capital from Weak-Tie Networks	Santarelli and Tran (2012)	Entrepreneurial performance
Resource generator items Total social capital (#of items accessed)	Gaag and Snijders (2005)	Productivity of social capital
Strong-Tie Networks / Bridging weak ties	Santarelli and Tran (2012)	Entrepreneurial performance
Entrepreneurs in the Family	Romero and Yu (2015)	Likelihood of becoming entrepreneur
Parental Role Model	Mueller (2006)	Likelihood of becoming entrepreneur
	Chlosta et al. (2012)	Likelihood of becoming entrepreneur
Role model	Bosma et al. (2012)	Career choice
Knowing other Entrepreneurs	Arenius and Minniti (2005)	Likelihood of becoming nascent entrepreneur
Tie Strength	Bhagavatula et al. (2010)	○ Opportunity recognition ○ Resource mobilisation
Personal Social Capital Informational Social Capital. Resource social capital.	Rooks et al (2009)	Success of newly created firms.
Social Capital (Cognitive, Relational, Structural Capitals) Associational Activity; (Active/Passive); Civic Norms	Kafcheh and Hosseini (2015) Doh and Zolnik (2011)	Entrepreneurship Self-employment
Composite Index of the four variables: networking, institutional trust, interpersonal trust, and trustworthiness	Turkina and Thai (2013)	Percent of foreign-born entrepreneurs

Table 4.4: (Continued- [SC] & Entrepreneurship Literature)		
Relationships Support from Informal Networks	Hormiga et al. (2010)	Success of new firms.
Structural SC	Schenkel et al. (2012)	SC-HC relationship in new venture creation
Relational SC		
Cognitive SC		
Persistence	Dimov (2010)	New venture emergence
Start-up motivation		

Table 4.5: Social Capital Variables

Variable	Definition
Social Skill	Social Skills dealing and communicating with stakeholders (1-5) Likert Scale 1= if completely untrue; 5= if completely true
Social Role Model	Social support provided by friends and relatives in social networks who had startup experience. (1-5) Likert Scale 1= if completely untrue; 5= if completely true
Strong Ties[4]	Social support provided by Social contacts, those that would NOT be on the start-up team, who have been particularly helpful to you in getting the business started. Variable = 1 if yes, otherwise 0
Weak Ties	Business support provided by professional mentoring and consultancy via weak ties. Professional mentors provide advice as subject matter experts in business domain. (1-5) Likert Scale 1= if completely untrue; 5= if completely true
Source: PSED I- Codebook	

4.6.2.3 Cognitive Capital [CC] Measurement

The [CC] measurement's selection and operationalisation are outlined in Table (4.7). Cognitive capital has been shown to be important for the measurement of performance at both individual and collective levels of analyses. In addition, it was widely used in the measurement of constructs that relate to self-evaluation and personality traits (Peterson et al., 2011). Research on the

[4] By reviewing the PSED data and based on the (-) association between weak ties and the probability of creating a new venture reported in the preceding section, we assume that [Non-Owners-Non Start-up Team] groups are part of strongly tied communities or at least accessed and influenced by relations with strong ties. This agrees with Ruef et al.'s (2003) findings that '[o]nly 10% of dyadic relationships within the PSED sample involve strangers', and this confirms the present findings. Strong ties in terms of [Social Role Model] with prior start-up experience and [Social Support offered by Non-owners and Non-Team Members] had (+) main effects on the process' outcome.

measures of cognitive capital, such as confidence, optimism (Gartner 2005; Hmieleski and Baron 2009; Baluku et al., 2016), resilience (Luthans et al, 2007), and trust (Page and Donohue 2004) has found that they play a role in entrepreneurial success. Confidence, or self-efficacy measure, is the most studied aspect of cognitive capital (Baluku et al., 2016) in relation to business venturing, and it has been found to positively affect entrepreneurial behavior and intentions. Regardless of the different terms used to measure cognitive capital, it seems that in their vast majority, scholars share similar understanding about this variable. However, the case for cognitive capital is not that clear in a model of the determinants of success in Nascent Entrepreneurship, and although there is a broad range of studies that have attempted to measure the cognitive aspects related to the entrepreneurial psychological and risk profile, the measurements used frequently fall under the intention, performance and career choice models.

According to Baluku et al.'s (2016, p. 19) 'researchers and practitioners need to be careful to avoid speaking of psychological capital as a broad construct. The contribution of each dimension of psychological capital is somewhat different'. Apparently, the researchers design the measures of cognitive capital and entrepreneurial success because there is no agreement among scholars of what constitutes cognitive capital and success attributes. For the purpose of the present analysis, a mix of items was employed from PSED to measure cognitive capital. This approach was taken to rectify the shortcomings of other studies in excluding some cognitive aspects in relation to the outcomes of the new venture creation process. One reason is that there are entrepreneurial studies that only focus on one specific measure of cognitive capital (refer to Table 4.6). Another reason is that although entrepreneurship scholars have attempted to have a comprehensive view of entrepreneurial cognition, they have used varying tactical approaches and, as a result, the measures deployed among those studies are context-dependent. Moreover, previous studies indicated that cognitive capital as a whole has more measurement stability than other forms of capital (Peter et al., 2011) and therefore the present study examines whether the measures of cognitive capital show signs of variability under the interaction process with other forms of start-up capital and process dynamics.

Table (4.6) below provides a synopsis of the studies used for [CC] in the entrepreneurship literature. The [CC] variables of this study were measured with nine items using mix of scales. These items are identified from the review of the literature using existing measures. The details of [CC] model as independent covariates and their operationalisation are outlined in Table (4.7).

Table 4.6: [CC] & Entrepreneurship Literature

CC Variables	Authors	Impact
Risk perceptions	Robinson and Marino (2015)	Venture creation decision
Trust, Selef Efficacy, Resilence, Optimisim	Baluku et al. (2016)	Entrepreneurial success Entrepreneurial satisfaction Entrepreneurial Survival
Risk-Taking Propensity	Kessler et al. (2012); Frese (1998)	Founding success
Overconfidence	Robinson and Marino (2015)	Venture creation decision
Self-Efficacy (confidence)	Klyver and Schenkel (2013)	Active in the start-up (Founding)
Self-Efficacy	Hoyos-Ruperto et al. (2013)	Entrepreneurial success
Confidence in Skills	Estrin et al. (2016)	Engaged in commercial start-up
	Arenius and Minniti (2005)	Decision to become an entrepreneur
	Arenius and Minniti (2005)	Likelihood of becoming nascent entrepreneur
Perceived feasibility	Peterman and Kennedy (2003)	Entrepreneurial intention
Overconfidence	Hmieleski and Carr (2008); De Noble et al. (1999)	Entrepreneurial performance
Internal locus of Control /Overconfidence	Kessler et al (2012); Krampen (1991)	Founding success
Self-Efficacy (Confidence) Risk aversion	Evald et al. (2011)	Intended level of export
Cognitive Style Index Analytic–intuitive dimensions	Kickul et al. (2009)	Entrepreneurial intentions, and the new venture creation process.
Desires	Hormiga et al. (2010)	Success of newly created firms.
Risk Propensity	Hack et al. (2016)	New venture creation
Competitive Orientation	Schenkel et al. (2012)	SC-HC relationship in new venture creation
Desires	Kessler et al. (2012)	Founding success
Expectation	Van Gelderen et al. (2000)	
Risk of the Market	Van Gelderen et al. (2006)	Likelihood of founding a new venture

Table 4.7: Cognitive Capital Variables

Variable	Definition
Cognitive Confidence	Confidence in their abilities and skills (attaining success, communicating, persistence) (1-5) Likert Scale: 1= if completely untrue; 5= if completely true
Cognitive Information (Active/passive)	Collecting information prior to business decision (1-5) Likert Scale: 1= if completely untrue; 5= if completely true
Cognitive Desire	The extent to which the reason to [Income, Family, Recognition, Power, Innovation, Learning Challenge] is important in establishing this new venture (1-5) Likert Scale: 1= limited extent; 5= very great extent
Cognitive Satisfaction	Nascent entrepreneur satisfaction level in his/her previous job. (1-5) Categories; 1= Very dissatisfied, 5= Very satisfied
Cognitive Expectation (Sales)	Nascent entrepreneur future sales expectations in the 1st year after establishing the business (1-4) Categories: 1= Low Expectation, 4= High Expectation.
Cognitive Style (Analytical /Intuitive)	Preference to do things better (Analytical), doing things differently (Intuitive). (1-3) Categories: 1= Doing things better 2= Doing things differently 3= Both
Cognitive Persistence	I persist to do my own business rather than working an employee (1-5) Likert Scale: 1= if completely untrue, 5= if completely true
Cognitive Expectation (Growth- Employment base)	Expected number of full time employees who will be hired to work in the new venture over the next 5 years (Binned Variable)
Risk Perception for Competition	Level of Competition expected in the market 0= Strong 1= Moderate 2= Low 3= No competition

4.6.3 Moderating Variables

4.6.3.1 Process Dynamics [PD] Measurement - Moderator

Process dynamics [PDs] are employed in the first stage of the analysis in the integrated modelling to test their moderating effects on the relationship between the three forms of nascent entrepreneurial capital (start-up capital's attributes - [HC], [SC], [CC]) and the outcome of new venture creation process. The process measurement showed noticeable inconsistencies in the new venture creation literature (Davidsson and Gordon 2011b; Gordon, 2012), and this raised many questions about the dimensionality and measurement of the process properties. The contradictory findings illustrate a problem in the entrepreneurship literature where inadequate attention is paid to the measurement of process properties. In addressing this issue, Suddaby (2010, p. 351) suggested a new route that 'strives to capture the essential characteristics of phenomena with measures that balance accuracy (comprehensiveness) with simplicity (parsimony) and generality'. Research along this line of thinking continues to argue that despite the significance of process

dynamics, their measurement in existing theory testing and theory building are invariably limited to the context of deriving the outcomes of new venture creation process with a few noteworthy exceptions in the works of Lichtenstein et al. (2007), Manolova et al. (2011) and Gordon (2012). Lichtenstein et al. (2007) explored process dynamics in terms of timing, rate of action and concentration of activities; while Gordon (2012) focused on the sum of the discrete activities that measure the intensity of business venturing at the early stage of business venturing (pre-startup). In the present investigation, and based on the complexity theory that emphasises the emergent nature of process properties, Lichtenstein et al.'s (2007) and Gordon's (2012) approaches are taken into consideration in the operationalisation of the process dimension.

In the present study, five dynamic properties of the gestation process were examined. These properties together conceptualise the dynamic changes of the process dimension in terms of: iterative learning, shift in the conceptual idea, intensity of founding efforts, variation in the rate and intensity of gestation actions. Looking at the first process dynamic measure, [Number of Gestation Activities- Intensity of Action], it can be seen that the majority of researchers in the area of process properties have distinct approaches with an exclusive focus on measuring the action dimension that explores the absence or presence of gestation activities (Davidsson and Honig, 2003; Samuelsson and Davidsson, 2009; Davidsson and Gordon, 2011; Gordon, 2012). This measure was defined in terms of how much effort (number of actions) constituted the founding process of new ventures. Gordon (2012) argued that the findings of existing studies are invariably of limited use beyond their relevant empirical context due to their limited capacity to draw on existing theories that should have cast more light on the effects associated with the inclusion or exclusion of gestation activities (Reynolds, 1997; Yusuf, 2010) at the cumulative rather than the individual level (Gordon, 2012).

Early theoretical insights have focused on measuring the new venture creation process on the basis of static descriptions and discrete events (Newbert, 2005; Gordon, 2012). Process measurement has been based on discrete analyses and this associated with real drawbacks that failed to hold across heterogeneous random samples of the numerous populations of nascent ventures. Studies that adopted discrete analysis (linear approach) have concluded that the observation of separate process activities is trivial, suggesting the importance of considering the cumulative and integrative effect of gestation actions in attaining consistent results (Gordon, 2012; Becker et al. 2015; Aidin, 2015). For example, Van Gelderen et al. (2005) and Matthews et al. (2009) stated that adopting a narrow focus based on a single process activity (i.e. business

planning, design, marketing etc.) is a genuine limitation that appears to be associated with inconsistent findings. What matters, therefore, are the overall actions that should make a higher contribution to the process action measurement and their effect upon the likelihood of business emergence (Gartner and Shaver, 2011).

In the present work, Gordon's (2012) measurement of the process action was followed. The **[Gestation Activities - Intensity of Action]** variable was measured from the responses to questions regarding the completion of 27 typical new venture creation activities (actions), which according to Carter et al. (1996, p.155) are defined as 'precursor behaviours that entrepreneurs commonly undertake to establish a new business'. The list of these 27 gestation activities measures (Refer to Apendix-A) are characterised as tactical, specific and guided actions (Learned, 1992) selected based on the theoretical and empirical research on the common activities executed by nascent entrepreneurs (Gartner and Carter, 2003) that promote the goal of new venture creation (Reynolds and Miller, 1992; Gatewood et al., 1995; Carter et al., 1996). The resulting intensity of action was measured by the aggregation of all of the discrete actions (Tornikoski and Newbert, 2007; Brush et al., 2008b; Patel and Fiet, 2009; Gordon, 2012) that preceded the engagement in the market as an operational entity.

The temporal separation in this case mitigates the rise of biases and temporal ambiguity, facilitating a better test of causation (Gordon, 2012). More importantly, not all ventures will engage in all 27 activities, and despite its significance, the extant literature indicates that a nascent venture could be considered as a feasible new venture having not participated in any of these activities. The employed list is not claimed to be comprehensive, asserting the argument of Davidsson and Gordon (2011) who stated that the 'variability of venture creation process suggests that no single activity is a reliable marker of initiation of the process' (p. 5). The selection of these action items is based on the tendency to employ normalised measures in the empirical study of Nascent Entrepreneurship (Reynolds, 2007a; Reynolds and Curtin, 2008; Davidsson and Gordon, 2011b, Gordon, 2012).

Besides the intensity of actions pursued by nascent entrepreneurs, the proposed conceptual model also focuses on how long the aggregated actions take to affect the ultimate outcomes. The second process dynamic measure captures the variation in the process length, **[Gestation Duration- Rate of Action]** (length/period of gestation), which is broadly accepted as a measure of process dynamics in tests of the theory (i.e. Carter et al., 1996; Liao et al., 2005; Lichtenstein, et al., 2007; Edelman and Yli-Renko, 2010; Manolova et al., 2011; Davidsson and Gordon, 2011b; Gordon,

2012). Entrepreneurship is inherently characterised as a time-based phenomenon, particularly in the context of innovation (Kessler and Chakrabarti, 1996). This conceptualisation could be extended to new venture creation given that this phenomenon relies on the time factor to build the capacity required to found a successful business. However, PSED-based research still lacks consistency in term of the effect of gestation duration on entrepreneurial outcomes. This is partly attributed to the variations in research with regard to the operationalisation of gestation duration and the dependent variables.

The third process dynamic measure relates to **[Gestation Commitment]**, another measure of the intensity of gestation actions that traces the level of engagement in the gestation process. Commitment is measured in terms of time, effort, resources and relations devoted to the venture in the course of the pursual process. It determines the starting point that sets the new venture in motion driven by a series of intentions, decisions and actions. Kiesler's (1971, p. 81) measurement of commitment is used herein as a link that 'binds the individual to his or her behavioural acts' to varying degrees that determine the level of perseverance based on the level of stability attained. Researchers such as Collins-Dodd et al. (2004) found that there is a positive correlation between this measure and the level of success attained. Generally, strong commitment is viewed as a decisive measure that should facilitate the smooth founding of new ventures. However, the commitment measurement is also associated with inaccuracies that appear in response to some biases. According to Fayoll et al. (2011), measuring commitment in the form of escalated/concentrated efforts could indicate signs of irrationality, incoherence and obstinacy. All these aspects are in effect signs that reflect the emerging nature, and complexity of the process measurement.

The fourth measure relates to **[Opportunity Change]**, a dynamic measure that reflects how nascent entrepreneurs reconsider and adapt their initial (original) idea (opportunity) in order to make more sense of the dynamics that surround the venturing climate and to bridge the gap to bring the revised idea to fruition through abstract/conceptual thinking. As with **[Opportunity Learning],** this dynamic measure resembles iterative/incremental learning in the process. It measures the dynamics in terms of nascent entrepreneurs' tendency to adapt and learn on the basis of experimentation from its context. **[Opportunity Change]** and **[Opportunity Learning]** are a wholly original contribution to the process dynamic model in the context of business founding that appears in response to the recent scholarly view that new venture creation is more than a series of gestation activities (actions).

The measurement of dynamical changes and learning shows organaisational emergence as a function of simultaneous, complex and interdependent shifts (Low and MacMillan, 1988) in tactical and strategic organising (Lichtenstein et al., 2007) that appear in response to coordinated transformations and shifts in tactics, learning and perspective. It is a cumulative and multifaceted process with a complex nature that unfolds as the new venture comes into existence (Gordon, 2012). Indeed, the limitations of the data limit direct assessment of effects pertaining to the mode by which the nascent venture idea first came about. Existing literature on opportunity change and experimental learning posits that the process to be directed by some measure of rational decision-making, through which a change is detected, then assessed, then enacted in turn (Lichtenstein et al., 2007). Therefore, the dynamic measures proposed in the present study to capture changes at experimental and conceptual levels may provide useful thoughts into the directionality of process dynamics in the context of new venture launching. Accordingly, the current study adopts learning and reconfiguration approach to measure dynamic changes, and thus uses an approach that is based on the work of Teece et al. (1997), Eisenhardt and Martin (2000) Lin, and Wu (2014).

The details pertaining to the [PD-Process Dynamics] covariates and their operationalisation are outlined in Table (4.9). Table (4.8) provides a synopsis of the studies using different forms of process dynamics in the entrepreneurship literature.

Table 4.8: Process Dynamics & Entreprenurship Litreture

Process Dynamics Variables	**Authors**	**Impact**
Entrepreneurial Intensity	Liao et al. (2005)	Variation in the process (Perceived process length) Performance Personal Development
Entrepreneurial Commitment and Gestation Activities	Edelman and Yli-Renko (2010)	New Venture formation
Dynamic Capabilities	Lin and Wu (2014)	Firm performance
Number and Sequence of Gestation Activities	Carter et al. (1996)	New Venture Formation
Rate, Concentration and Timing of activities	Lichtenstein et al. (2007)	New Venture formation
Changes in Business Plans	Honig (2012)	Performance in Nascent process
Gestation Activities	Carter et al. (1996); Lichtenstein et al. (2006)	Venture Survival
	Reynolds (1997)	A decision to Start a New Firm
	Lebrasseur et al. (2003)	Growth Momentum of Venture
	Samuelsson M. (2001)	Importance of Venture Opportunity

Table 4.8: Process Dynamics & Entreprenurship Litreture		
Process Dynamics Variables	**Authors**	**Impact**
Gestation Activities	Manolova et al. (2009)	Progress in Organizing Efforts
	Liao and Gartner (2007)	New Venture Formation
	Gatewood et al. (1995)	New Venture Formation
Dynamic Patterns	Delmar and Shane (2002)	Variation in Venture Formation
Amount of Action, Temporal Dynamics, Sequence of Actions	Davidsson and Gordon (2012)	New Venture Formation
Gestation Duration (Rate of Venture Formation)	Alsos and Ljunggren (1998); Menzies et al. (2006)	New Venture Formation
	Delmar and Shane (2003)	Firm Performance
Temporal Dynamic Patterns of Entrepreneurial Activities	Yan, Li Ping. (2013)	New Venture's Performance
Sequential Patterns of Activity	Liao et al. (2005)	New Venture Formation
Sequencing Patterns and Duration of Gestation Activities	Liao and Welsch (2008)	Comparing technology and non-technology nascent entrepreneurs
Business Planning	Lange et al. (2007)	Firm Performance

Table 4.9: Process Dynamics Variables

Variable	Definition
Opportunity Change	Change in business idea /Opportunity (1-3) Likert Scale: 1= Changed great deal 2=Changed little 3=About the same
Opportunity Learning	The new venture founding involved learning steps over the founding endeavor (1-5) Likert Scale: 1= if completely disagree; 5= if completely Agree
Gestation Activities (Intensity of Action)	Continuous variable: Total Number of activities carried out during the founding process
Gestation Duration (Rate of Action)	Continuous Variable: The total period of founding- Months. From conception to last status
Gestation Commitment	Devoted 35+ Hours/Week for the founding; 0= No, Yes=1

4.6.3.2 Cognitive Capital – Moderator

In section (4.5.2.3) cognitive capital [CC] was presented as an independent factor that is made of multiple variables to measure [CC] linear effects on the outcomes of new venture creation process. Although increasing attention is being given to cognitive capital in new venture creation inquiry, it is generally conceptualized as a resource that measures the linear effects on different

entrepreneurial outcomes in order to reflect on entrepreneur's capacity to cope up with challenging conditions (Zou et al. 2015). Therefore, contemporary research on cognitive capital started to measure its moderating (i.e. Baluku et al., 2016) and mediating (i.e. Newman et al., 2014) effects on entrepreneurial outcomes. The present research along this line of thinking argues that nascent entrepreneurial success is closely tied to specific cognitive attributes, which moderate business success through the cognitive aspects employed in this study. The current study uniquely highlights the moderating effect of cognitive capital on the relationship between start-up capital's attributes [HC, SC] and the outcomes of new venture creation process.

4.6.4 Control Variables

Control covariates were introduced in the proposed model to control for competing explanations of nascent venture creation outcomes and venture creation process differences. Including these covariates allows the variance in venture outcomes attributable to the actions taken by entrepreneurs to be isolated from those attributable to other explanations. Previous research has highlighted many coincident causes for venture outcome and process variation. As a result, this study includes the covariates listed below to account for these effects. Details of the control covariates and their operationalisation are outlined in the descriptive Table (4.10).

Table 4.10: Controlled Variables

Variable	Definition
Gender (Dummy Coded)	The gender of nascent entrepreneurs 1=Male, 2=Female
Wealth (Natural log Transformation)	Natural log transformation for nascent entrepreneurs: Total investment + Savings + assets
Industry (Dummy Coded)	9 Industry Dummies at 3 Digit level. See the list in Appendix C
Team Members	1=Solo, 2=Team-based Founders

Source: PSED I- Codebook

4.7 Methodology of the Data Analysis

The methods for the data analysis were selected in consideration of the study's purpose, design, approach, conceptual design and overall methodology. The data were analysed quantitatively using SPSS (V22.0) which was then used to establish relationships between the various variables and infer findings and further recommendations. Statistical methods were applied in sequence:

first, variables were selected and transformed and then they were subjected to inferential analysis. This approach enabled accurate numerical proofs or falsifications of the study's hypotheses.

Econmetric Theory

A fundamental area of query in economics is understanding how to make statistical inferences on a model of discrete choice behaviour. The roots of the random utility framework that underlies discrete choice models in econometrics can be traced back to the pioneering work of Luce (1959), Marschak (1960) and Luce and Suppes (1965). The econometric setup has a rationale based on utility maximizing choices between (two) discrete utilities. This theorisation involves individuals who choose among competing choices linked with utility function. On the other hand, research also indicates that the econometric methods show general nature and can be deployed to tackle different phenomena that do not necessarily entail references to utility or choice (i.e. patterns, probabilities, etc.) (Jeliazkov and Rahman, 2012). Specifically, individual who has two levels of utility that are associated with two outcomes (0,1). In deed, the theory is quite general and can handle a variety of alternatives; the same concept applies in our binary data context where there are only two possible alternatives. The model of discrete choice behaviour will depend on unobserved characteristics in the population. According to Paker's (2005, p.14) argument, 'one of the strengths of the Economics of Entrepreneurship is that its empirical methods are rooted in careful econometric modelling'. In this sense, economists developed a tendency toward "revealed preference" concept that promote economists to develop objective inferences based on unobserved preferences derived from their actual behaviour rather than their intentions.

The discrete choice model either as a utility model, or a latent variable model is usually the default framework in discussions of nonlinear models in econometrics. A latent or utility model is related to the theory of choice in economics, where researchers aim to form a structured link between behavioural and statistical models. This link made researchers refer to models for discrete data in econometrics as binary choice models. This appears to clarify the relationship between empirical models based on different distributional assumptions and provides a basis for the calculation of important quantities in economics. Scholars posit that utility model or rational choice perspective on human behaviour provides theoretical basis for logit theory. Two traditions are involved in the modern theory of individual choices. The first one fitting a function (curve fitting - logit), and the second one representing probit which is derived from the normal distribution (Magnac, 2005). Likewise, Berkson (1951) also argues that logit (or probit) models may viewed as ' a convenient way of graphically representing and fitting a function. In effect,

both models are by far the most common econometric methods used in empirical work to estimate models for binary variables, even though the development of non-parametric alternatives over the last 30 years has been intensive (Horowitz and Savin, 2001). The theory behind binary models in economics examines their estimation by maximum likelihood as discussed in next section.

Estimation Using Logistic Regression

A binomial logistic regression attempts to predict the probability that an observation falls into one of two categories of a dichotomous dependent variable based on one or more independent variables that can be either continuous or categorical (Cohen et al., 2003; Hilbe, 2009; Menard, 2010). Logistic regression provides knowledge of the relationships and strengths between the variables so as to infer robust statistical relations (Gravetter and Wallnau 1988; Field, 2013).

In the logistic regression, a multi-step analysis was used to test the hypotheses. This method is a multi-stage analysis of the main and combined effect drivers of venture success, so logistic regression was used to analyse the binary outcomes in terms of success or failure. The aggregated analysis made use of the ultimate outcomes for each variable, as last recorded in the sample. However, for variables that had missing responses in subsequent waves, observations were captured and recorded on the basis of first wave records (Q-Wave). This approach minimised the effect of attrition from the longitudinal study, and thus maximised the modelling power. In addition, the use of this approach favoured drivers that are stable over time, and therefore exhibit the strongest aggregate main effects.

In the first step, variables were entered which represented each capital (human, social and cognitive) separately, to measure the linear (main) effects of each upon the success of new venture creation. Initially, the stepwise (forward) method was attempted. However, this approach may not be suitable due to the reliance on the statistical software to select variables based on mathematical criteria. The fit of the variables is assessed only on the basis of other variables in the model. As a result, in the stepwise method, variables can be considered to be bad predictors only because of what has already been put in the model; as such, the method runs a higher risk of missing predictors (Field, 2013). As an alternative, the enter method was employed, then different combinations of variables were run and tested so as to select the optimum set of explanatory variables. The final selection for the logistic models was based on the model that had the highest predictability for the dependent variable, incorporating an optimised set of coefficients in the logistic equation representing the conceptual model under investigation.

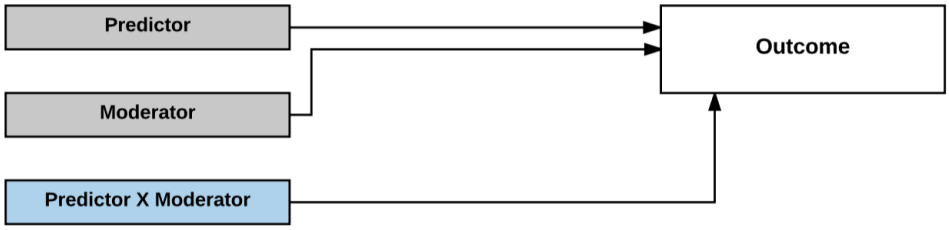
In the first stage of modelling, the analysis identifies the strongest predictors of success for each linear model [HC, SC, CC]. The objective here is to test hypotheses H1, H2 and H3, identifying the significant predictors in each of these model elements that predict business-launching outcomes. The second stage of modelling (integrative modelling), combined the significance of [HC], [SC], [CC] models with other variables by formulating a series of regression models with the interaction terms introduced separately to the [HC], [SC], [CC] models. The integrative modelling employs the moderating variables (Process Dynamics [PD], Cognitive Capital [CC]) in order to detect their effects in the proposed hypotheses H4 and H5. The second stage of modelling operates at two levels of analysis: the first level tests the moderating effect of process dynamics on the relationship between start-up capital's attributes and Nascent Entrepreneurship success (H4, H4a, b, c). While the second fold of analyses brings the best predictors of success together for each individual type of capital as identified in the first stage modelling in order to test their reciprocal effects among different forms of start-up capital (H5a, b, c), giving a special focus on the moderating effect of cognitive capital on the relationship between (HC, SC) and the outcomes of new venture creation process. In statistical terms, these combined effects are referred to as interaction terms that test the presence of moderation when the relationship between the main predictor and the outcome changes as a function of a third variable, or moderator. In other words, moderation is observed using a regression in which the outcome of the new venture creation process is predicted from the independent predictors, the moderator, and the interaction of these variables. In such cases, the significance of the interaction terms confirms the moderation effect. In order to manage the interpretation of the main effects, the predictors were transformed and centred, using grand mean centering. As both the predictors were in metric form, the moderating variable and independent variable were centralised by taking the deviation of these variables from their respective means (Field, 2013).

Integrating the interaction terms into the logistic model, as presented in Table (4.11) is to observe the moderating effect on nascent entrepreneurial outcome. The models were defined in the following equation:

$Yi\ (outcome) = b_0 + b_1$ Start-up Capital Attributes $(SCA)_{1i} + b_2$ Moderator $(M)_{1i} + b_3\ (SCA \times M)$

The parameters b1 and b2 represented the main effects of the independent variable and the moderator respectively on the outcome. A third parameter (b3) was then added to calculate the effect of the interaction terms (moderation) [HC x PD], in addition to the main effects.

Figure (4.1) Moderation Model



Source: Field (2013)

The moderation analysis in the integrative modelling was introduced to overcome the limitations inherited from the descriptive frameworks of the analysis, and thus develop a more advanced level of analysis to examine the functional aspects that could explain the links between different variables (Preacher and Hayes, 2004). The interaction terms introduced in the analysis emphasise the functional relationships between the variables being investigated. SPSS was used to determine the significant combinations that alter the relationship between each type of capital and the probability of successfully launching a new venture. As Preacher and Hayes (2004, p. 717) put it,'[t]he interaction analysis was performed as it has an ability to go beyond the merely descriptive to a more functional understanding of the relationships among variables'. The integrative (combined) modelling effectively pits human, social, cognitive and process variables against each other, to determine which combination has the strongest overall effect on the outcome of the new venture.

Table 4:11 The Model's Interaction Terms

Interaction Terms	Interaction Type	Equation	Hypothesized Interaction Outcome
[HC] x [PD]	Moderation	Yi (outcome) = $b_0 + b_1$ HC $_{1i} + b_2$ PD $_{1i} + b_3$ (HC x PD)	+
[SC] x [PD]	Moderation	Yi (outcome) = $b_0 + b_1$ SC $_{1i} + b_2$ PD $_{1i} + b_3$ (SC x PD)	+
[CC] x [PD]	Moderation	Yi (outcome) = $b_0 + b_1$ CC $_{1i} + b_2$ PD $_{1i} + b_3$ (CC x PD)	+
[HC] x [CC]	Moderation	Yi (outcome) = $b_0 + b_1$ HC $_{1i} + b_2$ CC $_{1i} + b_3$ (HC x CC)	+
[SC] x [CC]	Moderation	Yi (outcome) = $b_0 + b_1$ SC $_{1i} + b_2$ CC $_{1i} + b_3$ (SC x CC)	+
[HC] x [SC]	Interaction	Yi (outcome) = $b_0 + b_1$ SC $_{1i} + b_2$ HC $_{1i} + b_3$ (SC x HC)	+
Start-up Capital's Attributes (Nascent Entrepreneurial Capital): [HC]= Human Capital; [SC]= Social Capital; [CC]=Cognitive Capital; [PD]= Process Dynamics			

Chapter 5: Empirical Results: Descriptive and Factor Analysis Results

5.1 Introduction

Based on the conceptual model and related factors proposed in Chapter 3, the main actions to be followed in this chapter are specific; the first action is to present the model empirical descriptive results. The second action is present the factor analysis that reduced the startup capital's variables into manageable factors that reflect more precise factors. The third action is to present the correlations among the variables that constitute the proposed factors to confirm that they are correlated within certain limits without redundancy.

5.2 The Model Empirical Descriptive Results

This section looks at the general descriptive results and the general characteristics of nascent entrepreneurs who were actively engaged in pursuing ventures. The key descriptive statistics employed in this study are presented in Tables (5.1 and 5.2). A discussion follows about the study's sample of nascent ventures.

Table 5.1: Descriptive Statistics for Nascent Ventures' Outcomes

Variables	NE-Success Status	NE- Failure Status
No. Nascent Entrepreneurs (NE) with Success Status	202	
No. Nascent Entrepreneurs (NE) with Failure Status		614
Total NE (Nascent Entrepreneurs)	816	
Educational Attainment		
12 Years Up to High School Degree	18.00%	21.00%
13-15 Years Post H. School	41.50%	42.00%
16 Years College Degree	24.40%	23.00%
17-20 Years Post College	15.70%	15.00%
New Venture Location		
Other	0.90%	1.60%
Residence/Personal Property	60.40%	66%
Site of existing business	11.10%	8.20%
Special location for start ups	18.40%	12.10%
Location not yet needed	9.20%	
Gender		
Male	58.10%	49%
Female	41.90%	51%

Table 5.1: (Continued - Descriptive Statistics for Nascent Ventures' Outcomes)		
Variables	**NE-Success Status**	**NE- Failure Status**
Commitment to New Venture-35+ Hour/WK		
Yes	66%	35%
No	34%	65%
Team Formation		
1 Sole	37.20%	52.00%
2 Members	41.40%	37.00%
3 Members	8.40%	6.00%
4 Members	7.00%	3.00%
5 Members	6.00%	2.00%
New Venture Industry		
Agriculture	3.30%	3.80%
Construction	10.20%	4.20%
Manufacturing	7.00%	5.50%
Transportation and Communication	2.80%	2.30%
Wholesale	5.10%	2.30%
Retail	17.20%	29.00%
Business Services	27.90%	28.40%
Consumer Services	15.30%	16.90%
Health, Education, Government Services	11.20%	7.50%
NE=Nascent Entrepreneurs		

Table 5.2: Nascent Entrepreneurial Capital Model Description

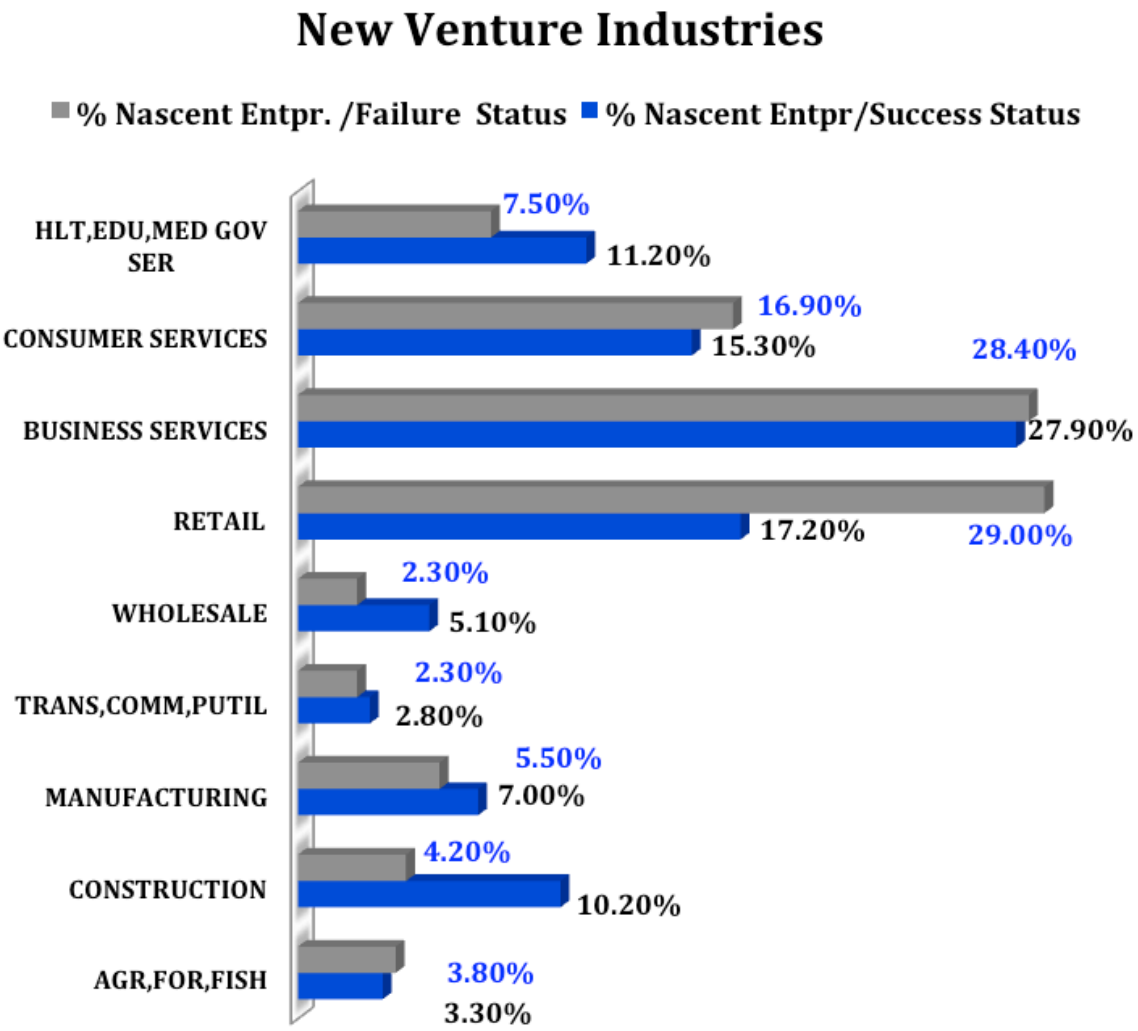
Variables	No. Obs.	Min	Max	Mean	SD
Dependent Variable (Success/ Failure of New Venture Creation Process)	816	0	1	0.26	0.44
Social Capital [SC] Variables:					
Social Skill	816	1	5	3.60	0.93
Social Role Model (Social Support by Strong Ties who had Start up Experience)	803	1	4	2.12	0.84
Strong Ties (Social Support by Non-Owners & Non Team Members)	816	1	2	1.91	.39
Weak Ties (Professional Mentoring)	816	1	5	3.00	0.19
Human Capital [HC] Variables:					
Managerial Experience	814	1	9	1.92	.37
Prior Start Up Experience	814	1	2	1.45	.49
Start Up- Management Experience	814	1	2	1.61	.48
Technical/Industrial Experience	816	1	3	1.15	.48
Prior Experience in Parent's Start-ups	816	1	3	2.62	.65
General Education	814	1	4	2.33	0.96

Table 5.2: Nascent Entrepreneurial Capital Model Description					
Variables	**No. Obs.**	**Min**	**Max**	**Mean**	**SD**
Start-up Training	816	1	4	1.34	.72
Supervision Experience	814	0	5	46.5	.23
Diversity of General Training	799	0	3	0.80	0.96
Cognitive Capital [CC] Variables:					
Cognitive Overconfidence	802	1	5	3.67	.69
Cognitive Match (Between personality and Venture)	805	1	4	3.26	.67
Cognitive Informational processing	810	1	5	3.43	.75
Cognitive Desire By Income	812	1	5	3.90	0.98
Cognitive Desire by Family	810	1	5	2.83	1.28
Cognitive Desire by Recognition	809	1	5	2.64	1.22
Cognitive Desire by Power	812	1	5	2.64	1.22
Cognitive Desire By Innovation	809	1	5	2.71	1.21
Cognitive Desire by Learning	810	1	5	3.82	1.002
Cognitive Desire by Challenge	810	1	5	3.82	1.002
Cognitive Satisfaction	816	1	5	3.52	.86
Cognitive Sales Expectation	816	1	4	1.82	1.26
Cognitive Preferred Style (Analytical /Intuitive)	816	1	3	1.52	.56
Cognitive Persistence	816	1	5	3.76	.88
Cognitive Growth Expectation (Employment base)	816	1	4	1.48	.91
Risk Awareness	816	1	4	2.24	.84
Controls					
Gender (Dummy Coded)					
Wealth (Natural log Transformation)					
Industry (Dummy Coded)					
Team Members (Dummy Coded)					

5.2.1 New Venture Industry

A profile of the industries in which the PSED-I's US new ventures were being started is shown in Figure (5.1). The industries that account for more than 50 % of founded new ventures in the study sample were Retail, Business Consulting and Consumer Services. In contrast, manufacturing industry had a lower prevalence (7%) of the founded new ventures, and this is similar to the 6.5% reported for US new businesses in Reynolds and Curtin's (2008) study. The findings agree with the studies stating that international entrepreneurial activities are closely linked with business-based services (Ram and Carter, 2003). The high frequency of non-technology sectors can be attributed to different possible reasons. For example, nascent entrepreneurs may possess general knowledge in diverse areas that encourage them to create non-technical start-ups.

Figure 5.1: New venture Industries



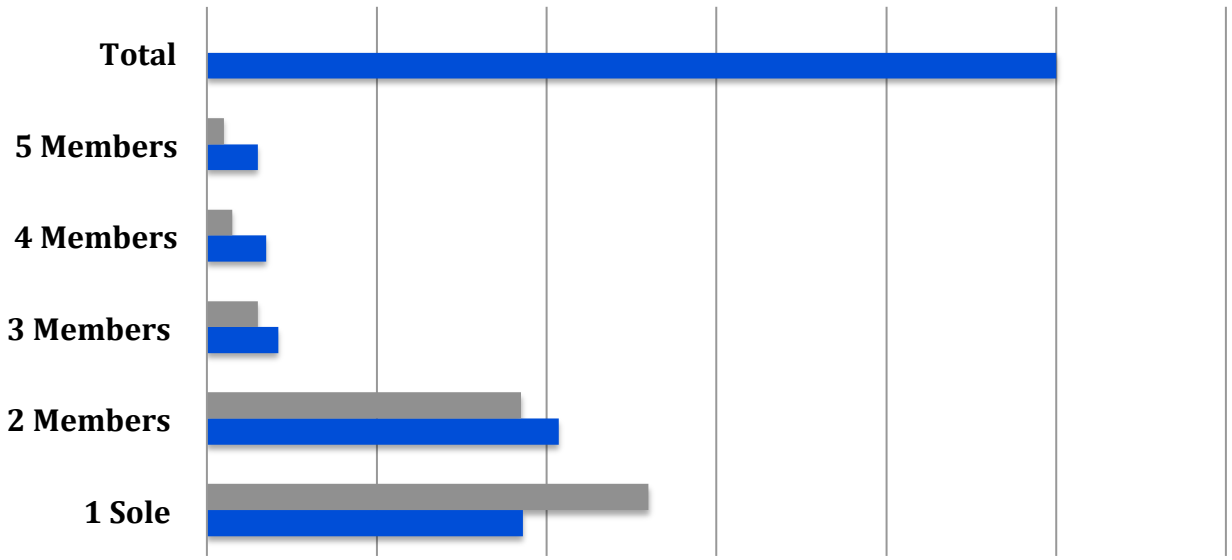
The preference for founding new ventures in customer-focused industries may be due to the limitations of labour, skills and materials required to found technical ventures as well as the subsequent cost and complexity of getting technical firms going (Carter et al., 2007). In contrast, one conceivable interpretation of the tendency to establish nascent ventures in retailing and business services is that many established firms fail to accommodate the promising ideas of ambitious employees and this leads them to establish their own ventures in industries that are characterised by low entry barriers (Shaw et al., 2008).

5.2.2 New Venture Team and Ownership

Start-up team is defined as two or more founders, who are present during the founding of the business and jointly collaborate in founding a new start-up in which they have equity interests (Kamm et al., 1990). Many empirical studies of start-up team formation reflect the superiority of

teams compared to solo founders (Kamm and Nurik, 1993; Vesper, 1997; Lechler, 2001) by stressing the team's advantage in terms of combining competencies, securing financial and social support, and accessing resources, skills and knowledge that can collectively act as tangible asset that signals commercial viability for external investors.

Figure 5.2: Start-Up Team Size-Owners



	1 Sole	2 Members	3 Members	4 Members	5 Members	Total
% Nascent Entpr. /Failure Status	52.00%	37.00%	6.00%	3.00%	2.00%	
% Nascent Entpr/Success Status	37.20%	41.40%	8.40%	7.00%	6.00%	100.00%

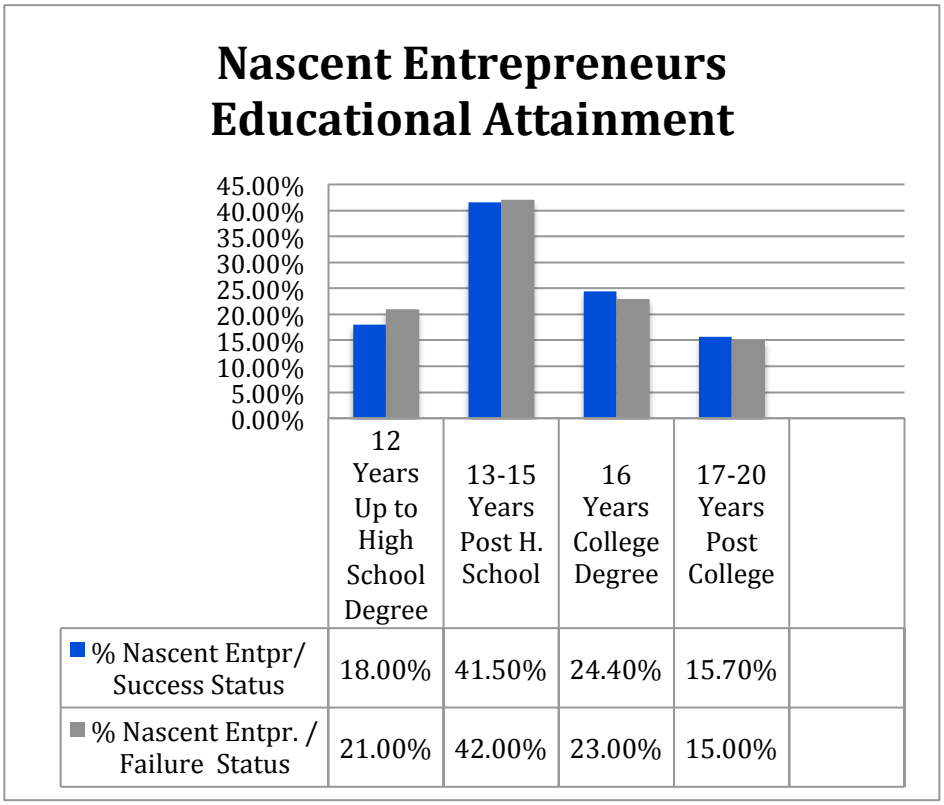
In addition, Mosakowski (1998) argued that shared ownership distributes responsibilities and driving role among different members and this appears to create dynamics that leverage the new venture creation process' momentum. These theoretical notions are congruent with the reported findings in the Table (5.2). The findings indicated that 63% of successful nascent ventures were associated with multi-ownership, while 37% were with sole ownership. In the case of abandoned nascent ventures, 52% reported sole ownership, while 48% of them were multi-ownership. Obviously, nascent ventures with multi-ownership appear to have a higher chance of attaining success. This success can be attributed to the access to combined knowledge which is a central argument in the present study but at the independent level of individual founders.

5.2.3 Educational Attainment

Entrepreneurship research has recognised general education as a crucial factor that produces positive growth and performance outcomes (Becker, 1964; Cooper and Gimeno, 1992). Research tends to view nascent entrepreneurs with higher endowment of knowledge as intelligent individuals who have a higher likelihood of founding new ventures. While other studies have associated individuals who had higher educational attainment with lower appetite towards innovation and freethinking, hindering their propensity for entrepreneurialism (Ronstadt, 1984).

From another perspective, the complexity and purpose of nascent ventures are important factors that affect the contribution of knowledge in the context of new venture creation. For example, as seen in the literature, the higher the complexities of the business domain in which the new venture operates, the more the emphasis is on the credentials and technical skills of business founders. In this study, and as shown in the Figure (5.3), the education profile of successful nascent entrepreneurs shows that (80%) of them achieved educational levels beyond high school level, and 41% had a university degree or higher.

Figure 5.3: Nascent Entrepreneurs' Educational Attainment



The reported results for successful nascent entrepreneurs are similar to the frequencies for entrepreneurs who abandoned their founding attempt. This could be attributed to the idea that educational attainment may come into play in the discovery process, but when it comes to the process of exploitation, general education appears to have little effect with a trivial positive influence that fails to distinguish successful from failed attempts. Moreover, the majority of new ventures were founded within non-technical sectors as reported above, and this may place less emphasis on educational credentials.

5.2.4 Commitment to New Venture

The level of dedication to the new venture during the gestation period is reported in Table 5.3 below. It shows that 66% of successful nascent entrepreneurs were fully dedicated to the new venture being created, and 34% were partly involved in the new start-up-founding endeavour. As per the results indicated in the Table, 65% of nascent entrepreneurs in this sample who abandoned their business-venturing attempt at the nascent stage were partly engaged in other activities while founding the nascent ventures. The findings indicate that broad interaction and active involvement in simultaneous activities can improve the charismatic, intellectual, cognitive and pragmatic abilities of entrepreneurs and their sense-making, which in turn boost their entrepreneurial absorptive capacity and aid them to keep the founding efforts going. Therefore, the findings appear to support the possibility that full engagement in the business founding process is a contributor to new venture creation success. The study's findings are congruent with Van Gelderen et al.'s (2006) empirical evidence that showed successful Dutch nascent entrepreneurs as the individuals who had a higher likelihood of establishing new ventures when they were full-time founders. In general, full-time commitment in terms of time and effort appears to create cognitive persistence that drives entrepreneurs to be successful at starting new ventures (Gatewood *et al*., 1995)[5].

[5] The interaction effect of commitment variable (moderator) will be discussed further ahead in chapter 6.

Table 5.3: Commitment to New Venture

Full Time Dedication for the founding of the new venture (35+ Hours)	% Nascent Entrepreneurs/Success Status	% Nascent Entrepreneurs/Failure Status
YES	66%	35%
NO	34%	65%
Total	100%	100%

5.2.5 Financial Capital

Wealth status and access to financial capital were added to the study's proposed model as controlled variables. Generally, as greater levels of wealth come into consideration, the association between Nascent Entrepreneurship and probability of success is maximised. Scholars conceptualise wealth as a form of financial resource that affects transitions in entrepreneurship (Keister and Moller, 2000). The role of wealth in entrepreneurship is theoretically based on the model of liquidity constraints (Evans and Jovanovic, 1989) where liquidity constraints theory posits that a substantial amount of capital is required to capitalise a new start-up, and if personal savings are not adequate, they turn to the credit market to secure capital to fund their ventures. The new venture's legitimacy at this stage is not well established and hence entrepreneurs may incur the cost of capital or use family holdings that they can pledge as collateral.

The findings in this study indicated that obtaining funds on the front line of creating new businesses is a genuine challenge for nascent entrepreneurs which may explain the tendency for them to rely on personal savings and assets (Aldrich and Martinez, 2007). The median total start-up funding for the creation of new ventures in this sample was $20,000, confirming the notion that most nascent ventures do not mandate large amounts of financial capital in the pre-startup stage. The findings in this study indicated that those nascent entrepreneurs who succeeded in turning their nascent ventures into operational start-ups had median equity of $10,000 (96% personal equity, 65% debt, 35% equity investment from other team members). Friends and family members were not a common source of equity (5%).

The results support the reported findings in a survey conducted in 1992 in the US that found that the majority of new ventures across different industries and particularly home-based businesses had low initial capital requirements with financial costs of less than $10,000 (United States Census Bureau, 1992). Wealthy individuals may also have a preference to invest in new start-ups rather

than the choice of direct engagement in Nascent Entrepreneurship. These pieces of evidence make us skeptical about the relevance of liquidity constraints on Nascent Entrepreneurship. In the context of Nascent Entrepreneurship and more specifically this analysis, the majority of nascent ventures were service-retail based ventures that appear to require limited amounts of capital up front as investment in R&D, technology, innovation, location and employees, and therefore, it is at minimal cost as compared to other capital-intensive ventures in technology and manufacturing industries. We posit that family wealth holdings have other advantages that extend beyond the acquisition of financial capital, where wealth differentials act as a gateway that furnishes founders with social relations, human capital and a lifestyle that collectively enable them to access services and resource based assets that maximise their propensity of achieving success (Ucbasaran et al., 2008; McGranahan et al., 2011).

5.3 Factor Analysis - Results

5.3.1 Confirmatory versus Exploratory Factor Analysis – Data Reduction Technique

In this study, a confirmatory factor analysis was not adopted to test the hypothesised model, but rather, exploratory factor analysis was employed to investigate the data collected and determine the components that will be utilised in the subsequent analysis. This is the accepted approach where the researcher has limited control over the specification of the number of factors and the related loadings that have the best estimation of the proposed model (Hair et al., 2006). As such, PCA was used in this exploratory context as a data reduction technique with a reduced set of factors that are suitable for the more complex statistical examination that will follow in this chapter.

Although this research has specific models that need to be tested, the measures that have been used -and consequently the data collected- should be explored first. The two most used methods for exploratory factor analysis are the common factor analysis and principal component. However, both methods are most often classified under factor analysis and limited pragmatic differences appear to exist (Blunch, 2008). Principal Components Analysis (PCA) has proven to be one of the most common dimensionality reduction algorithm used to identify new meaningful underlying variables, where coherent patterns can be detected more clearly.

PCA is mainly used to reduce high dimensional data data into factors (latent variables) that can predict certain phenomena (i.e. of whole data) to a satisfactory level. The generated components are linear combinations of the original data that are optimally weighted and derived from the correlation matrix of the data by their contribution to explaining the variance in a particular orthogonal dimension (Dunteman 1994; Hair et al., 2006). This aid researchers in identifying a new set of dimensions such that all the dimensions are linearly independent (orthogonal) and ordered according to the variance of data (Richardson, 2009). We therefore have the following requirements for constructing the covariance matrix:

1. Maximise the signal, measured by variance (maximise the diagonal entries)

2. Minimise the covariance between variables (minimise the off-diagonal entries)

This seems to be a visible option when "the researcher has little control over the specification of the structure (e.g., number of factors, loadings of each variable etc.)" (Hair et al., 2006: 162). The following points raised by Hair et al. (2006), highlight the conditions that promote researchers to use PCA method:

"Component factor analysis is most appropriate when:

a) data reduction is a primary concern, focusing on the minimum number of factors needed to account for the maximum portion of the total variance represented in the original set of variables;

b) prior knowledge suggests that specific and error variance represent a relatively small proportion of total variance".

However, the drawback of the using large-scale dataset is the existence of irrelevant variables in the statistical models. This is not a trivial problem, but rather a fundamental obstacle in empirical science (Shlens, 2009). In order to minimise the effect of such variables some data reduction is usually necessary. The data in the present research is quantifiable with high dimensional data. Thus, principal component analysis was chosen in the present study, as the main purpose is to reduce the construct variables into specific dimensions, focusing on the minimum number of factors that capture the construct, with the highest representation of the original set of variables.

The principal component analysis in the present study used a large set of data and found an optimal new basis in which to re-express the data. This method defines independence by considering the variance of the data in the original basis. It aims to de-correlate the original data by identifying the

directions in which variance is maximised with minimum number of components and then use these directions to define the new basis (Richardson, 2009). This can be attained by calculating the correlations among the dataset, extracting the maximum non-redundant attributes of the original data using a transformation described by an orthogonal matrix. Therefore, by selecting linear combinations (principal components), we can project the data into dimensions, while keeping most of the information (variation) present in the original data. In such case, the total variation in a dataset can be seen as representing the information that we would like to keep (Jolliffe 2002; Shan et al., 2011).

In addition, dimensionality reduction has two classifications— variable elimination and variable extraction. Variable elimination is eliminating variables entirely if we detect redundancy issue with other variables. However, this technique increases the possibility of data loss. Variable extraction, on the other hand, is the creation of new variables from the original set. PCA is the example of one such extraction method. In the extraction technique, we consider all the variables and take the ones that give us maximum variance across the datasets. This also makes PCA a common methodology to construct indexes from quantitative data (Lagona and Podovano 2007).

This reduction in dimensionality represents a modern data analysis that meant to find out the uniqueness in the original dataset, which may have involved many variables, and then reveal latent constructs and simplified structures that often underlie it (Amoros et al., 2013). Nowadays large datasets contain random variables that hinder our ability to visualise such high dimensional data. Some of these variables are meaningless for the purpose of analysis. It is therefore often the case that an examination of the reduced dimension data set will allow the researcher to spot trends, patterns and outliers in the data, far more easily than would have been possible without performing the principal component analysis (Shan et al., 201; Amoros et al., 2013).

Though it is a powerful technique, with a diverse range of possible applications, but there are some inherent issues with this reduction technique, which have caused a reduction in its employment (Richardson, 2009). For example, there is no guarantee that the dimensions are interpretable. Although these uncorrelated variables constructed as linear combinations of the original dataset, and have some sensible features, they may not necessarily relate to relevant physical quantities (Fodor, 2002). Moreover, the maximization of variance in the dimensional space of the data under a quadratic constraint may result in a large number of variables loading on the first principle component. Although this leads to dimension reduction, there is little we can do

with such components, as the interpretation might be lost. In order to overcome this limitation, we used Varimax or Orthomax rotation. For comprehensive technical explanations, mathematical proofs and PCA linear algebra see Shlens (2009). The process and the results of analysis, which is obtained by using SPSS, are presented in the next section.

5.3.2 Principal Component Analysis - Results

When choosing to analyse data using PCA, a critical part of the process involves checking and testing to make sure that the data are suitable for this type of analysis (Kaiser, 1960; Cattell, 1966). PCA should be selected as a statistical analysis only if the study data meets specific assumptions. These assumptions are related to the choice of study design as well as the nature of the selected data. The assumptions that can be tested include: (a) linearity between all variables, which can be evaluated using a correlation matrix and (b) sampling adequacy, which can be detected using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for the overall data set, in order to produce a reliable result. Generally speaking, a minimum of 150 cases or 5 to 10 cases per variable has been recommended as minimum sample sizes. Sample Adequacy for the selected data in this study was 70%.

Before proceeding with the PCA, congeneric reliability test was performed. Alpha / rho C did not meet the requisite level, and therefore bivariate correlation was performed to eliminate the inimical variables. The bivariate correlation analysis was performed for the main models- [SC], [HC], [CC] to confirm whether or not significant correlations exist between the variables that constitute each model. Before we proceed with the factor analysis, we examined the correlations between the variables in each model to detect if there were any variables that were not strongly correlated with any other variable. The level of correlation considered worthy of a variable's inclusion is usually $r \geq 0.3$. The correlation matrix was examined for any variable that does not have at least one correlation with another variable where $r \geq 0.3$ (Altman and Bland, 2005; Field, 2009; Barde, 2012; Field, 2009). Based on the results of the correlation analysis and the stated criterion, the following were included in each linear model:

- [HC]- 25 Items
- [SC]- 18 Items
- [CC]- 30 Items
-

While other items that had low correlation with other variables within the relevant model were excluded from the proposed models. PCA analysis followed the bivariate correlation to reduce the

data and identify the loaded factors that represent the maximum variation within the correlation matrix.

5.3.2.1 Component Analysis of the Human Capital Factor [HC]

At first, all 25 items used in the study to capture [HC] model were selected to run the principal component analysis. Although there are some statistical considerations in deciding the number of components to be attained in the PCA, the researcher will also have to make subjective judgements. In essence, PCA explains as much of the variance as possible using as few components as possible, and therefore after the successful extraction of the components, some criteria should be selected to aid us in deciding the number of components to retain: (a) interpretability criterion (b) the eigenvalue-one criterion, (c) the proportion of total variance accounted for, and (d) the scree plot test.

The first criterion, interpretability, is arguably the most important criterion and it largely revolves around the concept of 'simple structure' and whether the final solution makes sense. For the number of components to influence the interpretability of the final solution, we first need to inspect the rotated component matrix. Rotated components load on each variable. This test aims to achieve simple structure by eliminating cross loading. This simple structure is attained when each variable has only one component that loads strongly on it and each component loads strongly on at least three variables. So, before checking the cross loading in the component matrix, the anti-image correlation matrix should be checked first. The latter mentioned matrix in [HC] analysis detected six items below the acceptable limit (0.5) that should be deleted (Hair et al., 2006). Before deleting these items, the PCA component matrix was reviewed in order to eliminate variables with cross loading (loadings differing <0.1).

In this step, four items were detected with cross loadings and they were excluded from the analysis. After eliminating the six items, the analysis was re-performed, and the scores in the anti-image correlation matrix were re-checked and found to be within the acceptable limit. Next, the communalities for the variables were examined in order to confirm the acceptable level of variance (>= 0.5) (Hair et al., 2006). The communality is the proportion of each variable's variance that is accounted for by the principal components analysis and can also be expressed as a percentage. The communalities' results detected five items below the acceptable limit, so it was decided to exclude them. The factor matrix was checked again to detect items with cross loadings, and four items were identified with cross loading issues, and these items were deleted. The last step resulted in 12 items loading onto four factors with satisfactory structure. The [HC] items that loaded onto the

four factors are listed in Table (5.5).

The second criterion is related to examining the proportion/percentage of total variance explained by each component: (1) the proportion of variance explained by each component individually and (2) the cumulative percentage of variance explained by a set number of components. The information about the % of variance and cumulative % will be found in the Total Variance Explained Table (5.4). The first component will explain the greatest amount of total variance, with each subsequent component accounting for relatively less of the total variance. Generally speaking, only the first few components will need to be retained for interpretation and these components will account for the majority of the total variance.

The last criterion is related to the scree plot of the total variance explained by each component (its eigenvalue) against its respective component. The components to retain are those before the (last) inflection point of the graph. The inflection point is meant to represent the point where the graph begins to level out and subsequent components add little to the total variance. Visual inspection of the scree plot would lead to the retention of four components as indicated in Figure (5.4). The eigenvalues and the percentages of variance for the four-loaded factors are presented in Table (5.4). In the [HC] test, it made theoretical sense that four main components might be extracted. This was confirmed by the scree plot (Figure 5.4) and the variance explained by individual components and the total variance explained criterion. A varimax orthogonal rotation was employed to aid the interpretability. The rotated solution exhibited a simple structure. The interpretation of the data was consistent with the human capital's attributes that were designed to measure with strong loadings of practical experience items on component 1, general knowledge on component 2, diversity of [HC] component 3, and intensity of [HC] on component 4. Component loadings are presented in Table (5.5). Next, the Kaiser–Meyer–Olkin (KMO) measure was used as an index of whether there are linear relationships between the variables and thus whether it is appropriate to run principal components analysis on the data. Its value can range from 0 to 1, with values above 0.6 suggested as a minimum requirement for sampling adequacy, but values above 0.8 considered good and indicative of principal components analysis being useful (Kaiser, 1974).

A KMO measure can be calculated for all variables combined and for each variable individually (individual variables are found on the diagonals of the anti-image correlation matrix, as found in the Anti-image Matrices). In the [HC] construct, a value of 0.710 was attained for the KMO which is satisfactory. The statistic attained indicated a sufficient level of sampling adequacy (Field, 2009). Bartlett's test also showed a significant level ($p<0.05$), demonstrating significant

correlations among the remaining variables. All the commonalities were greater than 0.647. The principal components obtained explained 70% of the total variance in the [HC] model, as presented in Table (5.4).

Figure 5.4: Scree Plot on Component Analysis of Human Capital Model

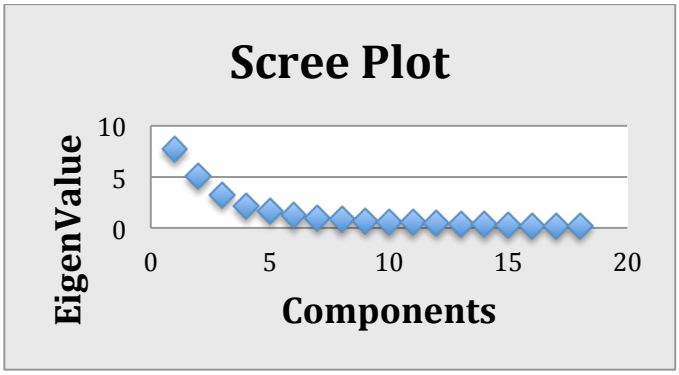


Table 5.4: Total Variance Explained for [HC]

Comp.	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.916	34.322	34.322	2.916	34.322	34.322	2.187	22.036	22.036
2	1.924	17.476	51.798	1.924	17.476	51.798	1.787	20.133	42.169
3	1.153	9.871	61.669	1.153	9.871	61.669	1.305	16.135	58.304
4	1.04	8.653	70.322	1.04	8.653	70.322	1.226	12.018	70.322
5	0.814	6.865	76.633						
6	0.753	5.656	82.734						
7	0.678	4.794	88.631						
8	0.567	3.896	93.369						
9	0.485	3.276	97.261						
10	0.308	2.405	97.897						
11	0.264	1.764	98.987						
12	0.189	1.022	100						

Table 5.5: Summary of Principal Component Analysis for the [HC] Factor

Components	Factors (1-4)			
	Practical Experience	General Knowledge	Diversity [HC]	Intensity [HC]
	1	2	3	4
Technical EXP.	**0.617**			
General Education		**0.886**		
General Training		**0.813**		
Managerial Experience	**0.509**			
Supervision Experience	**0.534**			
Diversity of Training		**0.786**		
EXP. In Parents Start-ups	**0.891**			
Start-up Experience	**0.798**			
Diversity of knowledge			**0.554**	
Intensity of knowledge				**0.499**
Diversity of Experience			**0.891**	
Intensity of Experience				**0.616**
Eigenvalues	2.187	1.787	1.305	1.226
% of Variance	22.036	20.133	16.135	12.018
Cumulative %	22.036	42.169	58.304	70.322
Cronbach's Alpha	.794	0.688	0.518	0.491
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization				

5.3.2.2 Component Analysis of the Cognitive Capital Factor [CC]

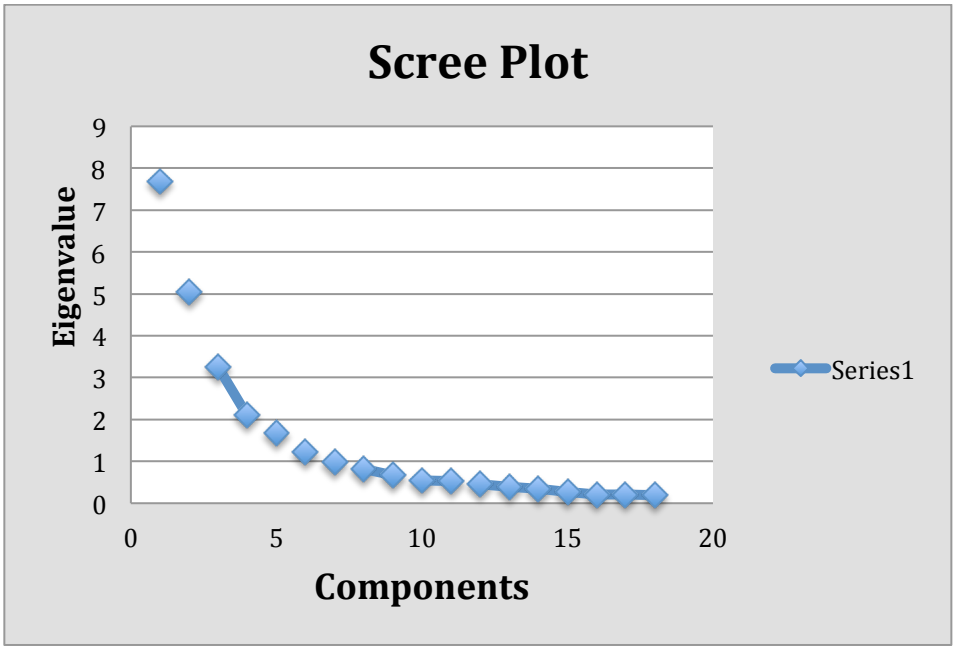
Following the same steps for the analysis of the [HC] model, 30 items were selected to run the PCA to measure the cognitive aspects. Inspection of the correlation matrix showed that all variables had at least one correlation coefficient greater than 0.30.

The anti-image correlation matrix was checked first and eight items were below the acceptable limit (0.5) (Hair et al., 2006). Before deleting these items, the PCA component matrix was reviewed in order to eliminate variables with cross loadings (loadings differing < 0.1). In this step, six items were detected with cross loadings and they were excluded from the analysis. After eliminating the six items, the analysis was re-performed and the scores in the anti-image correlation matrix were re-checked and found to be within acceptable limits. Next, the communalities for the variables were examined in order to confirm acceptable levels of variance (>= 0.5) (Hair et al., 2006). The communalities' results detected four items below the acceptable limit, so it was decided to exclude them. The factor matrix was checked again to detect items with

cross loadings, and two items were identified with cross loading issues, and these items were deleted. The last step resulted in 18 items loading onto six factors with satisfactory structure. The [CC] items loading onto the six factors listed in Table (5.7).

The overall Kaiser-Meyer-Olkin (KMO) measure was .714 with individual KMO measures all greater than 0.70. Bartlett's test of sphericity was statistically significant (p<. 0005), indicating that the data was likely factorable. PCA revealed six components that had eigenvalue greater than one and which explained 30%, 20%, 9%, 7%, 5%, and 4% of the total variance, respectively. Visual inspection of the scree plot in Figure (5.5) indicated that the six components should be retained. In addition, a six-component solution met the interpretability criterion. As such, six components were retained.

Figure 5.5: Scree Plot on Component Analysis of Cognitive Capital Factor



The six-component solution explained 79% of the total variance as presented in Table (5.6). A Varimax orthogonal rotation was employed to aid the interpretability. The rotated solution exhibited a simple structure. The interpretation of the data was consistent with the cognitive attributes that were designed to be measured with strong loadings of the desired items on component 1, cognitive style and informational processing on component 2, expectations on component 3, confidence on component 4, risk profile on component 5, and satisfaction on component 6. The component loadings are presented in Table (5.7).

Table 5.6: Total Variance Explained for [CC]

Comp	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.682	30.1	30.1	7.68	30.1	30.1	6.806	22.01	23.01
2	5.041	20	50.1	5.04	20	50.1	5.764	16.01	38.02
3	3.257	9.365	59.47	3.26	9.37	59.47	4.624	14.9	52.92
4	2.104	7.052	66.52	2.1	7.05	66.52	3.852	11.88	64.8
5	1.683	5.504	72.03	1.68	5.5	72.03	2.733	8.362	73.16
6	1.211	4.543	76.57	1.21	4.54	76.57	1.976	5.84	79
7	0.989	3.985	80.55						
8	0.816	3.473	84.03						
9	0.665	2.804	86.83						
10	0.549	2.467	89.3						
11	0.523	2.103	91.4						
12	0.453	1.714	93.114						
13	0.392	1.686	94.8						
14	0.352	1.443	96.243						
15	0.274	1.155	97.398						
16	0.211	1.003	98.401						
17	0.205	0.823	99.224						
18	0.188	0.776	100						
Extraction Method: Principal Component Analysis.									

Table 5.7: Summary of PCA for the [CC] Factor

Components	Factors (1-6)					
	Desires	Cognitive style &processing	Expectations	Confidence	Risk profile	Satisfaction
	1	2	3	4	5	6
Illusion of control in personal abilities				**0.745**		
Persistence in doing challenging activities				**0.839**		
Match between personality and new venture		**0.886**				
Informational processing		**0.798**				
Cognitive Preferred Style (Analytical /Intuitive)		**0.743**				
Desire By Income	**0.955**					
Desire by Family	**0.935**					
Desire by Recognition	**0.928**					
Desire by Power	**0.916**					
Desire By Innovation	**0.867**					
Desire by Learning	**0.796**					
Desire by Challenge	**0.645**					
Satisfaction job						**0.612**
Satisfaction life						**0.567**
Expectation (Growth Employment base)			**0.892**			
Expectation (sales)			**0.789**			
Risk Perception for Competition					**0.655**	
Risk Appetite					**0.599**	
Eigenvalues	6.806	5.764	4.624	3.852	2.733	1.976
% of Variance	22.01	16.01	14.9	11.88	8.362	5.84
Cumulative %	23.01	38.02	52.92	64.8	73.16	79.00
Cronbach's Alpha	.932	.828	.803	.767	.720	.701
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization						

5.3.2.3 Component Analysis of the Social Capital Factor [SC]

Following the same steps for the analysis of [HC] and [CC] models, 18 items were selected to run the PCA to measure the social capital aspects. Inspection of the correlation matrix showed that all variables had at least one correlation coefficient greater than 0.30.

The anti-image correlation matrix was checked first and four items were below the acceptable limit (0.5) (Hair et al., 2006). Before deleting these items, the PCA component matrix was reviewed in order to eliminate variables with cross loadings (loadings differing < 0.1). In this step two items were detected with cross loadings and they were excluded from the analysis. After eliminating the two items, the analysis was re-performed, and the scores in the anti-image correlation matrix were re-checked and found to be within acceptable limits. Next, the communalities for the variables were examined in order to confirm acceptable levels of variance (>= 0.5) (Hair et al., 2006). The communalities' results detected two items below the acceptable limit, so it was decided to exclude them. The factor matrix was checked again to detect items with cross loadings, and two items were identified with cross loading issues, and these items were deleted. The last step resulted in 14 items loading onto four factors with satisfactory structure. The [SC] items loading onto the four factors are listed in Table (5.9).

The overall Kaiser-Meyer-Olkin (KMO) measure was .70 with individual KMO measures all greater than 0.70. Bartlett's test of sphericity was statistically significant ($p < .0005$), indicating that the data were likely factorable. PCA revealed four components that had eigenvalues greater than one and which explained 23.7%, 14.5%, 8.8% and 7.5% of the total variance, respectively. Visual inspection of the scree plot in Figure (5.6) indicated that the four components should be retained. In addition, a four-component solution met the interpretability criterion. As such, four components were retained.

The four-component solution explained 55% of the total variance as presented in Table (5.8). A Varimax orthogonal rotation was employed to aid the interpretability. The rotated solution exhibited a simple structure. The interpretation of the data was consistent with cognitive attributes that are designed to quantify with strong loadings of social skills items on component 1, social support by strong ties on component 2, social support by weak ties on component 3, and social role model on component 4.The component loadings are presented in Table (5.9).

Figure 5.6: Scree Plot on Component Analysis of the Social Capital Factor

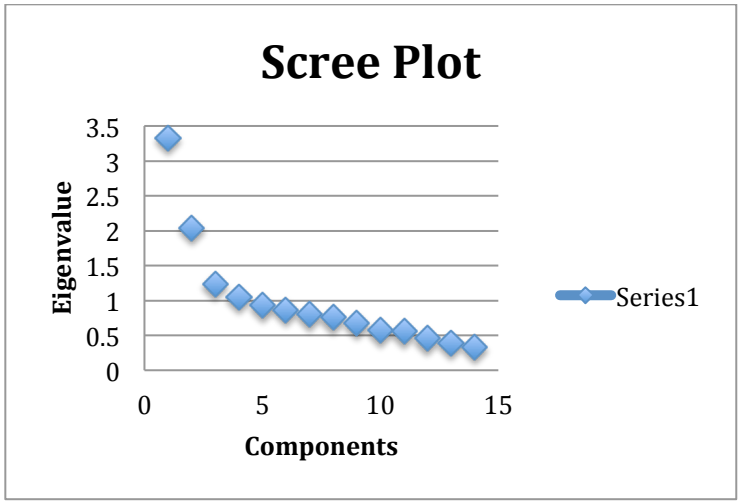


Table 5.8: Total Variance Explained for [SC]

Comp	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.325	23.751	23.751	3.325	23.751	23.751	3.325	23.751	23.751
2	2.043	14.590	38.341	2.043	14.590	38.341	2.043	14.590	38.341
3	1.233	8.804	47.145	1.233	8.804	47.145	1.233	8.804	47.145
4	1.055	7.535	54.680	1.055	7.535	54.680	1.055	7.535	54.680
5	.934	6.668	61.347						
6	.869	6.208	67.555						
7	.804	5.744	73.300						
8	.757	5.404	78.704						
9	.673	4.806	83.510						
10	.576	4.113	87.623						
11	.551	3.936	91.559						
12	.458	3.271	94.830						
13	.392	2.799	97.629						
14	.332	2.371	100.000						

Table 5.9: Summary of PCA for the [SC] Factor

#	Components	Factors (1-4)			
		Social Skills	**Support by Strong Ties**	**Support by Weak Ties (Professional Mentoring)**	**Social Role Model**
		1	**2**	**3**	**4**
1	Social Perception	**.801**			
2	Impression Management	**.749**			
3	Persuasion and influence	**.743**			
4	Communication	**.740**			
5	Parent s' Possession of Entrepreneurship experience				**.786**
6	Existence of successful stories for family members in entrepreneurship career				**.607**
7	Parent's Breadth of Entrepreneurship experience				**-0.578**
8	General support by strong ties who had start up experience		**.772**		
9	Emotional support by strong ties		**.686**		
10	Financial support by strong ties		**-.641**		
11	Access to resources by strong ties		**.617**		
12	Social Support by Non-Owners/ non team members		**.967**		
13	Advice by subject matter experts in the business domain (industry)			**.786**	
14	Information support by weak ties			**.694**	
	Eigenvalues	3.325	2.043	1.233	1.055
	% of Variance	23.751	14.590	8.804	7.535
	Cumulative %	23.751	38.341	47.145	54.680
	Cronbach's Alpha	.840	.723	.712	.702
	Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization				

5.4 Empirical Results - Correlation

Along with the fourteen factors extracted in the previous section, Pearson's correlation analysis was conducted to test relationships between the variables that constitute each factor in the study's proposed model. The correlation Tables in appendix (B) show the results of Pearson's correlations. Correlation analysis was carried out to measure the direction and magnitude of the linear relationship between the independent variables employed in the proposed conceptual model (Altman and Bland, 2005; Barde and Barde, 2012; Field, 2013). The magnitude of the Pearson correlation coefficient determines the strength of the correlation. The correlation test was performed to eliminate redundant variables from the conceptual constructs, confirming an acceptable level of correlation between variables that constitute each construct. As a parametric technique, correlation analysis requires the fulfilment of certain assumptions prior to the analysis to confirm the assumptions about the shape of the population distribution (Gravetter and Wallnau, 1988). Using more than one variable to examine the contribution of independent variables to the regression model may introduce a multicollinearity problem, which exists when the independent variables are highly correlated (r = 0.6 and above) (Cohen, 1988). Although there are no hard-and-fast rules for assigning strength of association to particular values, some general guidelines are provided by Cohen (1988):

Coefficient Value	Strength of Association
$0.1 < \| r \| < .3$	Small correlation
$0.3 < \| r \| < .5$	Medium/moderate correlation
$\| r \| > .5$	Large/strong correlation
Source: Cohen (1988)	

Anderson et al. (1990) stated that an r = 0.7 or above may indicate a potential computational problem. Thus, a multicollinearity test was carried out to evaluate the degree of correlation among the variables, irrespective of their connection to the hypothesis under investigation. The results show that the subject variables were not correlated highly enough to indicate a problem of multicollinearity. Preliminary analyses showed the relationship to be linear with variables that are normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), and there were no outliers. Looking at the independent constructs, the correlation test indicated that there were low to moderate positive and negative correlations between the variables at different levels of significance.

The variance inflation factor ratio (VIF) is a common method for measuring multicollinearity. The VIF diagnostic test is calculated as the inverse of tolerance 1- R^2, where the inverse of tolerance is considered as a direct measure of collinearity. Therefore, higher tolerance means lower degree of collinearity, while a lower VIF means a lower degree of collinearity (Hair et al., 2006). Accordingly, VIF was employed to investigate the strength of relationships between the independent variables. This check is crucial to confirm that the relationship among covariates is not associated with inflated standard errors that can affect the stability of the coefficients and distort the interpretation of the model, yielding an elevated risk of false-positive results (Type I error). The results of the VIF diagnostic test reported that all variables were well below 10 and tolerance levels were all well above 0.20; therefore, we can conclude that there is no evidence of collinearity in the data (Cohen et al., 2003; Hair et al., 2006; Field, 2009; Curto and Pinto, 2011).

The correlation results are reported in Appendix (B).

Chapter 6 Empirical Results – Logistic Regression

6.1 Introduction

In the previous chapter, the empirical results of the descriptive and the factor analysis were presented and analysed. This chapter presents and discusses the empirical results of logistic regression for the secondary data utilised in this study to ascertain and assess the linear and integrated effects of nascent entrepreneurs' attributes on the outcomes of the new venture creation process. This should aid us in developing an understanding of how the moderating effect of cognitive capital and process dynamics affect the relationship between start-up capital' attributes and outcomes in new venture creation processes. Therefore, before trying to make sense of the findings of start-up capital's linear effects it may be useful to consider their integrated effects on outcomes, which can help interpretation of the start-up capital's individual effects.

Accordingly, the objective of this chapter is twofold. Firstly, it will present the main effects of the start-up capital's attributes, and secondly it will explore the conclusiveness of the main effects by exploring their interactions within the integrative modelling. This will aid us to make sense of the overall patterns. The focus here is on the integrated modelling that will aid us in drawing insights into the conceptual framework and lay the groundwork for proposed recommendations based on our understanding of the implications associated with new venture creation both practically and theoretically.

6.2 "Start-up Capital" Main Effects [H1, H2, H3]

6.2.1 Human Capital [HC] Main Effect [H1 – Model 1-2]

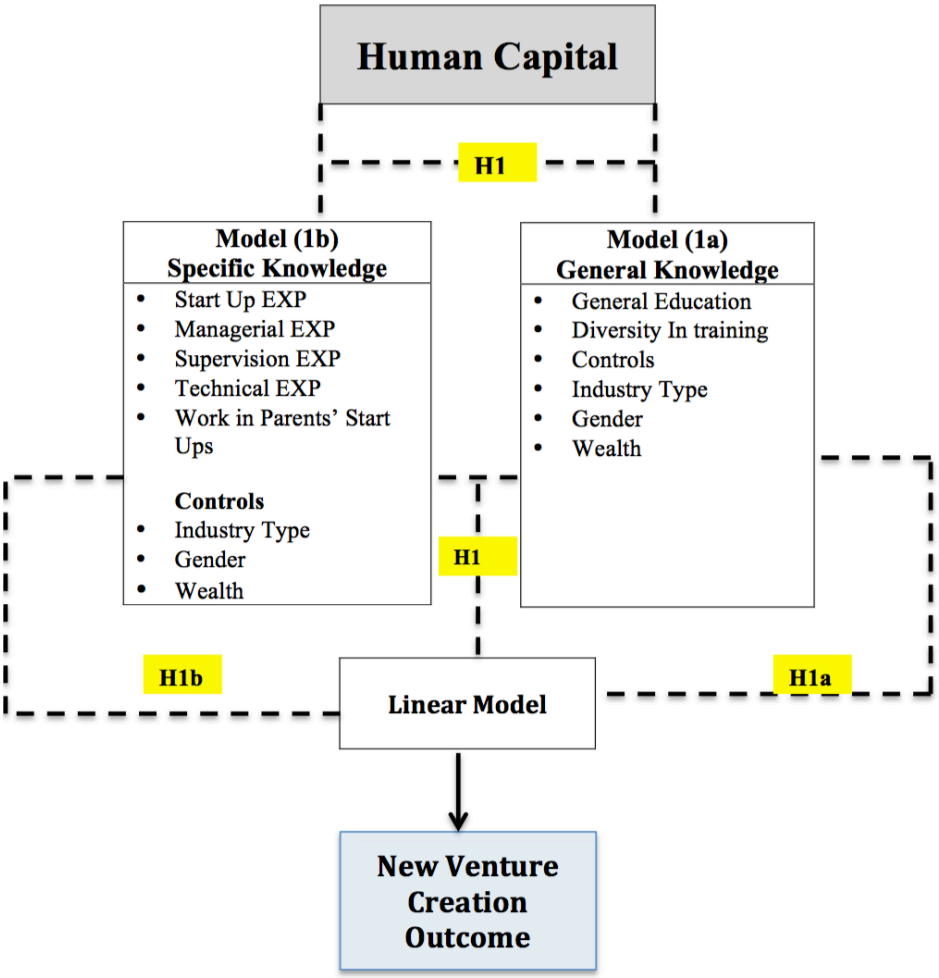
Model 1-HC, depicted in Figure (6.1), represents the [HC] linear model, comprising three hypothesised components (H1, H1a, H1b). For [HC], two components, namely HC-General and HC-Specific were employed to observe the main (linear) effects of human capital on the outcome of the new venture creation process. The following equations were used:

Yi (outcome) = $b_0 + b_1$ HC General$_{1i} + b_2$ HC Practical $_{2i}$ **(Model 1-HC Linear Model)**

- Yi (outcome) = $b_0 + b_1$ HC Education$_{1i} + b_2$ HC Diversity of Training $_{2i}$ **(Model 1-HC-General)**

- Yi (outcome) = b_0 + b_1 HC Tech EXP $_{1i}$ + b_2 HC Start-up Exp. $_{2i}$ + b_3 HC Parent Buss $_{3i}$ + b_4 HC Managerial Exp. $_{4i}$ + b_5 Supervision Exp. $_{5i}$ **(Model 1-HC-Practical)**

Figure 6.1: [HC] Linear Model – Empirical Results



The logistic regression model for [HC] was statistically significant, χ^2 (4) = 27.402, p < .0005. Model 1 presents the [HC] main effects for general and practical knowledge. Model 1 explained 7% (Nagelkerke R^2) of the variance in new venture founding outcomes and correctly classified 71.0% of cases. Sensitivity was 45.7%, specificity was 84.6%, positive predictive value was 61.5% and negative predictive value was 74.3%. The results of the binary logistic regression showed that seven items had a significant main effect on the outcome as presented in Table (6.1), which outlines the model summary and calculated estimates. In the present study, the estimated coefficients describe the size and direction of the relationship between a predictor and the response variable. We use the estimated coefficients to determine whether a change in a predictor

variable in the model makes the event more likely or less likely. Generally, positive coefficients make the event more likely and negative coefficients make the event less likely.

Table 6.3 presents the results of the hypotheses testing (H1a/b) and displays coefficient estimates and standard errors. In Model 1, HC independent variables as: Educational Attainment, Diversity of General Training, Technical Experience, Experience in Parents' Start-ups, had a positive main effect on nascent entrepreneurial outcome (β = .107; .215, $p < .01$; β =. 493, $p < .01$; β = .261, $p < .05$), respectively. While other HC independent variables as: Start-up Ownership Experience, Management Experience had a negative main effect on nascent entrepreneurial outcome (β = -.306, $p < .10$; β = -.138), respectively.

Model 2 controls for the variables [Wealth], [Industry] [Team Members] and [Gender]. All control variables except for gender had significant positive effects on the prediction model, meaning that Model 2 (controlled Model) reported a substantial improvement of 18% on the predictability of Model 1, with a Nagelkerke R^2 equal to 25%. Thus, Model 2 had a higher significance than Model 1 in differentiating the outcomes of the new venture creation process. In Model 2, the positive significance of [Diversity of General Training; β = .179, $p < .10$] and [Technical Experience; β = .406, $p < .05$] were not retained in Model 2, while [Management Experience; β = -.179, $p < .05$] appeared in Model 2 with a higher positive significance. The negative significance of [Start-up Experience; β =-.307] and positive significance of [Experience in Parents' Start-ups; β = .147] were not retained in Model 2, while [Educational Attainment] and [Supervision Experience] remained as insignificant predictors.

The preceding findings confirm the existence of significant relationships for the hypotheses:

H1a: General human capital is a significant predictor of the outcome of new venture creation process. The diversity aspects of general knowledge result in this confirmation.

H1b: Practical human capital is a significant predictor of the outcome of new venture creation. The specific aspects of practical knowledge: Technical Experience, Prior Experience in Parents' Start-ups] result in this confirmation.

Accordingly, the existence of significant relationships is confirmed for the hypothesis:

H1: Human capital is a significant predictor of the outcome of the new venture creation process. The aspects stated above drive the confirmation.

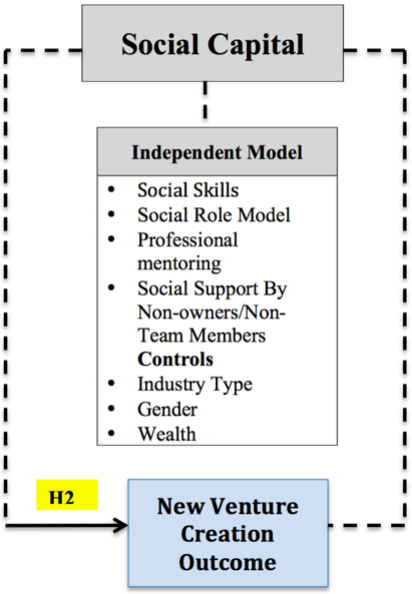
6.2.2 Social Capital [SC] Main Effect [H2 – Model 1-2]

The [SC] linear model explained 8% (Nagelkerke R^2) of the variance in new venture-founding outcomes and correctly classified 75% of cases. Sensitivity was (45.7%) and specificity was (84.6%). The results of the binary logistic regression showed that four social capital items had a significant effect on the achieved outcome, as shown in Table 6.2, which outlines the model summary and calculated estimates. The following equation was used:

$Yi\ (outcome) = b_0 + b_1\ SC_{1i} + b_2\ SC_{2i} + b_3\ SC_{3i} + b_4\ SC_{4i} + b_5\ SC_{5i}$ **(Model 1-SC Linear Model)**

Four social nexuses were identified, which had significant main effects on the creation of new ventures. These were related to the following predictors: [Social Role Model)] ($\beta = .231$; $p < .05$); [Social Skills] ($\beta = .219$; $p < .05$); and [Strong Ties- Social Support by Non-Owners and Non-Team Members] ($\beta = 1.082$; $p < .01$); [Weak Ties - Professional Mentoring] ($\beta = -.816$; $p < .10$). Model 1 represents the linear model of [SC], which incorporates all the elements mentioned above. The first three elements were reported as significant positive predictors, while [Weak Ties-Professional Mentoring] was found to be a significant negative predictor. Model 1 reported a model fit of $R^2 = 8\%$. Model 2 introduced the control variables of [Wealth], [Industry] [Team Members] and [Gender]. All control variables had significant effects upon the prediction model, and resulted in a better model fit than Model 1 ($R^2 = 28\%$).

Figure 6.2: [SC] Linear Model – Empirical Results



According to **H2:** Social capital is a significant positive predictor of the outcome of new venture creation process. This hypothesis assumes that nascent entrepreneurs with high endowment of social capital should be more capable of coping with the process of creating a new venture and the liabilities of newness, and should be able to develop cooperative behaviours that enable them to attain higher levels of learning (Soderling, 2003). The findings presented in Models 1-2-[SC] thus confirm the existence of significant relationships for the hypothesis: H2. The confirmation appears as a result of the significant positive effects of [Social Skills], [Social Role Models], and [Strong Ties].

6.2.3 Cognitive Capital [CC] Main Effect [H3 – Model 1-2]

The logistic regression model for [CC] was statistically significant, $p < .0005$. The model explained 25% (Nagelkerke R^2) of the variance in the outcome of founding a new venture (39% with control variables) and correctly classified 75% of cases, sensitivity was 47.6% and specificity was 83.6%. The results of the binary logistic regression showed that 13 cognitive capital items had a significant main effect on the achieved outcome, as shown in Table 6.3, which outlines the model summary and calculated estimates. The following equation was used:

$Yi\ (outcome) = b_0 + b_1\ CC_{1i} + b_2\ CC_{2i} + b_3\ CC_{3i} + \ldots + b_{13}\ CC_{13i}$ **(Model 1-CC Linear Model)**

The 13 cognitive nexuses had significant main effects on the creation of new ventures, and they were related to the following predictors: [Cognitive Persistence] ($\beta = .242$; $p < .05$); [Cognitive Confidence] ($\beta = 0.348$; $p < .05$); [Cognitive Style] ($\beta = -0.33^{**}$; $p < .05$); [Cognitive Desire by Family] ($\beta = -0.24$; $p < .01$); [Cognitive Desire by Power] ($\beta = 0.155$; $p < .05$); [Cognitive Desire by Learning] ($\beta =. 34$; $p < .01$); [Cognitive Desire by Income] ($\beta = .320$; $p < .01$); [Cognitive Expectation by Sales] ($\beta = 0.505$; $p < .01$); [Cognitive Expectation by Growth] ($\beta = 0.321$; $p < .01$); [Cognitive Desire by Family Tradition] ($\beta = 0.172$; $p < .10$); [Cognitive Information] ($\beta = -0.246$; $p < 0.05$); [Cognitive Job Satisfaction] ($\beta = .196$; $p < .10$); [Cognitive Risk Perception for Competition] ($\beta = -0.163$; $p < .10$).

Model [1– CC] reported a model fit of $R^2 = 25\%$. Model 2 introduced the control variables of [Wealth], [Industry] and [Gender]. The first two control variables had a significant effect on the prediction model, resulting in a better model fit than Model 1 ($R^2 = 39\%$). Thus, Model 2 is better than Model 1 at explaining the probability of nascent entrepreneurs being successful in founding new ventures. According to the results of Models 1 and 2, cognitive capital had a higher model fit than those reported in other linear models for [HC] and [SC]; hence, nascent entrepreneurs with

higher cognitive capital are more likely to succeed than their counterparts. Accordingly, findings presented in Model 1-2-CC confirm **H3:** Cognitive capital is a significant predictor of the outcome of the new venture creation process.

Figure 6.3: CC Linear Model – Empirical Results

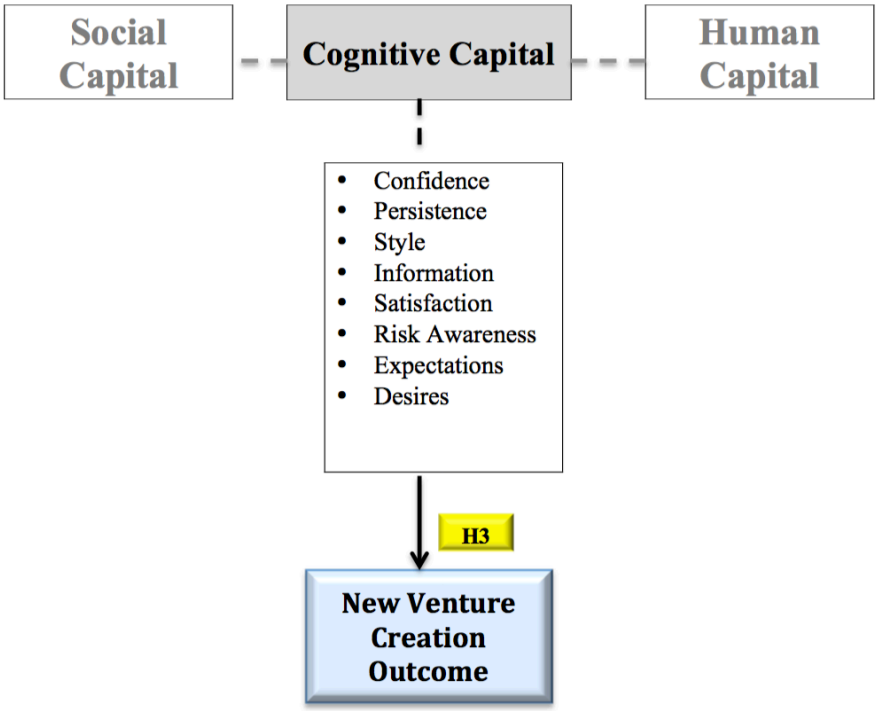


Table 6.1: "Start-up Capital's" Main Effects in the Linear Modelling – Empirical Results

Main Effects	
○ [Diversity of General Training]	+
○ Technical Experience	+
○ Startup- Ownership Experience	-
○ Exp. In Parents Startups	+
○ Social Role Model	+
○ Weak Ties- Professional Mentoring	-
○ Social Skills	+
○ Strong Ties - Social Support by Non Owners & Non Team Members	+
○ Cognitive Persistence	+
○ Cognitive Confidence	+
○ Cognitive Style	-
○ Cognitive Desire by Family (Inheritance)	-
○ Cognitive Desire by Power	+
○ Cognitive Desire by learning	-
○ Cognitive Desire By income	+
○ Cognitive Expectation by Sales	+
○ Cognitive Expectation by Growth	+
○ Cognitive Desire By (Family Tradition)	+
○ Cognitive Information	-
○ Cognitive Job Satisfaction	+
○ Cognitive Risk Awarness for competition	-

The discussion presented in the preceding sections answer the empirical question – **[What are the influential nascent capital's attributes that act as significant factors in predicting the successful founding of new ventures]**. The analysis of the three start-up capital's attributes, namely, [HC], [SC] and [CC] were all confirmed to have significant main effects on the outcome of the new venture creation process but with inconclusive and varying degrees of influence. Human and social capital main effects had comparable and limited predictability on the outcome of new venture creation, accounting for nearly (8%) of the variation in the data. In the case of the cognitive capital model, its main effect had the highest power of predictability (25%) and retained the highest number of predictors compared to other start-up capital models. The strong predictive power of the cognitive dimension in the context of new venture creation also appears to be attributed to its moderating effect, which will be discussed in the later sections.

The aforementioned discussion for the main effects of start-up capital's attributes on the success in launching new ventures has laid the groundwork for discussing their combined effects in the next section.

6.3 Integrative Modelling (I) – The Interaction Between "Start-up Capital" and Process Dynamics and Its Impact on New Venture Creation – H4

6.3.1 Human Capital - Process Dynamics Interaction and Its Impact on New Venture Creation Process Outcome – [H4a - Model 3-7]

Models 3-7 for [HC**]** as presented in Table (6.3), covered the moderating effect of process dynamics on the relationship between human capital's attributes and the new venture creation outcome. The interaction terms that model the relationship between process dynamics and the [HC] model led to a substantial improvement in the overall [HC] model's predictability, reporting a Nagelkerke R^2 of 40%. Models 3-7 suggest a substantially better fit (R^2 = 27-40%) than the linear models (Models 1 and 2, where R^2 = 7%-27%). The highest fit was observed in Models 5, 6 and 7, dominated by [HC] specific (practical) knowledge dimension.

Models 3-7 are defined in the following equation:

$$Yi\ (outcome) = b_0 + b_1\ HC_{1i} + b_2\ PD_{1i} + b_3\ (HC \times PD)$$ **(Models 3-7)**

The moderating effects upon the relationship between [HC] and the outcome of new venture creation process were produced by the process dynamics that relate to [Opportunity Learning Dynamics] and [Gestation Dynamics-Duration].

6.3.1.1 Human Capital Interaction with Opportunity Learning Dynamics [PDL]

The findings in Table 6.3, Models 3-4, show the interaction between human capital variables (Linear Model) and the dynamics of opportunity learning (Moderator). The model fit was reported as (R^2 = 27%) after incorporating the interaction terms for [HC x PD]. The findings indicated that only two variables in the human capital appear to interact with opportunity learning dynamics **[PDL]** in the pre-startup period; these are [Diversity of General knowledge - **DG**] and [Experience in Parents' Start-ups - **EPS**].

The following equations were used:

$Yi\ (outcome) = b_0 + b_1\ DG_{1i} + b_2\ PDL_{2i} + b_3\ (DG \times PDL)$ **(Model 3)**

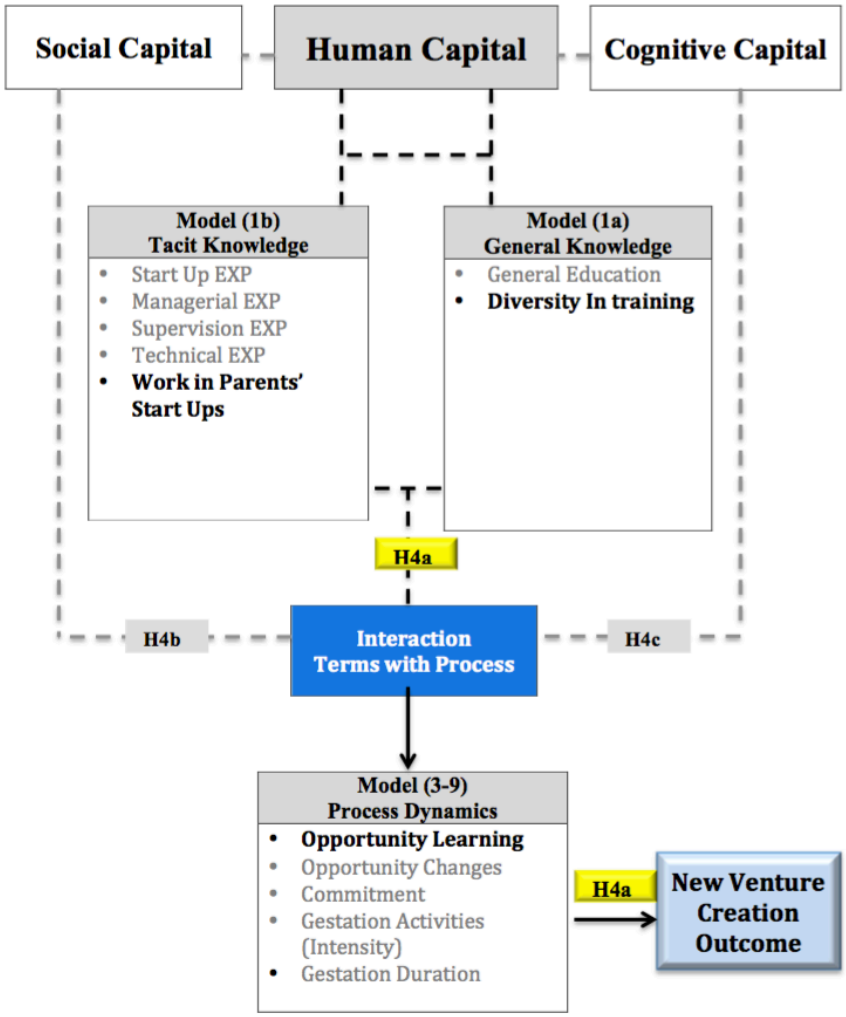
$Yi\ (outcome) = b_0 + b_1\ EPS_{1i} + b_2\ PDL_{2i} + b_3\ (EPS \times PDL)$ (**Model 4)**

The findings revealed a significant negative interaction between [Diversity of General Knowledge] and [Opportunity Learning],(β =-.230; $p < .05$), counteracting the positive main effect of the former variable. Conversely, they showed a significant positive interaction between [Experience in Parents' Start-ups] and [Opportunity Learning], (β =. 349; $p < .10$), retaining the positive main effect for the former variable. These findings thus show that human capital interaction with learning dynamics is associated with varying effects, which reflect the moderation influence generated by learning dynamics at the general and practical levels of human based knowledge.

The negative interaction between [HC-Diversity in Training] and [Learning Process Dynamics] confirmed that general diversity might add value in its own stand, but under the interaction cycle appear to fail in facilitating the efficient conversion of knowledge and skills into an economical value that manifests itself in the form of successful founding of new ventures. In more specific terms, the diversity inherent in general knowledge appears irrelevant as it fails to facilitate receptivity to learning (Sine et al., 2005, Taylor and Greve, 2006) and in turn fails to leverages nascent entrepreneurs' adaptability as well as their capacity to integrate business concepts and cues as they strive to make optimum decisions (Frese et al., 2007). This finding indicates that when nascent entrepreneurs' learning experience during the founding process is not in conformity with their general prior knowledge, then this acts as a limiting factor for entrepreneurial learning, making

nascent entrepreneurs less receptive to learning. On the other hand, the reported (-) interaction term between [Diversity of General Knowledge] and [Opportunity Learning] can also acts as an alerting signal, informing nascent entrepreneurs about the venturing circumstances and making them aware of the viability of an opportunity to be exploited, and whether or not the context of the business venturing matches their knowledge base. The lack of conformity in such case enhances their visibility of the business reality at the early stage of business founding, leading to early abandon for losing nascent ventures, if such reality conflict with their anticipations and/or prior knowledge.

Figure 6.4: [HC] and the Interaction with [Learning Process Dynamics]



Referring to the findings relating to the interaction between human and cognitive capitals, more insights can be provided that inform our understanding about the lack of conformity between [Diversity of General Knowledge] and [Opportunity Learning]) from cognitive perspective. For example, the [CC x HC] interaction showed that non-economic indicators drive nascent entrepreneurs' desire profile, and hence any mismatch with this profile could acts as a limiting

factor for learning and may result in a decision to abandon the venturing efforts at the nascent stage. In more specific terms, the significant (-) interaction between the cognitive desire that relate to [Maintaining Family Tradition] and the [Diversity of General Knowledge] support our argument that if nascent entrepreneurs' prior knowledge encountered early signs of mismatch with their cognitive profile driven in this case by their social tradition**,** then their knowledge-based expectations are affected and they may abandon the process even if economic success indicators appear to be attractive. Another example was the reported (+) significant interaction between [Diversity of General Knowledge] and [Cognitive Persistence] and this provides another layer of confirmation of the notion that nascent entrepreneurs look for conformity signals between prior general knowledge and cognitive profile as they engage in nascent entrepreneurial endeavours and this, indirectly, influences their receptivity to learning and perseverance into their founding efforts. Nascent entrepreneurs appear to adopt narrower mental frames, particularly when they look for conformity signals between prior [General Knowledge] and [Cognitive Knowledge] driven by non-economic aspects (desires). The disconformity can also arise when general knowledge over time becomes less important (diminishing effect), and learning becomes more dependent on the refined, specific and relevant knowledge that serves to reach the milestones of business founding.

Turning to the interaction between [HC - Practical Knowledge] and [Opportunity Learning], the results in this respect, confirmed the significant relationship that relates the specificity of human capital to process dynamics and new venture success. The findings confirmed the insights from the Resource Based Theory, acknowledging the importance of specific experiences and competencies in aiding nascent entrepreneurs to delineate and combine resources to attain productive ability that maximises their propensity of success (Barney et al., 2001; Davidsson and Honig, 2003; Parker, 2006). This confirms the notion that the entrepreneurial competency in part emerges when entreprenurs operationalise specific experiences as they interact with the process of learning. This active interaction appears to leverage their enterprising capacity (Politis, 2005; 2008) as they adapt to new situations.

Indeed, the nature of interactions between specific [HC] and learning allows nascent entrepreneurs to get acquainted with the entrepreneurship ecosystem, challenge conventional wisdom and stimulate their sense making beyond pre-set boundaries, and in turn, this allows them to adopt new methods of thinking, apply unique approaches to problem solving, and develop a dynamic capacity to respond efficiently to new venture creation's emerging trends. Therefore, combining practical knowledge with the dynamics of learning during the gestation period of entrepreneurship is

imperative as it allows the dynamic capacity of enterprising individuals to be exerted by experimentation and iteration that extend thinking horizons and bridge gaps between knowledge and practice. As Loasby (2007, p.1104) observed, '[t]hough entrepreneurship is purposeful, it is an evolutionary process of trial and error; and error is more likely than success.' Clearly, the variation in nascent entrepreneurs' capacity to combine existing expereince with learning is a crucial factor that distinguishes their propensity to achieve success in their business launching process.

In more specific terms, the significant relationship between [HC - Practical Knowledge] and [Opportunity Learning] was driven by practical aspects that relate to prior experiences in parent's start-ups, ($\beta = .349$; $p < .10$). This finding draws on social learning theory (Bandura, 1986) that stresses the influence of gaining practical experience in a social context that seems to reinforce the entrepreneurial spirit and introduces nascent entrepreneurs to business conduct, and established models that shape their entrepreneurial mindset, and learning by action (Bandura, 1986). Indeed, the exposure to entrepreneurial experience within a social context gives nascent entrepreneurs an advantage that enables them to access proven tacit knowledge and credible skills for organising new ventures (Kim et al., 2006). This agrees with Jennings and McDougald's (2007) argument that 'models of entrepreneurial processes and outcomes are to a certain extent, incomplete without attention to work– family considerations'.

Learning dynamics in a social context appear to promote nascent entrepreneurs' ability to learn and interact with the business-venturing situation and in turn maximises their capacity to organise and found a new start-up. It is a powerful combination that furnishes nascent entrepreneurs with hands on entrepreneurship experience that enables them to acquire necessary cognitions, routines and skills that can be applied in a variety of entrepreneurial tasks and conditions. This combination also allows them to extend their social base and thus access knowledge and resources that aid them in improving their working habits, routines and mental heuristics (Audretsch et al., 2011), acting as a frame of reference that enables nascent entrepreneurs to interact effectively with the process, learn and shape the logic of their actions in a way that maximises entrepreneurs' probability of success in their founding efforts. To enact entrepreneurial opportunities, nascent entrepreneurs should first find the best fit between their real time learning experience and the knowledge accessed by their business-social orientated context.

6.3.1.2 Human Capital Interaction with Gestation Dynamics - Duration [PDGD]

This section describes the interaction effect between the rate of gestation (duration) and [HC] model - [Technical Experience (**TE**)], [Start-up Experience (**SE**)], [Managerial Experience (**ME**)]. The following equations were used:

- Yi (outcome) = $b_0 + b_1 TE_{1i} + b_2$ PD $GD_{2i} + b_3$ (TE x PDGD) **(Model 5)**
- Yi (outcome) = $b_0 + b_1$ $SE_{1i} + b_2$ PD $GD_{2i} + b_3$ (SE x PDGD) **(Model 6)**
- Yi (outcome) = $b_0 + b_1$ $ME_{1i} + b_2$ PD $GD_{2i} + b_3$ (ME x PDGD) **(Model 7)**

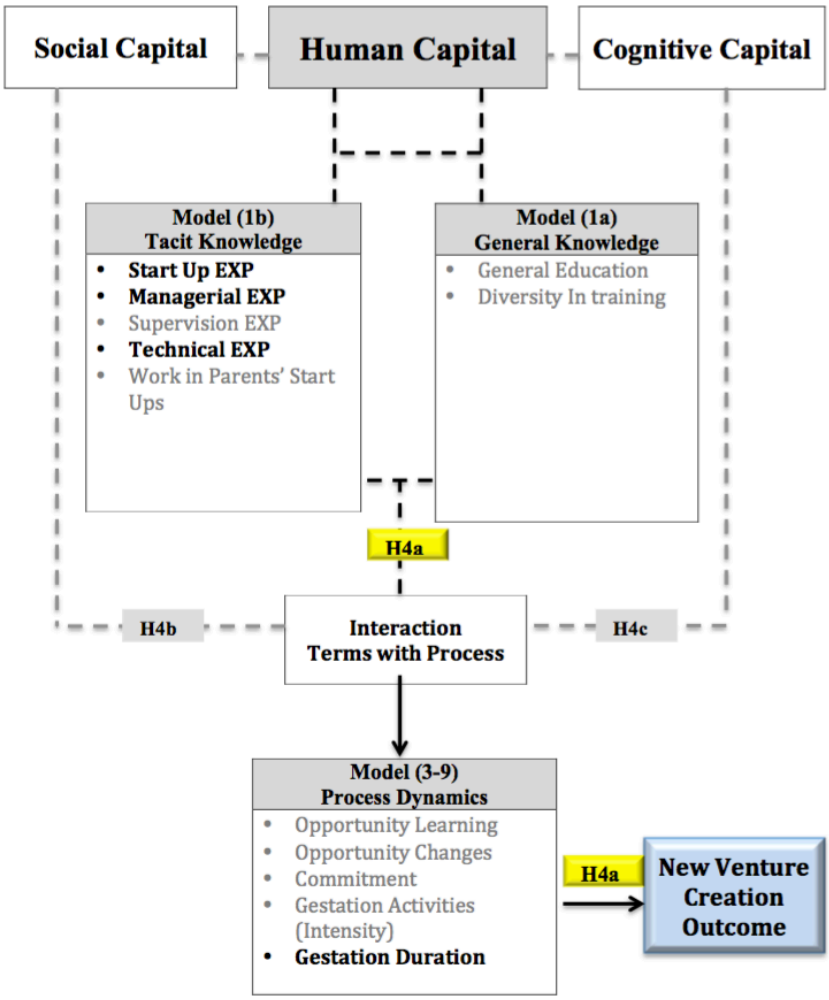
Models 5-7-[HC] introduce the interaction terms that capture the interplay between the human capital model (Linear Model) and the new venture process dynamics (Moderators). Models 5-7 reported a model fit (R^2 = 40%) after incorporating the above interaction terms. The moderation effect of the gestation dynamics; appeared as a result of their interactions with practical (specific) knowledge predictors of human capital model that relate to: [Technical /Industry Experience], [Start-up Experience] and [Managerial Experience].

As shown in Table (6.3), the interaction between human capital and gestation dynamics (duration/rate of action) is associated with mixed positive and negative effects. The practical knowledge dominates the [HC-PD] interaction cycle, and therefore it appears to be more significant predictor of the outcome for new venture creation process under the interaction with process dynamics. This can be attributed to the pragmatic aspects and embedded dynamics encountered in practical experiences. These aspects maximise nascent entrepreneurs' exposure to many aspects of business, enabling them to be flexible and navigate the process efficiently in a way that accelerates entrepreneurs' ability to conclude the process of founding a new venture. Having a stock of practical experiences before engaging in the business founding process shortens the gestation time and reduces the effort as nascent entrepreneurs apply practical skills to the founding process. Obviously, as prior practical knowledge comes in direct contact with the process dynamics, different levels of human capital's attributes evolve and change in a way that facilitates or impedes the gestation efforts and the receptivity to learning.

Observing the significance and direction of interaction enables us to offer empirical insights that help to explain the surprising results from the human capital linear model. Interestingly, the interaction between **[Start-Up Experience] [Management Experience]** and process gestation dynamics **[Gestation Duration/Rate of Action]**, (β =. 017, $p < .01$; β = .003, $p < .05$),reversed the (-) significance reported in the HC linear model for these experiences; while the interaction

between **[Technical/Industry Experience]** and **[Gestation Duration/Rate of Action], (**β = -.015, $p < .05$) , counteracted the (+) main effect reported in the HC linear model for that experience. The findings demonstrate that practical experiences provide a rigorous grounding that leverages nascent entrepreneurs' ability to assess the prospect and viability of the venture when combined with the gestation aspects (actions).

Figure 6.5: [HC- Specific] & the Interaction with [Gestation Process Dynamics]



The successful interaction between gestation dynamics and [HC- practical Knowledge] determinants of the new venture creation process outcomes appear to facilitate nascent entrepreneurs' reach to broaden their range of expertise, networks and information, aiding them to become more able to assess the relevance of accessed resources, and more efficient in integrating this knowledge into a complementary resource context within their existing stock of knowledge; and in return more able to move the new venture creation process forward. From one perspective, this indicates that the specificity of human capital to practical experiences is beneficial in moving

the gestation process forwards, optimising the gestation duration and in turn, the optimised duration leads to the successful conclusion of new venture creation process. From another perspective, it indicates that such specific experiences are advantageous only when nascent entrepreneurs succeed in enacting and extending specific knowledge in a dynamic medium that benefits the new context of business founding. In more specific terms, the (+) interaction effect that counteracted the (-) main effects produced at the linear models of [HC-Practical knowledge] may reveal the rationality of nascent entrepreneurs that appears to be guided by active actions and informed by practical knowledge. This form of interaction enables nascent entrepreneurs to have greater perspicacity of the reality of the business-founding situation due to the alignment between practical abilities, resources and the real time knowledge acquired during the founding process. This in turn optimises the gestation time and effort (duration) leading to the conclusion of the business founding process.

As of the (-) interaction between [Technical/Industry Experience] and [Gestation Duration/Rate of Action] that counteracted its (+) main effect in the linear model, the finding in this context suggests that some forms of practical experience may have embedded limitations such that at certain level of dynamics, the relationship shifts and becomes negative, impeding the entrepreneurial capacity as entrepreneurs attempt to challenge the status quo (Cliff et al., 2006; Hmieleski et al., 2015). Among the plausible explanations for this finding is that technical/industry experience in action or as it interacts with the gestation dynamics (actions) becomes a form of knowledge, but this dynamic knowledge might not be transferable to the emerging context of the venture under creation and hence entrepreneurs may suffer from the effect of disconformity with prior experiences, leading to the (-) outcome. On the other hand, the (-) interaction effect can be beneficial as highlighted in the empirical results of Ucbaracan et al. (2008) which viewed technical knowledge in the context of entrepreneurial exploitation as a reduction factor for the risks and escalated costs, and therefore nascent entrepreneurs may choose to abandon the new venture creation attempt if the venturing situation is not in conformity with their prior technical/industrial background.

Indeed, such technical background reflects a track record of routines, procedures and strategies that aid enterprising individuals to establish a better sense of the business situations on a timely basis, and therefore they become more efficient in taking decisions/actions. Clearly, the (-) effect between [Technical/Industrial Experience] and [Gestation Rate of action/Duration] can also be viewed as a mitigation action that aids in averting false positive assessments.

Therefore, the reversal in the direction of significance for [HC] main effects under the interaction with process dynamics provides evidence that human capital in its linear form cannot provide conclusive evidence for its role as a driver of success for nascent ventures. The two complementary explanatory hypotheses, namely, the investment and endowment hypotheses could explain the limited contribution of the HC linear modelling. The study's findings in this context appear to support the investment hypothesis that was built based on the economic approach. This hypothesis was tested by a meta-analysis conducted by Unger et al. (2009) who found that direct endowment of traditional human capital, i.e. general educations, work experience, start-up experience, managerial experience etc., appears not to be a reliably indicative measure of entrepreneurial success. The findings in this section confirm the investment hypothesis that views human capital as productive outcome and not merely based on resource endowment.

Accordingly, it is not only the mere presence or relevance of knowledge/experience but also the specific quality of knowledge/experiences that is critical for the entrepreneurial success at the early stage of business development (Unger et al., 2009). The findings suggest that this quality is embedded in the dynamic resources, and that is, the outcome of human capital investment produced in the interaction process that does show significant association with new venture outcome. It also stands to reason that those nascent entrepreneurs who rely on knowledge/experience in its abstract form will continue to struggle with their future attempts, and therefore are less likely to succeed unless they understand the essence of business dynamics, reflect on their HC-knowledge as they become able to combine complementary context-specific knowledge dispersed among different resources and align themselves with the real-time learning and the emerging aspects of the business founding process.

To this end, the counteracting and enforcing effects detected between human capital and process dynamic models confirmed the significant moderating effect of the process dynamics on the relationship between human capital and new venture creation outcome, and emphasised their importance in transmitting human capital main effects. The preceding findings thus confirm the existence of the moderating effect for the hypothesis H4a: Nascent entrepreneurial process dynamics moderate the relationship between human capital and the outcome of the new venture creation process.

Table 6.2: Summary for [HC] Main Effects and Its Intreactions with [PD]

Main Effects [HC]		Interaction Effects [PD X HC]	
PD: [Gestation Rate of Action]			
HC: [Technical Experience]	+	[Technical Experience] x [Gestation Rate of Action]	-
HC: [Start-up Experience]	-	[Startup Experience] x [Gestation Rate of Action]	+
HC: [Managerial Experience]	-	[Managerial Experience] x [Gestation Rate of Action]	+
PD: [Opportunity Learning]			
HC: [Diverse General Knowledge)]	+	[Diverse General Knowledge] x [Opportunity Learning]	-
HC: [Prior Experience in Parents' Business]	+	[Prior Experience in Parents' Business] x [Opportunity Learning]	+

Table 6.3: Logit Estimates for [HC] Model - Main Effect and Its Interaction with [PD]

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Educational Attainment	.107 [.086] 1.113	.050 [.107] 1.051	.084 [.109] 1.088	.060 [.109] 1.062	.174 [.120] 1.190	.185 [.120] 1.203	.151 [.121] 1.163
Diversity of General Training	.215*** [.081] 1.240	.179* [.100] 1.196	1.153* [.591] 3.168	.132 [.104] 1.141	.042 [.112] 1.043	.063 [.112] 1.065	.037 [.112] 1.037
Technical Experience	.493*** [.149] 1.637	.406** [.181] 1.500	.415** [.183] 1.514	.365** [.184] 1.440	1.259* [.687] 3.523	.310 [.212] 1.363	.339 [.209] 1.404
Start-up Ownership Experience	-.306* [.171] .736	-.307 [.210] .735	-.301 [.214] .740	-.328 [.214] .721	-.546** [.239] .579	-1.737* [.898] .176	-.529** [.240] .589
Experience in Parents' Start-ups	.261** [.118] 1.298	.147 [.146] 1.159	.182 .149 1.199	-1.164 [.923] .312	.033 [.165] 1.034	.111 [.167] 1.117	.057 [.165] 1.058
Management Experience	-.138 [.062] .871	-.179** [.084] .836	-.192** [.086] .826	-.184** [.085]	-.186* [.096] .816	-.161* [.095] .851	-.112 [.357] .894
Process Variables							
Supervision Experience	-.089 [.062] .915	-.081 [.076] .923	-.061 [.077] .941	-.073 [.078] .930	-.097 [.086] .908	-.105 [.086] .900	-.091 [.085] .913
Opportunity Change			-.109 [.565] .897	-.171 [.306] .843			
Opportunity Learning			.363** [.157] 1.438	-.327 [.255] .721			

Table 6.3: Logit Estimates for [HC] Model - Main Effect and Its Interaction with [PD]							
Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**
Gestation Duration					.006 [.009] 1.006	-.022*** [.006] .978	-.019*** [005] .981
Gestation Activities					.335*** [.099] 1.398	.272*** [.054] 1.313	.327*** [.072] 1.386
Opportunity Learning			.363** [.157] 1.438	-.327 [.255] .721			
Gestation Duration					.006 [.009] 1.006	-.022*** [.006] .978	-.019*** [005] .981
Gestation Activities					.335*** [.099] 1.398	.272*** [.054] 1.313	.327*** [.072] 1.386
Interaction Terms [HC x PD]							
Diversity of General Training x Opportunity Learning			-.230** [.112] .794				
Exp. in Parents' Start-ups x Opportunity Learning				.349* .180 1.418			
Technical Experience x Gestation Duration					-.015** [.007] .985		
Start-up Experience x Gestation Duration						.017*** [.006] 1.018	
Managerial Experience x Gestation Duration							.003** [.001] 1.003
Controls							
Wealth		***	***				
Industry (Dummy Coded)		*	**				
Team Members		**	**	*	**	**	**
Constant	-1.92 [.349]		-6.09 [1.28]	-3.34** [1.65]	-6.01*** [1.45]	-4.11*** [1.177]	-4.56*** [1.24]
No. of Nascent Entpr.	816	816	816	816	816	816	816
Nagelkerke R Square	**7%**	**25%**	**27%**	**27%**	**39%**	**40%**	**39%**

Table 6.3: Cont. Logit Estimates for [HC] Model - Main Effect and Its Interaction with [PD]-
Model 1 - HC linear model with no controls;
Model 2 - HC linear model with controls;
Model 3-7 - Interaction effects between human capital model and process dynamics model [HC x PD];
- The numbers in table are presented as follows: coefficients; standard errors in parentheses; odd ratios.

[1] B the estimated logit coefficient
[2] S.E. the standard error of the coefficient
[3] Exp (B) "odds ratio" of the individual coefficient. Odds ratio is a nonlinear transformation of the logit coefficient, so the confidence interval is asymmetric
[4] R2 statistic. It is the proportion of the variance in the dependent variable that is explained by the variance in the independent variables.

- *p < .10 (two-tailed); ** p < .05 (two-tailed); *** p < .01 (two-tailed)
- Industry dummies were included to control for unobservable industry-specific effects.

6.3.2 Social Capital - Process Dynamics Interaction and Its Impact on New Venture Creation Process Outcome – [H4b – Model 3-4]

Models 3-4 [SC] introduce the interaction terms that capture the interplay between the social capital model (Linear Model) and the new venture process dynamics (Moderators). The effects of interaction terms [SC x PD] were calculated, in addition to the main effects of [SC], as presented in Table (6.5); they were defined as follows:

$Yi\ (outcome) = b_0 + b_1\ SC_{1i} + b_2\ PD_{2i} + b_3\ (SC \times PD)$ **(Models 3-4)**

The reported interaction terms [SC x PD] generated a slight improvement of 1% in the model fit reported in the linear model (R^2 = 29%). Interaction between process dynamics and social capital was found to be significant in the case of:

- **[Opportunity Learning x Strong Ties- Social Support by Non-Owners]**, which counteracted the positive main effect reported in the [SC] linear model; (β = -.584; p < .05);

- **[Commitment x Social Skills],** which emphasised the positive main effect reported in the [SC] linear model; (β = .470; p < .05).

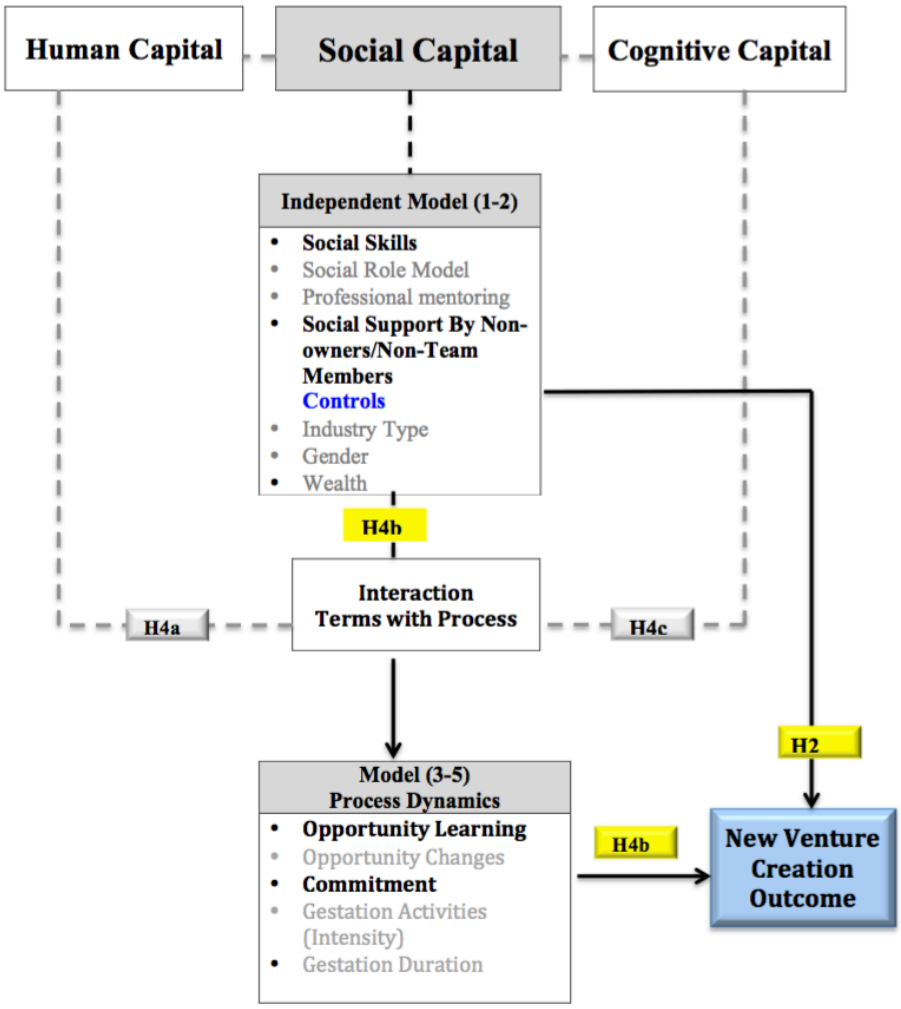
The findings confirm that social capital is multi-faceted, whose effect must be studied through a layered or integrative approach, where social capital appears to manifest itself in dynamic nascent ventures and can set in motion a self- energising process that can lead to substantial differences in the way nascent entrepreneurs perceive their reality and interact with others (Casson and Della

Giusta, 2007; De Carlos et al. 2009). Stated differently, the significance of the [SC x PD] interaction lies in the recognition of social capital as a multi-faceted phenomenon that appears to be realised following the integrative-dynamic approach that reveals how nascent entrepreneurial outcomes emerges out of social-process context that includes a variety of social exchanges, networking activities, skills and negotiations that allow entrepreneurs to form informed judgment in alignment with their dynamic frame of thinking. This concurs with Liao and Welsch's (2005) argument that what matters is not the social capital but the pattern of associations. Social capital in the dynamic context appears to addresses the interaction between individuals' openness to the external environment and social change on the one hand, and the attainment of balance with other start-up capital's attributes on the other hand (Leadbeater, 1999). The findings here serve the social perspective that appears to be part of the new movement in entrepreneurship research where the entrepreneurial process is presented as a social image that involves heterogeneous interactions, actions and relations between the dynamic processes and actors performing the social acts in the social-business landscape (Steyaert and Hjorth, 2003; 2007). This agrees with Nielsen and Lassen's (2012, p. 49) argument that an 'entrepreneurial individual can only be fully understood in relation to the social and institutional context, and the entrepreneurial process is seen as unfolding from everyday interactive change processes of individual enactment and social/institutional context influence. These interactions are unpredictable by nature and open up for every entrepreneurial process to be constructed as an individual story'.

[SC] interaction with business dynamics may be accompanied by trajectories, status quo or even dynamics that define its unique impact as the process of creating a new start-up unfolds. This reveals how social capital main effects evolve, creating a unique impact or alternatively loses openness and so becomes dysfunctional. Therefore, the finding of the present study contends with the growing agreement among management and sociology scholars that emphasises the interaction effect of [SC] as opposed to its linear effect, for example as argued by Schuller (2000, p. 12):

> *"One of the most difficult challenges posed by the idea of social capital may be that it does not fit the linear model, at least at some levels. It is hard enough to trace the lines of causality between human capital and socio-economic performance. At this stage, it is unlikely that policy-makers will be able to identify returns to social capital in any direct fashion, so the investment-return model is only partially applicable. Secondly, social capital deals with complex and diffuse areas. Values and relationships are not easily measurable, nor are changes in them easily benchmarked and monitored. But in a 'risk society' we need to develop new approaches to the management of information, and social capital requires us to think in more flexible and multi-dimensional ways. The challenge is to match these with suitable standards of rigor and appropriate empirical evidence."*

Figure 6.6: [SC] and [Process Dynamics] Interaction – Emprical Results



The moderating effects upon the relationship between [SC] and the outcome of new venture creation process were produced by the process dynamics that relate to [Opportunity Learning Dynamics] and [Commitment Dynamics], as discussed below.

6.3.2.1 Social Capital Ties and the Interaction with Learning Dynamics

The negative effect was evident in the interaction between [**Strong Ties- Social Support by Non-Owners - Non Start-up Team Members]** and **[Learning Dynamics],** (β = -.584; $p < .05$) that counteracted the (+) main effect reported in the [SC] linear modelling for strong social ties. This suggests that strong attachment to strong ties and social role models may make nascent entrepreneurs vulnerable to the effect of familiarity (common mode of thinking) and lack of diversity, constraining the receptivity to learning. This makes the evidence of strong ties' main effect suggestive, rather than conclusive determinant of entrepreneurial success. According to

social learning theory (Bandura, 1986), individuals become inclined to social support to aid them in learning and acquiring new competencies. However, the (-) significance under the dynamic medium surprisingly indicates that learning experience in the social context may associates with unproductive outcomes that impede nascent entrepreneurs' receptivity to learning. This suggests possible limitations that could in part reveal the vague role of strong ties within cohesive networks, and in return interrogates prior notions about the contribution of close social ties with regard to the success of launching a new business.

In this line of thinking and drawing on data from 461 alumni from eight German universities, Chlosta et al. (2012) were among the first researchers to attempt to measure empirically the interaction between entrepreneurs' openness to learning and their environmental stimuli (social business experience). Chlosta et al. (2012) extended the earlier empirical efforts of Davidsson and Honig (2003) who rigorously focused on the direct effects of the social experiences on Nascent Entrepreneurship by exploring the moderation effect of learning on entrepreneurship selection decisions. Later, the empirical studies extended the scope of analysis and embarked on exploring the association between entrepreneurs' openness to learning beyond the social status quo and their decision to become entrepreneurs (Schmitt- Rodermund 2004; Zhao and Seibert 2006; Chlosta et al., 2012). These studies, on the contrary, concluded that framing entrepreneurs' thoughts and decisions exclusively around social experiences exposes them to the risk of adopting narrower decision frames, which can potentially make them less receptive to new ideas, new patterns of thinking, and less responsive to business dynamics (Singh and DeNoble, 2003).

Clearly, the functional homogeneity embedded in social networks that supply new ventures under creation with information, advice and emotional support may also introduce detrimental effects on nascent ventures in terms of communication issues, knowledge disparity, status quo, lack of relevance, and potential conflicts between business reality and prior knowledge. The findings of the present study also appear to be consistent with Hmieleski et al.'s (2015, p. 305) empirical findings indicating that'[s]trong ties could prove unproductive if founding [attempts] are pulled away from calculated decision-making and towards trying to satisfy the potentially wide range of preferences shared with them by their many friends and family members with whom they confer for business guidance'. This in part agrees with the notion that although families that have social entrepreneurship heritage (business ownership) are viewed as a source of capital that affects the course of entrepreneurial pursuit (Dyer, 1992), the tangible advantages are unexpectedly equivocal (Santarelli and Tran, 2013).

Apparently, the (-) interaction effect is an interrogating area that can be explained from different perspectives as discussed above. However, the central argument here that one of the key features that differentiates successful and failed nascent entrepreneurs is the social ability to tap into learning processes (Politis, 2005). Social information processing theory in this context posits that knowledge creation depends on the individuals' capacity to combine and exchange information. The complexity of new venture creation requires active engagement in knowledge sharing (dynamic learning) driven by social context at an optimised level that filters out the biases, emotional instabilities and conflicting signals. Accordingly, social knowledge is deemed necessary to fostering the learning process in a way that aids nascent entrepreneurs in gaining relevant knowledge that helps them to cope up with the dynamics of the founding process. However, the scope of social support provided by non-owners/non-team members seemingly could be beneficial to accessing resources and information. But when it comes to the actual mobilisation of these attributes, social ties appear to have limitations that hinder the successful integration of social knowledge and the exploitation context.

Moreover, the sociology literature posits that the heterogeneity of social contacts carries different characteristics, perspectives and innovations that can combine effectively with their existing stock of knowledge. This perspective concurs with the functional theory that emphasises the complementary and diversity of social support as a gateway that facilitates success (Rued et al., 2003) and learning. However, nascent entrepreneurs in the present study appear to be socially influenced by the 'homophily' or 'similarity attraction' (Golub and Jackson, 2012), showing an inclination to social actors who possess similar traits and have similar values and social norms. In the literature, social homophily versus heterogeneity is discussed with compelling arguments and mixed empirical evidence that ignore connections with entrepreneurial learning.

The finding of the present study suggests that nascent entrepreneurs who rely on [Social Support by strong ties] are prone to the effect of familiarity generated within close social networks, where such effects could immerse nascent entrepreneurs in a social system that draws on the same attitudes, beliefs, styles, interpretative frameworks and mental models of their surroundings, and this may lead nascent entrepreneur to exaggerate their capacities and become unable to assess reality objectively. Indeed, dependence on shared and collective meanings within the social network sphere could make individuals receptive to cognitive biases making them feel they have an undue impact on the reality of the founding process (De Carolis et al., 2009), and in turn this leads to biased interpretations of the business reality that hinders their interaction with the

learning process. Indeed, familiarity tends to make them rely on mutual interpretive frameworks that restrict their frame of thinking (Nahapiet and Ghoshal, 1998) and reduces functional diversity (Ruef et al., 2003). This seems to accord with Uzzi's (1997) and Watson's (2007) argument stating that embedded social relations can associate with instrumental benefits, yet at a certain point these benefits could turn into a limiting factor if individuals rely excessively on familiar social transactions that make them susceptible to develop locked-in relationships (Bhagavatula et al., 2010) resulting in detrimental outcomes.

One of the cognitive biases linked with the familiarity effect could be associated with nascent entrepreneurs' expectations formed as they interact with social ties driven by strong relations. Expectations are associated with the normative behaviour based on reciprocity and trust that foster social exchanges (Adler and Kwon, 2002), and thereby, expectations are formed as nascent entrepreneurs anticipate value supported by the norms shared in the close social networks. The reported (+) effect of expectations in the present study can be a sign of inflated thinking that drives other cognitive biases, one of which is overconfidence, and escalated commitment to one's networks' values, experiences and obligations. This may lead to emotional tension that hampers nascent entrepreneurs' learning especially when reality conflicts with their reference social values and obligations.

Another cognitive bias that correlates with the social status quo and its effect on learning experience might be the over-reliance (emotional attachment) on **Strong Ties** support. According to Coleman (1988), cohesive strong social ties foster cooperative actions, which conversely, can turn into a limiting factor for motivation and innovation, and this, in turn, restricts learning during the entrepreneurial process (Santarelli and Tran, 2013). Therefore, the present study findings emphasise the importance of diverse and balanced social relations that enable receptivity to entrepreneurial learning and in turn success in founding new ventures.

An additional view suggests that human capital is an imperative element in the mobilisation process of social capital, and any lack of synergy between [HC-SC] (as reported in later section) may impede their ability to mobilise social learning (Bosma et al., 2012). Also, an alternative view proposes that reliance on social support provided by strong ties could manifest at the expense of the expertise and interests of business founders or start-up team members, who are viewed in the literature as an important determinant of entrepreneurship (see Aldrich and Cliff 2003; Gartner et al., 2004; Lee et al., 2011), and this suggests possible conflicts that have the potential to hinder the learning experience, leading to unfavourable outcomes. Apparently,

learning in social context is limited and exposed to a broad range of biases. However, the findings suggest that learning tend to become beneficial in social context if combined with practical experiences (see the (+) significant interaction between [learning] and [prior experience in parent's start-ups] reported in previous section).

6.3.2.2 Social Skills and the Interaction with Commitment Dynamics

The emerging context of new venture creation process places social skills in varying situations that need careful management. Accordingly, the finding of the present study confirms that the acquisition, deployment and effectiveness of social skills rely solely on the patterns of interactions and contexts within which these skills are expected to operate. The positive effect was evident in the interaction between [Social Skills] and [Commitment Dynamics], ($\beta = .470$; $p < .05$) that enforced the social skills' (+) main effect reported in the [SC] linear modelling. This positive interaction indicates that social skills are taken as a competency that allows nascent entrepreneurs to reveal ambiguities and explore rich meanings in complementary contexts, maximising their ability to successfully found a new venture. This offers support for the empirical work that posits social skills as a key factor of success in different contexts that favors positive outcomes (Riggio and Throckmorton, 1988; Wayne and Ferris, 1990). For example, Baron and Markman (2003) emphasised the importance of social competency in deriving success by stating its significance in establishing cooperative relations, and enhancing the chances of accessing opportunity-related information. This indicates that social competency has embedded practical aspects that are associated with productive efficiency that can shape the social nature of the founding process, bridge gaps between social actors and thus maximise the probability of success (Baron and Tang, 2008).

The interaction between social competency and dynamic commitment in the context of this study appears to stimulate the accumulation of some forms of capitals in a way that maintains the founding momentum (Baron and Markman, 1999a) toward successful outcomes. In slightly different words, the successful creation of new ventures through social skills of nascent entrepreneurs is enhanced by the increase in the commitment level. A possible explanation for this result is that the nascent entrepreneurs' willingness to engage in the founding process (commitment) can be influenced by the nature of psychological skills. Drawing on the social informational theory (Salancik and Pfeffer, 1978) and attraction theory (Byrne, 1971), the psychological state embedded in process commitment - social competency relationship captures the essence of nascent entrepreneurs' ability. Particularly how the dynamic social competency can

aids them in acquiring relations, accessing information and social support, developing mental states and acting in a business context through the dissemination of social competencies (Spence et al., 1999; Baron and Markman, 2000). This suggests that the most accepted view on process commitment refers to the psychological state that characterizes the relationship between the nascent venture and the social competency. In this sense, commitment is viewed as a dynamic medium that leads nascent entrepreneurs to engage their social competence and its inherent practical aspects in managing the formation of new ventures through the acceptance and use of social skills. This relationship governs nascent entrepreneurs' venturing behaviours and enforces common meanings, beliefs and attitudes that ultimately dictates the outcomes attained in the founding process of new venture.

Clearly, committed nascent entrepreneurs who are informed by social competency have better ways to manage tasks, and resolve problems and this in turn provide them with constructive guidelines that aid them in forming new ventures. In the end, Nascent Entrepreneurship is not all about the quality of the social competency, but more importantly the commitment of nascent entrepreneurs, whose active involvement and contribution are pivotal to the process of founding new ventures. Subsequently, the findings of this study confirmed that the attained level of commitment moderates the relationship between the social competency and the new venture creation outcome.

To this end, the counteracting and enforcing effects detected between [SC] and [PD] asserted the significant moderating effect of the process dynamics, and therefore, it became evident that social capital in its linear form cannot provide conclusive evidence for its role as a driver of success for nascent ventures. The findings emphasized the process dynamics importance in transmitting social capital main effects. The preceding findings thus confirm the existence of the moderating effect for the hypothesis H4b: Nascent entrepreneurial process dynamics moderate the relationship between social capital and the outcome of the new venture creation process.

Table 6.4: Summary for [SC] Main Effects and Its Interactions with [PD]

Main Effects [PD]; [SC]		**Interaction Effects [PD X SC]**	
PD: [learning Dynamics] SC: Social Support by Strong	+	[Social Support by Strong Ties] x [Learning Dynamics]	-
PD: [Commitment] SC: [Social Skills]	+	[Social Skills] x [Commitment]	+

Table 6.5: Logit Estimates for [SC] Model - Main Effect and Its Interaction with [PD]

Variables	Model 1	Model 2	Model 3	Model 4
Social Role Model	.231** [.098] 1.260	.219* [.121] 1.245	.211* [.124] 1.235	.238* [.122] 1.269
Weak Ties	-.816** [.446] .442	-1.406** [.591] .245	-1.257** [.586] .285	-1.414** [.584] .243
Social Skills	.219** [.089] 1.245	.203** [.109] 1.225	.172 [.111] 1.187	-.070 [.169] .933
Strong Ties	1.082*** [.211] 2.951	1.198*** [.267] 3.312	3.333*** [.989] 28.023	1.188*** [.268] 3.281
Process Variables				
Opportunity Change			-.140 [.133] .869	
Interaction Terms [SC x PD]				
Strong Ties x Opportunity learning			-.584** [.255] .558	
Opportunity learning			.262** [.124] 1.299	
Social Skills x Commitment				.470** [.225] .037
Opportunity learning			.262** [.124] 1.299	
Social Skills x Commitment				.470** [.225] .037
Controls				
Wealth		***	***	***
Gender			*	
Industry		**	**	**
Team Members		**	**	**
Constant	-.043 [1.363]	-2.014 [1.987]	-2.867 [2.057]	-1.240 [1.999]
No. Of Nascent Entrepreneurs	816	816	816	816
Nagelkerke R Square	8%	28%	29%	29%

Table 6.5: Cont. Logit Estimates for [SC] Model - Main Effect and Its Interaction with [PD]

- Model 1 - SC linear model with no controls;
- Model 2 - SC linear model with controls;
- Model 3-5 Interaction effects between social capital model and process dynamics model [SC X PD];
- The numbers in table are presented as follows: coefficients; standard errors in parentheses; odd ratios.

[1] B estimated logit coefficient
[2] S.E. the standard error of the coefficient
[3] Exp (B) the "odds ratio" of the individual coefficient. Odds ratio is a nonlinear transformation of the logit coefficient, so the confidence interval is asymmetric
[4] R2 statistic. It is the proportion of the variance in the dependent variable that is explained by the variance in the independent variables.

- *p < .10 (two-tailed); ** p < .05 (two-tailed); *** p < .01 (two-tailed)
- Industry dummies were included to control for unobservable industry-specific effects.

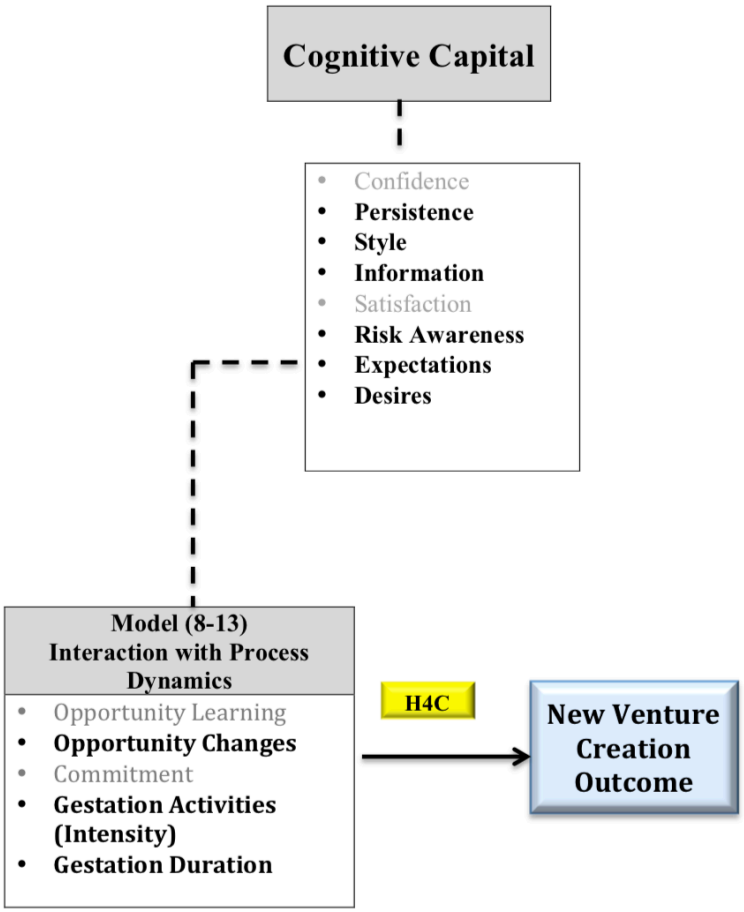
6.3.3 Cognitive Capital - Process Dynamics Interaction and Its Impact on New Venture Creation Process Outcome – [H4c – Model 3-15]

In Models 3-15 for [CC] model, interaction-terms were introduced that capture the interplay between the cognitive capital model (Linear Model) and new venture process dynamics (Moderators). The effect of interaction terms between the cognitive capital and process dynamics [CC x PD] was calculated, in addition to the main effects of [CC], so as to observe the moderating effect of [PD]. This is presented in Table (6.7), and is defined in the equation below:

$$Yi\ (outcome) = b_0 + b_1\ CC_{1i} + b_2\ PD_{2i} + b_3\ (CC \times PD)$$ **(Model 3-15 - CC)**

The reported interaction terms in Model-3-15 [CC] improved the model fit reported in Models 1 and 2 (R^2 = 41-52%). Interaction was found to be significant in the case of the following measures of cognitive capital: [Expectations], [Desires], [Persistence], [Style], [Information], [Competition Risk Awareness]. In the majority of cases, the [CC x PD] interactions produced counteracting effects upon the main effects of the [CC] linear modelling. The moderating effects were produced by the process dynamics that relate to [Gestation Rate of Action] [Gestation Intensity of Action] and [Opportunity Change].

Figure 6.7: [CC] and [Process Dynamics] Interaction - Empirical Results



6.3.3.1 Cognitive Motivational Aspects (Persistence, Expectations, Risk Awareness, Desires) and their Interaction with Process Dynamics

The empirical findings in the present study indicate that cognitive motivational aspects (i.e. desires, expectations, persistence, and risk awareness) appear to distinguish nascent entrepreneur's level of agency to persevere toward success. In this context, cognitive capital is confirmed as a common underlying competency considered important to human motivation. According to Peter et al. (2011) cognitive capital 'draws its foundation and explanatory mechanisms from theory building in work motivation' and the psychological resource theories. The wisdom associated with cognitive capital is likely to increase nascent entrepreneurs' effectiveness in performing the gestation activities. For example, the interaction with process dynamics showed that the cognitive variables that relate to expectations and persistence retained their (+) main effects ($\beta = .011$, $p < .05$; $\beta = .012$, $p < .01$) respectively, indicating that cognitions driven by motivational factors tend to withstand the changing dynamics inherent to the process of business founding, leading to active, optimum and sucessful process.

Cognitive expectations and persistence were confirmed as cognitive attributes that associate with (+) and significant effect on the outcome of new venture creation process at the linear and integrated level of modelling. Therefore, they appear to play a role in strengthening nascent entrepreneur's position in the business market, even if social or economic reality does not confirm their vision. This also provides clear indication that successful nascent entrepreneurs are confident individuals who are less concerned and influenced by the external cues and news that may not conform to their assessment. This also appears to confirm the impression that nascent entrepreneurs who are exposed to cognitive biases show a high level of persistence towards their anticipations as they preserve to their actions. Therefore, when these motivational aspects come into contact with the gestation dynamics in terms of **intensity** and **rate of action,** they allow more engagement in the course of actions and more persistence, and hence more actions to be pursued, helping entrepreneurs to achieve a better sense of the emerging circumstances by creating a meaningful context that aligns their motivations with the reality of the founding process.

Another motivational factor relates to risk awareness. Perception of risk and its impact on entrepreneurship is viewed as inconclusive and a debatable aspect of the new venture creation paradigm (Cantillon 1755; Carland et al., 1984). There is a broad spectrum of studies in the entrepreneurship literature that have tackled the subject of why enterprising individuals create new ventures despite the anticipated risk (Brockhaus, 1980; Brockhaus and Horwitz, 1986; Palich and Bagby, 1995), however few studies have explored risk's effect on business launching outcomes. The findings in the [CC] linear modellling reported nascent entrepreneurs with a high-risk awareness (aware and tolerant of the high risks of market competition) as failing nascent entrepreneurs. The result is counterintuitive. One would imagine that entrepreneurs with an affinity for and awareness of risk would be more likely to succeed in founding new ventures. However, the interaction between gestation dynamics and cognitions driven by nascent entrepreneurs' risk profile within the integrated modelling produced (+) effect ($\beta = .008$; $p < .05$) that counteracted its (-) main effect in [CC] linear modelling. This indicates that higher awareness of risks is associated with a positive effect as nascent entrepreneurs engage in the founding dynamics that offset their inflated/biased perception of risk.

In deed the (+) interaction between risk awareness and process dynamics indicates that such dynamics may act as an energising factor that encourages nascent entrepreneurs to adopt balanced approach in their founding process for new venture. Consequently, the balanced approach appears to affect the pace of progress when nascent entrepreneurs embark in new venture gestation

activities. A heightened sense of market risk in terms of actions and efforts tend to interfere with entrepreneurial reasoning, boosting their awareness of existing pitfalls and their logical assessment of related risks. This in turn seems to encourage them to focus resources, effort and time to mitigate pitfalls and therefore this cautious behaviour could make them more prone to developing emotional attachments to their decisions, and hence become more persistent, leading to the (+) outcome found in this study.

As of cognitive desires, the findings of the [CC] linear modeling indicated that nascent entrepreneurs are driven by a variety of desires, and this seemingly confirms that successful nascent entrepreneurs have a higher tendency to be influenced by normative beliefs driven by socially orientated aspirations beside monetary desires. Therefore, they appear to have a taste for their own ventures and personal preferences with expressive benefits that go beyond the risk and return considerations. However, cognitive desires (learning and income desires) appear to have a counteracting effect in the integrative modelling, (β = -.086, p < .10; β = -.006, p < .05), respectively. Through desire and action, nascent entrepreneurs should have the ability to find, apply and make use of resources, as "desires" and "actions" are of equal importance and intimately combined.

Therefore, dynamic action in terms of intensity and rate of action is fundamental part of new venture creation that suppose to bridge the gap in prior knowledge in order to fulfill the vital reflection component to entrepreneurial desire. However, in many cases, exposing entrepreneurial desires to the process of acquiring new knowledge may reveal the hidden limitations in actions and desires, leading to the (-) interaction effect observed here. According to Cassar (2006) nascent entrepreneurs appear to have higher tendency to withdraw from the business lunching process, if their expectations driven by high standards (desires) are not met. This is hypothetically what causes desires to be negatively associated with entrepreneurial outcomes.

Drawing on process theories, personal desires are defined in the context of the present study as a rational cognitive process. These aspirations embody cognitive biases that cause a desire within the entrepreneurs to take concrete steps in order to attain the target, and therefore desire need direction in order to realise this target. Process dynamics in this context act as the drive that gives entrepreneurial desires the strength and direction in a way that activates the relationship between desires and success. The findings indicate that process dynamics can only function as a motivator for attaining entrepreneurial success, if it has power over desires. The findings recognize the limitations of simply having learning /income desires; understanding that the real context of new

venture creation require more than desires, they require informed action. In other words, being able and willing to form desires is not adequate. In effect, the (-) interaction effect appears as nascent entrepreneurs face challenges in transforming desires into reality, and this may be due to a lack of the capability that was not developed through autonomous dynamic action. Apparently, the autonomy to pursue action on real entrepreneurial situations may be questioned at different levels.

Additionally, nascent entrepreneurs themselves may possess the desires, but lack the competency to challenge the assumptions of the desires and actions. The depth of actions is therefore crucial to the success in attaining entrepreneurial aspirations, where process dynamics must uncover assumptions that drive success, so that nascent entrepreneurs may transform how they desire things and accordingly alter what they do. Therefore, the (-) interaction here indicates that the quest for taking action in conjunction with desire formation is desirous and yet challenging for nascent entrepreneurs. This in part can be attributed to the inherent complexities of process dynamics and the evolving nature of human's desires that appear to be elusive and challenging in many ways. One form of challenge would be the ability to form desires and act competently in relation to real-time situation (live issues), leaves little scope for desire – learning- action approach.

Other motivational variables, specifically [Family Desires] and [Risk Awareness towards Competition] reported significant interactions with [Opportunity Change], (β =. 261, $p < .10$; β =. -.352, $p < .10$), respectively, and this reinforced the (-) main effects in [CC] linear modelling. So, while [Cognitive Information] and [Style of Thinking] appear to act as corrective factors for the content and structure of the conceptual thinking that get formed prior to the active engagement in the process of founding (refer to the findings in next section); other cognitive aspects that relate to emotional and social aspects viz. [Desires] and [Risk Perception] appear to persist, leading to the retention of the original scope of thinking that appears to be biased by static norms of thinking that lead to the (-) interaction.

This finding indicates that emotional and motivational factors embedded in social desires and risk factors can lead to escalated conceptual attachment to original thinking, which in some instances can be a hindrance to introducing changes during the new venture creation process. This may lead to escalated efforts that lack coherence with the emerging business reality, and in turn may signal the conflict between [CC] knowledge and other forms of knowledge driven by risk considerations and social preferences. This shows that cognitions driven by motivational aspects

has minimum interference with conceptual changes at dynamic level.

6.3.3.2 Cognitive Thinking (Information & Style) and the Interaction with Process Dynamics

6.3.3.2.1 [Information] x [Process Dynamics – (Gestation Dynamics; Opportunity Change)]

Scholars had drawn valuable insights into individuals and the way they react and obtain information (De Carlos et al., 2009, Baluku et al., 2016). The collection and processing of information is embedded in the cognitive thinking. The findings of this study test the 'expert information processing theory' in order to reveal how the mobilisation, storing, interpretation of information differentiates the cognitive ability of nascent entrepreneurs in action. Nascent entrepreneurs in the linear modelling were confirmed as individuals who are active in collecting and processing information prior to any decision being taken during the founding process. This theoretical approach takes into account how entrepreneurs embark on handling collected information in uncertain environments by generating and recalling mental patterns based on expert cognitive scripts that tend to be highly relevant to the context of the business being founded.

In the integrative modeling, cognitions driven by [Information] appear to incorporate biases that seem to impede nascent entrepreneur's ability to overcome the challenges associated with the process dynamics (duration), leading to (-) outcomes. The (-) interaction effect between the cognitive information and gestation dynamics in terms of rate of action (duration) (β =-.098, $p <$ .10) seems to suggest that nascent entrepreneurs who rely on this cognitive aspect encounter difficulties in dealing objectively with available information without developing biases. In other words, nascent entrepreneurs seem to engage in an informational search process to maximise their ability to access and enact opportunities (Shane, 2003), and therefore, the act of searching for information is considered an integral part of cognitive sense making that plays a role in the formation of desires, expectations and the engagement in the interpretation of mental and emotional cues (Gaglio, 1997).

However, information in its abstract form carries ambiguities, irrelevance and conflicting signals that impede success in the context of new venture creation, and therefore combining information with the [Gestation Dynamics - Duration] can also reveal the limitations and biases embedded in the cognitive processing of information. This can potentially mean that the collection and processing of information is associated with greater ambiguity and uncertainty

making them more sceptical about their venturing decisions. Indeed, this confusion could emerge in response to overwhelming information and the conflicting signals that implicate the process of founding new ventures. The lack of nascent entrepreneurs' ability to balance and integrate processed information at an optimum level appears to introduce misperceptions that bias their entrepreneurial judgement. Also, the lack of coherence between social and human capitals as discussed in the later section could also acts as another limiting factor that contributes to the misjudgements embedded in the cognitive processing of information and its interaction with process dynamics.

Similarly, referring to the reported findings in the social capital linear modeling, [Strong Ties] based relations appear to be a key source of information and therefore conformity to social signals driven by trust-based relations might lead nascent entrepreneurs to become prone to a wide range of information biased by familiarity effect. In this line of reasoning, nascent entrepreneurs appear to be influenced by strong ties, and thus a familiarity effect and coherence that characterise close networks may impede their ability to detect, interpret and integrate information, causing a lack of synchronisation with the business reality. Nascent entrepreneurs in this line of thinking may engage in social conformity behaviour in order to eliminate the severity of dissonance (neurotic behaviour) that emerges as a result of the overwhelming and/or conflicting information that they are dealing with, and thus, reducing their share of personal responsibility in their venturing decisions.

The collection and processing of information in the cognitive context therefore tends to be associated with nascent entrepreneurs who are endowed with a systematic mindset which make them inclined to systematic thinking that presumably could restrict their adaptive capacity and free thinking resulting in a degraded ability and flexibility to deal with the gestation dynamics and emerging trends linked with the new venture creation process. This at collective level has the potential to interfere with their sense making faculties and their ability to interpret information, and in consequence, this leads to delays that extend the duration of the gestation process. Apparently, the interaction with process dynamics appears to reveal the biased effects that limit the relationship between cognitive capital and the outcome of new venture creation process.

On the contrary, the interaction between [Information] and [Opportunity Change], (β =. 326; $p <$ .10) counteracted the (-) main effect of the [Information] in the [CC] linear modelling. This confirms that cognitive information can only make a positive and significant contribution in the

context of business launching if the information introduces sensible and applicable changes at a conceptual level to the businesss idea that originated prior to the engagement in the process. The dynamic changes introduced to the cognitive processing of information appear to bridge the gap with business reality in a way that maximise the likelihood of success. This notion may suggests that informational processing in the nascent entrepreneurial context can be driven by theory (existing knowledge) (Minniti and Bygrave, 1999; Shook et al., 2003) and dynamics (actions) rather than a random search and processing of information. The combined knowledge here guides the interpretation of processed information and any subsequent conceptual changes to the original idea for the new venture under founding process. This seems logical given that novel business contexts do not drive the nascent ventures of our sample. Indeed, this finding provides an important first step that encourages future research to explore the sources of information and how nascent entrepreneurs in the global sense use various methods and styles of forecasts.

This finding contributes significant knowledge to our understanding of the underlying aspects that in turn drive the relationship between the cognitive resources - process dynamics - new venture creation outcome. The (+) interaction between cognitive knowledge and conceptual changes, in essence, reflects the entrepreneurs' cognitive competency to make well-informed decisions, which consequently influence their vulnerability to uncertainty and reaction to existing and emerging information.

6.3.3.2.2 [Cognitive Style] x [Process Dynamics - (Opportunity Change)]

The findings in [CC] linear modelling indicate that the cognitive style of nascent entrepreneurs is a mixed style (intuitive and analytic), however, this does not indicate any significant marked difference between the adoption of intuitive and analytical styles of thinking. This suggests that nascent entrepreneurs have an equal tendency towards intuitive and analytical styles when it comes to the actions and decisions needed to progress the founding process. This could be explained on the basis of the dynamic and unpredictable nature of the new venture creation process which makes nascent entrepreneurs prone to shifting their mode and style of thinking to match the business venture's circumstances.

By transposing insights from cognitive style theory, our findings suggest that a nascent entrepreneur's preference towards a specific cognitive style depends on the internalised abilities of nascent entrepreneurs. These are dominant cognitive make-ups that can be advantageous or detrimental depending on their nature of interaction with process dynamics. This was evident in

the (+) interaction effect between [Cognitive Style] and [Opportunity Change], ($\beta = .469$; $p < .05$) that counteracted the (-) main effect of the former variable (refer to [CC] linear modelling) altering the pursued opportunities as they become relevant.

In effect, exposing the mixed cognitive style to the intellectual process appears to facilitate nascent entrepreneurs' ability to developing the requisite qualities and skills to frame problems, make decisions and cope up with the transitional steps, and this may produce a cognitive alignment between the style of thinking and the business founding context in a way that mitigates biases and facilitates balanced judgment and critical reasoning. This, in turn, promotes their attempts at making sensible changes at conceptual level [Opportunity Change] and consequently causes them to eliminate the gaps between practice and the reality of the founding process. This indicates that having a mixed mode of thinking that nascent entrepreneurs apply in accordance with the venturing situation can be beneficial in introducing incremental and radical changes at a conceptual level following the pace of the new venture's development process. This also reflects how nascent entrepreneurs reconsider and adapt their cognitive style and conceptual thinking in order to make more sense of the business-venturing situation.

The reversal in the direction of significance for the main effects of the [**Cognitive Information - style of thinking]** toward the (+) direction can also be understood from a **learning perspective** that emphasises that cognitions (information/style of thinking) in its isolated form (main effect) confers value unless it become transferable into integrated knowledge or competency driven by informed actions. A definite value tends to emerge as nascent entrepreneurs act on the opportunity and introduce meaningful conceptual changes that rationalise the process of thinking by eliminating gaps between the abstract understanding of the original idea of the business and the reality driven by the process dynamics [Opportunity Change], which in turn can change direction affecting the ultimate outcome of the new venture's creation as confirmed in our empirical study.

To this end, the significance of the interaction terms reported between cognitive capital and process dynamics models confirm the moderating effect of process dynamics on the relationship between cognitive capital and new venture creation outcome, and emphasise its importance in transmitting cognitive capital main effects. The preceding findings thus confirm the existence of the moderating effect for the hypothesis H4c: Nascent entrepreneurial process dynamics moderate the relationship between cognitive capital and the outcome of the new venture creation process.

In sum, applying the **dynamic approach** to the study of the effect of start-up capital's attributes

on the success of creating new ventures is confirmed to be of high importance. Clear results were evident for the moderating role that dynamic changes and actions play in transmitting the main effects of start-up capital. This obviously indicates that inactive forms of start-up capital's attributes are incomplete predictors of new venture creation outcome. The stated interactions between process dynamics and start-up capital's attributes incorporated observable shifts in the direction of significance for the majority of the main effects in the linear modelling as they interact with the process dynamics. The shifts in the direction of significance provided empirical evidence of the significance of the process dynamics' moderating effect within the integrated perspective, and explained in part why some entrepreneurs are able to transition to the operational stage while others cannot, and why nascent entrepreneurs who are endowed with comparable bases of resources may differ in their persistence. The answer lies in their ability to mobilise the start-up capital attributes in the dynamic process of business founding. This appears to free the contents of their thinking to contribute to the exchange between the external environment and the venturing dynamics (Shaver and Scott, 1991).

However, despite the observed significance between start-up capital's attributes and process dynamics within the integrative modelling, the pattern of results in the preceding sections suggests that the interaction with process dynamics, namely in the form of- rate and intensity of action, learning and commitment does not guarantee an optimum situation with ideal conditions for success. The preceding findings thus confirm the hypothesis H4: Nascent entrepreneurial process (new venture creation) dynamics moderate the relationship between start-up capital's attributes and the outcome of new venture creation process. This is summarised below.

Process Variables [PD]	**Capital Attributes***
[Gestation Duration- Rate]	[HC] [CC]
[Gestation Activities- Intensity]	[CC]
[Opportunity Change]	[CC]
[Opportunity Learning]	[SC] [HC]
* Note: Attributes on which PDs exert a significant moderating effect	

Table 6.6: Summary for [CC] Main Effects and Its Interactions with [PD]

Main Effects [CC]		Interaction Effects [PD X CC]	
PD: Gestation Dynamics [Duration (Rate) and Activities (Intensity)]			
CC: [Cognitive information]	-	[Gestation Duration] x [Cognitive information]	-
CC: [Cognitive Learning Desire]	-	[Gestation Intensity] x [Cognitive Learning Desire]	-
CC: [Cognitive Risk Profile]	-	[Gestation Duration] x [Cognitive Risk Profile]	+
CC: [Cognitive Persistence]	+	[Gestation Duration] x [Cognitive Persistence]	+
CC: [Cognitive Income Desire]	+	[Gestation Duration] x [Cognitive Income Desire]	-
CC: [Cognitive Expectation]	+	[Gestation Intensity] x [Cognitive Expectation]	+
PD: [Opportunity Change]			
CC: [Cognitive style]	-	[Opportunity Change] x [Cognitive Style]	+
CC: [Cognitive Desire by Family]	-	[Opportunity Change] x [Cognitive Family Desire]	-
CC: [Cognitive information]	-	[Opportunity Change] x [Cognitive Information]	+
CC: [Cognitive Risk Profile]	-	[Opportunity Change] x [Cognitive Risk Perception]	-

Table 6.7: Logit Estimates for [CC] Model - Main Effect and Its Interaction with [PD]

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Cognitive Persistence	.242** [.115] 1.274	.284** [.139] 1.328	.265* [.142] 1.303	.270* [.142] 1.310	.265* [.141] 1.303	.269* [.142] 1.308	-.088 [.233] .916
Cognitive Confidence	.348** [.154] 1.416	.411** [.193] 1.509	.410** [.196] 1.506	.452** [.197] 1.572	.423** [.195] [1.526]	.441** [.196] 1.555	.326 [.211] 1.386
Cognitive Style	-.33** [.145] .718	-.42** [.184] .651	-1.4*** [.557] .226	-.42** [.187] .657	-.44** [.187] .641	-.43** [.186] .646	-.550** [.215] .577
Cognitive Desire by Family (Inheritance)	-.24*** [.081] .780	-.23** [.098] .795	-.24** [.100] .785	-.24** [.100] .782	-.21** [.100] .803	-.23** [.100] .788	-.26** [.109] .765
Cognitive Desire by Power	.155** [.079] 1.167	.100 [.102] 1.106	.100 [.103] 1.105	.091 [.103] 1.095	.087 [.103] 1.091	.084 [.103] 1.087	.104 [.115] 1.109
Cognitive Desire by Learning	-.34*** [.102] .707	-.34** [.124] .711	-.39*** [.128] .671	-.37*** [.127] .687	-.39*** [.127] .673	-.39*** [.127] .676	-.40*** [.139] .668
Cognitive Desire by Income	.320*** [.111] 1.377	.262** [.130] 1.300	.248* [.133] 1.281	.295** [.137] 1.343	.216 [.134] 1.241	.275** [.135] 1.316	.037 [.141] 1.038
Cognitive Expectation by Sales	.505*** [.067] 1.658	.52*** [.082] 1.687	.51*** [.084] 1.674	.54*** [.086] 1.717	.51*** [.084] 1.677	.51*** [.084] 1.676	.401*** [.096] 1.494
Cognitive Expectation by Growth	.321*** [.093] 1.379	.221* [.120] 1.248	.241* [.123] 1.272	.251** [.123] 1.286	.269** [.123] 1.309	.257** [.123] 1.293	.242 [.148] 1.274
Cognitive Desire by Family Tradition	.172* [.093] 1.187	.137 [.116] 1.147	.162 [.119] 1.176	-.439 [.356] .644	.161 [.119] 1.174	.152 [.118] 1.164	.212* [.129] 1.237

Table 6.7: Cont. Logit Estimates for [CC] Model - Main Effect and Its Interaction with [PD]							
Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**
Cognitive Information	-.246** [.122] .782	-.222 [.146] .801	-.215 [.149] .807	-.203 [.148] .817	-.926** [.417] .396	-.209 [.148] .811	-.102 [.164] .903
Cognitive Job Satisfaction	.196* [.110] 1.217	.270** [.136] 1.310	.284** [.137] 1.328	.301** [.137] 1.351	.266* .137 1.305	.272** [.136] 1.312	.328** [152] 1.388
Cognitive Risk Perception for Competition	-.163* [.098] .849	-.235* [.137] .791	-.234* [.139] .791	-.226 [.138] .798	-.237* [.139] .088	.565 [.415] 1.760	-.301* [.155] .740
Process Variables							
Opportunity Change			-.969** [.384] .379	-.733** [.321] .481	- 1.380** [.640] .252	.078 [.224] 1.081	
Opportunity Learning			.046 [.119] 1.048	.026 [.119] 1.027	.009 [.118] 1.009	- .006*** [.119] .994	
Gestation Activities							.255*** [.049] 1.290
Gestation Duration							- .064*** [.020] .938
Interaction Terms							
Opportunity Change x Cognitive Style			469** [.230] 1.599				
Opportunity Change x Cognitive Desire by Family				.261* [.152] 1.298			
Opportunity Change x Cognitive Information					.326* [.179] 1.385		
Opportunity Change x Cognitive Risk Perception for Competition						-.352* [.176] .703	
Gestation Duration x Cognitive Persistence							.011** [.005] 1.011
Controls							
Wealth		***	***	***	***	***	
Industry		*	**	**	**	**	*

Table 6.7: Cont. Logit Estimates for [CC] Model - Main Effect and Its Interaction with [PD]							
Team Members		**	**	***	**	**	**
Constant	-3.9*** [.762]	-7.4*** [1.545]	-5.0*** [1.807]	-6.1*** [1.684]	-3.82* [2.214]	-7.5*** [1.754]	-4.073* [1.811]
No. of Nascent Entrepreneurs	816	816	816	816	816	816	816
Nagelkerke R Square	25%	39%	41%	41%	40%	40%	49%
Model 1 – [CC] Linear Model; Model 2 - [CC] Linear Model with Controls; Model 3 - 7 [CCXPD] Interaction Terms							

Table 6.7: (Continued – CC logit Estimates [Models 8-13])						
Variables	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**	**Model 13**
Cognitive Persistence	.356** [.154] 1.428	.327** [.153] 1.386	.334** [.154] 1.396	.373** [.157] 1.452	.359** [.154] 1.432	.334** [.154] 1.397
Cognitive Confidence	.347 [.215] 1.414	.332 [.215] 1.394	.293 [.212] 1.340	.319 [.216] 1.376	.313 [.214] 1.367	.303 [.212] 1.354
Cognitive Style	.042 [.322] 1.043	-.48** [.213] .616	-.43** [.214] .645	-.529** [.219] .589	-.45** [.214] .635	-.498** [.213] .608
Cognitive Desire by Family (Inheritance)	-.27** [.110] .759	-.28** [.109] .753	-.28*** [.111] .750	-.33*** [.115] .716	-.28** [.111] .753	-.27** [.109] .759
Cognitive Desire by Power	.095 [.116] 1.100	.131 [.115] 1.140	.107 [.115] 1.112	.116 [.117] 1.123	.111 [.115] 1.117	.121 [.116] 1.128
Cognitive Desire by Learning	-.44*** [.138] .644	.366 [.437] 1.442	-.41*** [.137] .659	-.41*** [.138] .659	-.43*** [.137] .648	-.43*** [.139] .646
Cognitive Desire by Income	.076 [.142] 1.079	.037 [.142] 1.038	.337* [.198] 1.400	.078 [.145] 1.081	.040 [.141] 1.041	.028 [.141] 1.028
Cognitive Expectation by Sales	.400*** [.096] 1.491	.415 [.096] 1.514	.39*** [.095] 1.482	-.053 [.142] .948	.38*** [.096] 1.47	.408*** [.096] 1.504
Cognitive Expectation by Growth	.255* [.149] 1.290	.233 [.147] 1.262	.238 [.147] 1.269	.282* [.151] 1.326	.248* [.148] 1.281	.251* [.148] 1.285
Cognitive Desire by Family Tradition	.239* [.131] 1.270	.210 [.130] 1.233	.249* [.132] 1.283	.281** [.136] 1.324	.220* [.129] 1.246	.215* [.130] 1.240
Cognitive Information	-.100 [.164] .905	-.115 [.162] .891	-.127 [.164] .881	-.116 [.167] .891	-.132 [.165] .876	.856 [.584] 2.354
Cognitive Job Satisfaction	.360** [.150] 1.434	.325** [.153] 1.383	.329** [.152] 1.390	.363** [.154] 1.438	.348** [.151] 1.417	.317** [.152] 1.374

Table 6.7: (Continued – CC logit Estimates [Models 8-13])						
Variables	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**	**Model 13**
Cognitive Risk Perception for Competition	-.357** [.157] .700	-.299* [.155] .742	-.297* .155 .743	-.379** [.161] .685	-.647*** [.231] .524	-.312** [.156] .732
Process Variables						
Gestation Activities	.257*** [.049] 1.293	.577*** [.185] 1.781	.258*** [.049] 1.295	.260*** [.050] 1.297	.251*** [.049] 1.285	.593*** [.209] 1.810
Gestation Duration	.002 [.010] 1.002	-.020*** [.004] .981	.004 [.011] 1.004	-.054*** [.010] .947	-.029*** [.007] .972	-.019*** [.004] .981
Interaction Terms						
Gestation Activities x Cognitive Desire by Learning		-.086* [.045] .918				
Gestation Duration x Cognitive Desire by Income			-.006** [.003] .994			
Gestation Duration x Cognitive Expectation by Sale				.012*** [.003] 1.012		
Gestation Duration x Cognitive Risk Perception for competition					.008** [.004] 1.008	
Gestation Activities x Cognitive Information						-.098* [.056] .907
Industry	*	*	*	*	*	*
Constant	-6.67*** [1.852]	-8.51*** [2.410]	-6.77 [1.875]	-4.71*** [1.78]	-5.2*** [1.738]	-8.61*** [2.540]
No. Of Nascent Entrepreneurs	816	816	816	816	816	816
Nagelkerke R Square	49%	49%	49%	52%	49%	49%

Table 6.7: (Continued – CC logit Estimates [Models 1-13])

- Model 1 – CC Linear model with no control;
- Model 2 – CC Linear model with controls;
- Models 3-13 – Interaction effects between cognitive capital and process dynamics [CC x PD];

- The numbers in the table are presented as follows: coefficients; standard errors in parentheses; odd ratios.
[1] B the estimated logit coefficient
[2] S.E. the standard error of the coefficient
[3] Exp (B) the "odds ratio" of the individual coefficient. Odds ratio is a nonlinear transformation of the logit coefficient, so the confidence interval is asymmetric
[4] R2 statistic. It is the proportion of the variance in the dependent variable that is explained by the variance in the independent variables.

- *p < .10 (two-tailed); ** p < .05 (two-tailed); *** p < .01 (two-tailed)
- Industry dummies were included to control for unobservable industry specific effects.

6.4 Integrative Modelling (II) – "Start-up Capitals" Interplay and Its Impact on New Venture Creation – H5: Cognitive Capital [CC] Moderating Perspective

6.4.1 Human and Cognitive Capital's Interaction & Its Impact on New Venture Creation – H5a: CC Moderating Perspective

This section presents the findings for the relationship between [HC-CC] models and its effect on the outcome of the new venture creation process. The significance of this relationship was confirmed with higher predictive power than the linear models. [HC-CC] interaction model generated a substantially better fit (R^2 = 46% for **[HC x CC]** than both the linear model of **HC** (R^2 = 7-25%) and integrated model for the [**HC-PD]** (R^2 = 40%).

The Interaction between [HC-CC] capitals was defined as follows:

$$Yi \text{ (outcome)} = b_0 + b_1 HC_{1i} + b_2 CC_{2i} + b_3 (HC \times CC) \qquad \textbf{Model 3-13 [HC x CC]}$$

The cognitive attributes that had significant interactions with [HC] model were related to: [Desires], [Expectations], [Persistence], [Information] and [Style of Thinking]. So, if we look at cognitive persistence, we observe its (+) interaction effect with [Knowledge Diversity], retaining the latter's variable (+) significant main effect in the linear modelling. Cognitive persistence appears to contribute to the reinforcement of the (+) main effect of nascent entrepreneurs' experience in parents' start-ups, and this appears to suggest that if cognition factors include social

aspects or interact with social aspects, the ultimate effect attained is highly influenced by the direction and magnitude of influence of the social factor employed. In other words, the interaction terms that embodies social cues within either [HC] or [CC] models produce significant outcomes. This was evident in the interaction effect induced by the socio-cognitive medium [Cognitive Desire by Family Traditions] on the [Start-ups-] (β =. 436; $p < .10$), and [Supervision-] (β =. 163; $p < .05$) Experiences, reversing the (-) direction of significance and boosting the (+) magnitude of significance for their main effects within the linear modelling, respectively.

Apparently, cognitive desires driven by social aspects were associated with a suppressing power that supersedes the main effects of [HC] that are driven by the isolated effects of practical (specific) knowledge aspects, and this led to (+) reversals in the direction of significance for the main effects of **[**HC-Practical knowledge]. Another example that confirms the relevance of the socio-cognitive medium for [HC-CC] interaction and more specifically the moderating influence of the [CC] factor was evident in the negative interaction between [Family Tradition Desire] and [HC-Knowledge Diversity] (β =-.226; $p < .10$). The result of the latter interaction partly explains why the positive main effect of [Knowledge Diversity] shifts the linear direction of its significance (from (+) to (-) effect) under the interaction with [Learning Dynamics] as reported in previous section. Clearly, [Knowledge Diversity] appears to be prone to the socio-cognitive biases that define the boundary of its applicability at the dynamic level.

The findings show that nascent entrepreneurs who combine start-up practical experiences with balanced cognitive desires driven by non-economic aspirations have higher chances in successfully creating new ventures compared to nascent entrepreneurs who combine their start-up experience with cognitive desires driven strictly by economic considerations. In contrast, looking at cognitive desires driven by income aspects, no changes are detected in the direction or magnitude of significance upon the main effects of the [HC] linear modelling. This was evident in the interactions between [Cognitive Income Desire] and the [HC] attributes that relate to [Start-up Experience] and [Experience in Parents' Start-ups] (β = -.342, $p < .10$; β = .298, $p < .10$), respectively. Clearly, the effect of the cognitions driven by economical aspects appears to reinforce the (+, -) main effects reported in the [HC] linear modelling. This in turn indicates that the desires driven by entrepreneurs' economic profile promote conformity with nascent entrepreneurs' prior (existing) knowledge. The (-) connection between [Prior Start-up Experience] and the cognitions driven by [Economic Desires] could be due to the fact that 'experienced entrepreneurs are more risk-averse and less willing to capitalise on unprofitable opportunities' (Santarelli and Tran, 2013,

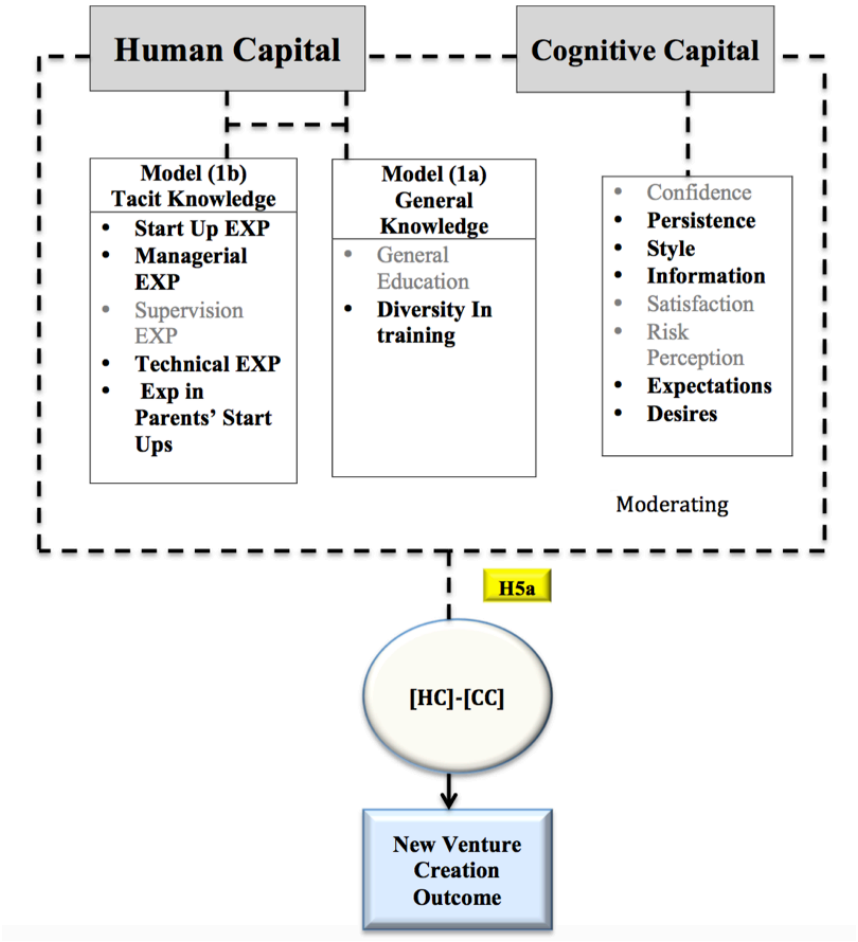
p. 17). This suggests that nascent entrepreneurs with prior start-up experience are more inclined to discontinue the new venture under creation if their cognition of the situation has reached a risk level beyond their tolerated appetite for risk. The venture capital literature has asserted this notion by arguing that the economic consideration alone is less effective than when combined with other attributes, and could act as a limiting factor that impedes effective integration (Schenkel et al., 2012; Klyver et al., 2013).

The findings also detected varying patterns of interaction between human capital and cognitive attributes as summarised in Table (6.8). The patterns of associations appear to justify the main effects produced in the [HC] linear modelling. For example, the interaction between the cognitions driven by [Expectations] - [Style of Thinking] and [HC- Practical Model], (β = -.204, p < .10; β = -.453, p < .05)respectively, both emphasised the (-) main effect of [Managerial Experience]. While the interaction between [Cognitive Information] and [HC- Practical Knowledge] counteracted the (+) main effect of [Technical Experience] (β =-.762; p < .05). Also the interaction between [Cognitive Desires] and [HC- General and Practical Models], counteracted the (+, -) main effects of [Diversity of Training] (β =-.226; p < .10) and [Start-up Experience] (β = -.342, p < .10), respectively. This pattern of results shows that cognitive knowledge of nascent entrepreneurs (mental capacity) produces varying interaction effects of conformities or mismatches with the [HC] existing knowledge at the general and practical levels. The (-) interaction effects upon [HC] linear modelling could be attributed to the cognitive biases that may suppress or inflate the main effects, leading to the (-) outcomes. The mixed findings that enforce and counteract the main effects in the [HC] linear modeling appear to confirm the moderating role of cognitive capital between the [HC] model and the achieved outcome in the business launching process.

Looking at cognitive processing in terms of [Information Processing] and **[**Style of Thinking], it appears that nascent entrepreneurs in this study adapted mixed styles of cognitive thinking with active searches and processing of information. The active and mixed style of thinking seem to embody biases, mixed interpretations that limit the metacognitions that deceptively act as barriers that hinder nascent entrepreneurs' ability to harvest the value of a broad, informed and active mindset. The broad and active search profile appears to be advantageous only in situations where the cognitive profile creates a relevant and coherent medium that enables nascent entrepreneurs to link their thoughts, rationales and feelings to the existing and /or the emerging knowledge. This, in turn, enables coherence between [HC] knowledge and cognitions that compensate for the missing

links and gaps, allowing nascent entrepreneurs to unlock ambiguities and simulate situations that better reflect the business venturing reality.

Figure 6.8: [HC-CC] Interaction Model – Empirical Results



This also has the potential to balance entrepreneurial intuitions with hard facts in a way that improves practice, and enhances the ability of novices at the nascent stage of business venturing to reach decisions similar to those of experts (Shamian, 1991). However, this was not the case in the present study, as the mix mode of thinking appears to associate with counterintuitive judgments, which makes nascent entrepreneurs in the context of this study prone to confusion and mental uncertainty that arise when mismatches bring nascent entrepreneurs' sense making out of kilter. For example, looking at cognitive thinking in terms of style and information processing, it can be seen that their (-) interaction effect induced in [Technical and Managerial] experiences (β = -.762, $p < .05$; β =-.453, $p < .05$) respecyivley, retained the (-) main effects within the linear modelling of these experiences. This implies that nascent entrepreneurs who are overwhelmed with information accessed through the resource capital systems are prone to detachment from the

business context, especially if they become more susceptible to conflicting signals with prior [HC] knowledge that diminishes the contribution of information in the context of new venture creation. This as mentioned earlier leads to the conclusion that informational processing in the context of new venture creation is driven by theory (existing/prior knowledge) from the resource capital system (i.e. human capital) rather than the random search for information. This may also suggests that prior knowledge is the dominant way that guides the interpretation of information during the founding process (Shook et al., 2003). Accordingly, certain forms of interaction between human and cognitive capitals appear to limit nascent entrepreneurs' ability to develop the requisite skills that facilitate taking the transitional steps required in the business formation process, resulting in erraticism that makes the gestation progress prone to (-) effects. This (-) effect can be induced when human capital driven by specific (practical) knowledge constrains the cognitive flexibility and entrepreneurs' ability to adapt to dynamic changes (Denrell and March, 2001).

This supports Aldrich and Yang's (2014, p. 61) argument that 'finding how a "fit" arises between organisations and their contexts is, therefore, the key to comprehending trends in organisational emergence, transformation, and termination'. They describe this phenomenon as entrepreneurs' evolutionary thinking, emphasising the importance of understanding the context of interactions between the environment, the new venture and how it evolves as individuals act dynamically using their cognitions and prior experiences. This suggests that nascent entrepreneurs' ability to extend their existing stock of knowledge is a function of their mental capacity to form, employ and retrieve patterns of actions residing in their cognitive schemes. Therefore, nascent entrepreneurs appear to have a better chance of fostering the dynamics of the new venture formation process by attaining a level of stability/coherence between [HC - CC]'s knowledge profiles.

Additionally, the mismatch between human and cognitive capitals could also result in constructive biases that can aid enterprising individuals in detecting false positive assessments that act as an early alert that steer the attention of nascent entrepreneurs to potential risks. Therefore, this adverse effect of mismatches could be another sign of a productive combination between [HC] and [CC] models. Constructive biases, according to our results, tend to emerge when a gap between nascent entrepreneurs' prior knowledge [HC] and cognitive knowledge [CC] occurs. So, as nascent entrepreneurs engage their cognitions and encounter non-conformity with existing knowledge, this adds another layer that complicates the process of interpretation, sense

making and decision-making. As a result, they fail to concurrently learn, adapt to changes and interact with the dynamism of the entrepreneurial process, leading to further implications that affect the gestation's progress. Consequently, nascent entrepreneurs may become susceptible to the effect of cognitions in isolation from their prior knowledge (Ucbaracan et al., 2008) or become inclined to prior knowledge divorced from their cognitive intelligence. Both routes lead to a dysfunctional mental state that ultimately affects their productive ability, and in return the attained outcome.

Cognitive capital in this context is employed to explain how nascent entrepreneurs are motivated to acquire, maintain, and foster the necessary resources as found in human capital to attain success in new venture creation process. Human capital acquisition increases entrepreneurs' cognitive competency, which in turn will improve entrepreneurial performance, develop better work tactics, give more thoughtful ideas, greater perseverance, and more attention to detail, all of which make success more likely (Neisser et al., 1996; Ng and Feldman, 2010). This was evident in the findings of the present study that appear to suggest that the combined effect between [HC-CC] models serves to transmit more content knowledge to nascent entrepreneurs, improve sense making and abstract reasoning, competencies, and promote innovative thinking. Taken collectively, then, the findings suggest that the combined effect between [HC-CC] models is likely to raise the likelihood of concluding the process of new venture creation. A key finding in this study is that the effects of human capital on nascent entrepreneurial success are not necessarily direct, but instead are moderated by cognitive aspects. The basic premise of this perspective is that key insights into distinguishing entrepreneurs from others and understanding entrepreneurial actions could be achieved not only by studying how entrepreneurs think and feel (rational and emotional cognitions) but also how they interpret information, combine knowledge, and interact in a complex environment.

The detected significance between [HC - CC] models reflects nascent entrepreneurs' orientation towards reflective thinking as they make inferences and sense cues from the manifestation of metacognitive activities. Ideally, metacognition encourages nascent entrepreneurs to engage in critical tasks that allow them to question existing assumptions, entertain thoughts, identify patterns and explore meanings embodied in different contexts and in turn this paves the way for successful transformations of collective feelings, thoughts and experiences into a new knowledge that promotes success in founding new ventures (Kolb, 1984; Keith and Frese, 2005), or otherwise induces biases that suppress/inflate their thinking leading to unfavourable outcomes.

Therefore, the significance of the combined effect between [HC -CC] models was evident; and the enforcing and counteracting effects discussed in the preceding section confirmed the moderating effect of cognitive capital upon the relationship between [HC] model and the outcome attained in the process of new venture creation. Therefore, the hypothesis below is confirmed:

H5a: The combined effect between human and cognitive capitals is a stronger predictor of Nascent Entrepreneurship success than linear models and moderated by cognitive capital.

Table 6.8: Summary for [HC] x [CC] Interactions

Main Effects		Interaction Outcome HCXCC	
○ Cognitive Desire By Family Tradition (+) ○ Diversity Of Training (+)	+ +	○ Counteracting the (+) main effect of HC	-
○ Cognitive Persistence (+) ○ Diversity Of Training (+)	+ +	○ Enforcing the (+) main effect of HC	+
○ Cognitive Information (-) ○ Technical Experience (+)	- +	○ Counteracting the (+) main effect of HC	-
○ Cognitive Desire By Family Tradition (+) ○ Start Up Experience (-)	+ -	○ Counteracting the (-) main effect of HC	+
○ Cognitive Desire By Income (+) ○ Start Up Experience (-)	+ -	○ Enforcing the (-) main effect of HC	-
○ Cognitive Desire by Income (+) ○ Experience In Parents' Startups (+)	+ +	○ Enforcing the (+) main effect of HC	+
○ Cognitive Persistence (+) ○ Experience In Parents' Startups (+)	+ +	○ Enforcing the (+) main effect of HC	+
○ Cognitive Expectation By Growth (+) ○ Managerial Experience (-)	+ -	○ Enforcing the (-) main effect of HC	-
○ Cognitive Style (-) ○ Managerial Experience (-)	- -	○ Enforcing the (-) main effect of HC	-
○ Cognitive Information (-) ○ Supervision Experience (-)	- -	○ Counteracting the (-) main effect of HC	+

Table 6.9 : Logit Estimates for [HC X CC] Integrated Model

Interaction Terms	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Mode 7
Cognitive Desire by Family Tradition x Diversity of Training			-.226* [.125] .798				
Cognitive Persistence x Diversity of Training				.363*** [.137] 1.438			
Cognitive Information x Technical Experience					-.762** [.345] .467		
Cognitive Desire by Family Tradition x Start-up Experience						.436* [.227] 1.546	
Cognitive Desire by Income x Start-up Experience							-.342* [.238] .710
Constant	-2.543 [1.641]	-3.47 [2.37]	-4.42* [2.43]	-2.97 [2.453]	-6.75** [2.799]	-3.092 [2.440]	-4.00 [2.43]
Model 1 – [HC; CC] Linear Models; **Model 2 -** [HC; CC] Linear Model with Controls; **Model 3 - 7** [HCXCC] Interaction Terms							

Table 6.9: (Continued - HC X CC Interaction Terms [Models 8-13])						
Variables	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**	**Model 13**
Cognitive Desire by Income x Experience in Parents' Start-ups	.298* [.172] 1.348					
Cognitive Persistence x Experience in Parents' Start-ups		.333* [.194] 1.396				
Cognitive Expectation by Growth (Employment base) x Managerial Experience			-.204* [.115] .816			
Cognitive Style x Managerial Experience				-.453** [.197] .636		
Cognitive Information x Supervision Experience					.215* [.111] 1.239	
Cognitive Desire by Family (Inheritance) x Supervision Experience						.163** [.064] 1.177
No. Of Nascent Entrepreneurs	816	816	816	816	816	816
Nagelkerke R Square	45%	46%	45%	46%	45%	46%

- **Model 1-2** The individual variables for HC and CC (Model 1), and the individual variables combined with controls (Model 2). The coefficients of Models 1-2 are omitted from the table to make reading the table easier.
- **Model 3-13** – Interaction effects between [HC-CC]. The complete model (including the individual variables for HC and CC) was estimated for Models 3-13, but the coefficients for the individual variables were omitted to make reading
the table easier.
- The numbers in the table are presented as follows: coefficients; standard errors in parentheses; odd ratios.

[1] B the estimated logit coefficient
[2] S.E. the standard error of the coefficient
[3] Exp (B) the "odds ratio" of the individual coefficient. Odds ratio is a nonlinear transformation of the logit coefficient, so the confidence interval is asymmetric
[4] R2 statistic. It is the proportion of the variance in the dependent variable that is explained by the variance in the independent variables.

- *p < .10 (two-tailed); ** p < .05 (two-tailed); *** p < .01 (two-tailed)
- Industry dummies were included to control for unobservable industry specific effects.

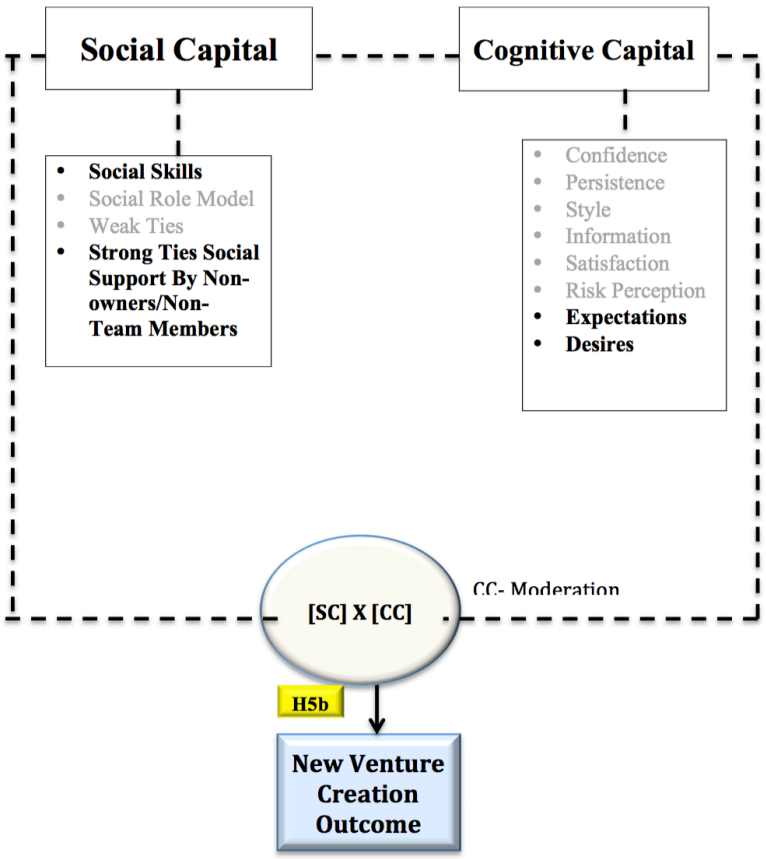
6.4.2 Social and Cognitive Capital's Interaction & Its Impact on New Venture Creation – H5b: CC Moderating Perspective

This section presents the findings for the relationship between [SC] and [CC] models and the combined effect of these models on the outcome of the new venture creation process. The significance of this relationship was confirmed with higher predictive power than the linear modelling. The interaction between [SC] and [CC] models associated with the varying effects upon the outcome of new venture creation that variously reinforced and counteracted the main effects reported in the [SC] linear model. The Interaction between [SC] and [CC] forms of capital

generated a substantially better fit (R^2 = 45%) than both the linear model of [SC] (R^2 = 8- 28%) and the integrated model of social capital with process dynamics (R^2 = 29%). The cognitive attributes that had significant interactions with [SC] model were related to: [Desires], and [Expectations]. The integrated model between [SC-CC] was defined as follows:

$$Yi\ (outcome) = b_0 + b_1\ SC_{1i} + b_2\ CC_{2i} + b_3\ (SC \times CC) \qquad \textbf{Model 3-5 [SC X CC]}$$

Figure 6.9: [SC-CC] Interaction Model – Empirical Results



The social-cognitive interaction portrays how the external (social) and internal (cognitions) contexts become represented in new venture creation experience. This combination also aids us in understanding the social aspects that interfere with the development of nascent entrepreneurs' mental cognitions.

Looking at **[Social Skills],** this variable had (+) and significant interaction with **[Cognitive Expectation]** (β = .817; *p* <. 05). This outcome is derived through the benefits of social competencies that capitalise on different expertise and external cues beyond the common and biased views shared within the social network. Social competency acts as a cushion that incorporates diverse external cues accessed by the emerging patterns of social competency. The diversity of social competency appears to enable nascent entrepreneurs to bridge gaps in their cognitive

knowledge, and access socio-expressive resources and specific qualifications (De Carolis et al., 2009). In turn, the embedded diversities in social competency appear to aid them in forming realistic and balanced expectations that maximise their likelihood of success in launching a new venture.

The rationalisation process is driven by the interaction between social skills and cognitive expectations that appears to play a key role in extending nascent entrepreneurs' capacity in which they become more able to form expectations that extract genuine benefits in alignment with their socio-cognitive intelligence. This also seems to act as a motivational element that aligns (balances) social actions with mental states. This agrees with Baron and Markman's (2000) supposition that 'the impact of social skills on entrepreneurs' success may be moderated by current feelings or moods, as suggested by the basic research on affirmative states'. Clearly, the combination between social skills and cognitive expectations stimulates mental states and emotions that balance actions and encourage persistence and commitment to the founding process, which was also evident in the detected (+) and significant interaction between [Social Skills] and [Commitment Dynamics] as reported in previous section. This encourages nascent entrepreneurs to build more confidence in their expectations as they become more willing to initiate and try out entrepreneurial actions within the social context (Sherer and Adams, 1983). The socio-cognitive balance makes nascent entrepreneurs less inclined to engage in predetermined types of business venturing, because this balance leverages their flexibility to select different trajectories, and adapt to emerging changes efficiently and innovatively. The successful integration between [SC] and [CC] models concurs with expectancy theory holding that:

"new venture creation is nothing if not innovation, taking the unforeseen with the foreseeable … the entrepreneurial climate provides few clues to the probability estimates that should be attached to each individual evaluative element. In the examination of choice, as well as in the study of process, the cognitive perspective incorporates both personal and situational variables." (Shaver and Scott, 1991, p. 39).

On the other hand, the (-) significant interaction between **[Social Skills] and [Cognitive Desire by Family Tradition], (**$\beta = -.245$; $p < .10$) appears to counteract the (+) main effect reported in the [SC] linear modelling for the former's variable, suggesting that when social competency is not in harmony with the cognitive desires formed by common social norms, values, obligations and frames of thinking embedded in social networks, a (-) effect is more likely to be produced. The lack of harmony between the social-cognitive profiles drives a lack of balance, ambiguities, conflicting signals and misaligned actions that can make nascent entrepreneurs prone to behavioural biases such as illusions and overconfidence in their social skills (illusion of control) while in reality they

are detached from their social context. They can alternatively become inclined towards their social value system favouring family aspirations while otherwise remaining isolated from their social competency. The stated misalignments have the potential to restrict nascent entrepreneurs' adaptability and their capacity to blend into a variety of social and business settings resulting in bounded rationality and emotional conflict which in turn impedes their ability to learn and attain success at the pre-startup stage.

Therefore, integrating cognitive and social insights does not necessarily lead to coherent judgement and may also be associated with chaotic interpretations and illusions that fail to tap into existing and/or emerging knowledge. In addition, the (-) effect can be explained through social information processing theory (Salancik and Pfeffer, 1978) and interpersonal attraction (Byrne, 1971), arguing that individuals are inclined to information that they obtain from their social context, which plays a role in shaping their actions and cognitions. This accords with the argument that 'social cognition processes are no more—and no less—an inference from the data than is the notion of vicarious learning from an effective role model' (Shaver and Scott, 1991, p. 34). The cognitive thinking, in this case, appears to be embedded in the social value system (traditions), where nascent entrepreneurs draw on common social beliefs, expectations, codes and common patterns of thinking that facilitate the acquisition and exchange of reliable information in a timely manner. But, on the other hand, the benefits of social capital may as well encounters antithetical behaviours that seem to bound nascent entrepreneurs' rationality by filtering out information that does not conform to codes and shared meanings that relate to their social reality (tradition). This agrees with De Carolis et al.'s (2009, p. 539) view that a 'virtually unexplored connection could explain the fact that social capital do not universally facilitate new venture progress'. Therefore, the inclination to cognitive desires driven by nascent entrepreneur's social knowledge can impedes their ability to mobilise social skills and in turn hinders their capacity to extend knowledge beyond the conceived social reality. Nascent entrepreneurs in such case may compromise on their social skills to adhere to a social value system in order to preserve to 'the social security blanket' and offset the risks and the neurotic behaviour associated with the potential setbacks. Therefore, despite the worth and credibility of social capital, nascent entrepreneurs' engagement in the filtering of information to fit the mental frame of social meanings and cognitive desires driven by social cues with the reality of the business under founding process appears to induce detrimental effects and biased vision about their ability to control future uncertainties (De Carolis et al., 2009). This is congruent with De Carolis' (2009, p. 532) suggestion that 'selectively focusing on information that falls into common perceptual categories may distort the reality of that information. Vital information that could challenge an entrepreneur's view of

"how the world works" may be filtered out causing the entrepreneur to overestimate their understanding of a situation'. This pattern of results suggests that nascent entrepreneurs who are overwhelmed with the amount of information that is emotionally attached to their socio-cognitive knowledge system develop a higher tendency to be detached from the business context and become more susceptible to the risk of focusing on fitting cognitions and skills into specific social mental frames that have the potential to attenuate progress in the venture creation process as shown in the findings of the present study.

As for the (+) and significant interaction between **[Cognitive Expectation] and [Strong Ties-Social Support by Non-Owners Non-Team Members]** ($\beta = .819$; $p < .05$), the nature of this combination suggests that nascent entrepreneurs who form expectations based on the expected support from their social system tend to underestimate the perception of their own success, especially at the early stage of the process when their actual performance is more likely to be lagging than their cognitive expectations. However, when nascent entrepreneurs become aware of the limitations, biases and actual benefits induced by their social network system, they develop 'altering behaviour mechanism' that appears to fine-tune and balance their expectations in a way that aids them to attain equilibrium between the reality and their socio-cognitive mind-set. This appears to mitigate the counterintuitive thinking, enable receptivity to learning and control for the detrimental effects associated with social conformity (common mode of thinking), and therefore maximises the potential to achieve success in the process of new venture creation.

In general, the significant interactions between the [SC] and [CC] models indicate the relevance of social cognitive theory to Nascent Entrepreneurship, where 'shared language and vocabulary facilitate the exchange of information, learning, and the conduct of business [that] shape an individual's consciousness' (De Carolis et al., 2009, p. 532). The socio-cognitive combination facilitates the exchange of social and cognitive meanings based on expectations, and the desires residing in the cognitive structure, acting as principal beliefs and motivating forces that answer the questions of 'how a person's cultural heritage and social networks become represented in mind' (Shaver and Scott, 1991, p. 36). It also explains why some nascent entrepreneurs who are immersed in social networks are able to capitalise on social knowledge and others are lacking the ability to exploit social knowledge. Indeed, for this knowledge to become conducive to the successful founding of new ventures, nascent entrepreneurs need to be aware of the limitations and potentials arising from the socio-cognitive context.

As per the above discussion, the [SC - CC] interaction seems to reinforce and counteract some of

the main effects reported in the [SC] linear modelling, leading to varying interaction effects (-, +) on the outcome of new venture creation process. This confirms the hypothesis: **H5b:** The combined effect between social and cognitive capitals is a stronger predictor of Nascent Entrepreneurship success than linear models and moderated by cognitive capital.

Table 6.10: Summary for [SC] X[CC] Interactions

Main Effects	Interaction outcome [SCXCC]	
○ Cognitive Desire by Family Tradition (+) ○ Social Skills (+)	Counteracting the (+) main effect of [SC] Linear Model	-
○ Cognitive Expectation by growth in employment (+) ○ Social skills (+)	Enforcing the (+) main effect of [SC] Linear Model	+
○ Cognitive Expectation by Growth in Employment (+) ○ Strong Ties- Social Support By Non Owners/ Non Team Members (-)	Counteracting the (+) main effect of [SC] Linear Model	+

Table 6.11 : Logit Estimates for [SC X CC] Integrated Model

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Interaction Terms					
Cognitive Desire by Family Tradition x Social Skills			-.245* [.128] .782		
Cognitive Expectation by Sales x Strong Ties				-.479** [.217] .620	
Cognitive Expectation by Growth in Employment x Social skills					.817** [.412] 2.162
Cognitive Expectation by Growth in Employment x Strong Ties					.819** [.414] 2.267
Constant	-2.543 [1.641]	-3.472 [2.372]	-5.801** [2.703]	-3.497 [2.366]	-3.505 [2.362]
No. Of Nascent Entrepreneurs	816	816	816	816	816
Nagelkerke R Square	33%	45%	45%	45%	45%

Table 6.11 : Cont. Logit Estimates for [SC X CC] Integrated Model

- **Model 1-2** The individual variables for [SC] and [CC] (Model 1), and the individual variables combined with controls (Model 2) were estimated. The coefficients of Models 1-2 are omitted to make reading the table easier.

- **Model 3-5** – Interaction effects between [SC-CC]. The complete model (including the individual variables for SC and CC) was estimated for Models 3-13, but the coefficients for the individual variables were omitted to make reading the table easier.

- The numbers in the table are presented as follows: coefficients P values; standard errors in parentheses; odd ratios.

[1] B the estimated logit coefficient
[2] S.E. the standard error of the coefficient
[3] Exp (B) the "odds ratio" of the individual coefficient. Odds ratio is a nonlinear transformation of the logit coefficient, so the confidence interval is asymmetric
[4] R2 statistic. It is the proportion of the variance in the dependent variable that is explained by the variance in the independent variables.

- *p < .10 (two-tailed); ** p < .05 (two-tailed); *** p < .01 (two-tailed)

- Industry dummies were included to control for unobservable industry specific effects.

6.4.3 Human and Social Capital's Interaction & Its Impact on New Venture Creation – H5c

This section presents the findings for the relationship between [HC] and [SC] models and its effect on the outcome of the new venture creation process. Models [3-5], presented in Table (6.13), were used to observe the interaction effect between [HC] and [SC]; they were defined as follows: Yi (outcome) = $b_0 + b_1 HC_{1i} + b_2 SC_{2i} + b_3$ (HC x SC) **(Model 3-5).**

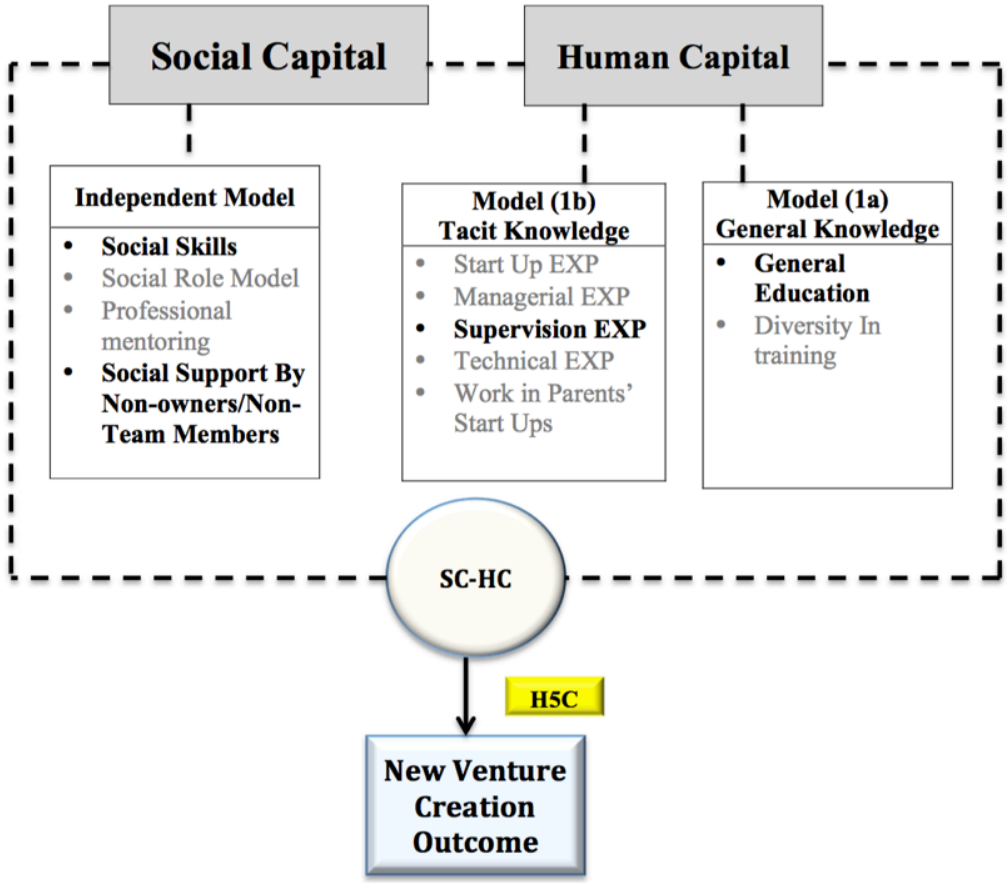
According to Table (6.13), Models 3-5 [HC x SC] had a better model fit (R2 = 45%) than the linear models for [HC] and [SC] factors (R2 = 7-25% HC; R2 = 8-28% SC), and the integrated models for [HC] and [SC] with process dynamics [PD], (R2 = 40% [HC X PD]; R2 = 29% [SC x PD]).

The combined model between [HC] and [SC] factors (see Figure 6.10) posits that their interaction enhances the effect of each sort of capital on the outcome of the new venture creation process (Yi). However, the findings also made clear evidence that cognitive capital interaction with both forms of capital (HC, SC) still appears to be more important in the context of the start-up capital integrated modelling as opposed to the interaction between social and human capitals themselves. According to Table (6.13), and as summarised in Table (6.12), no interaction terms between social

and human capital had significant positive effects, while the following interaction terms were reported as significant negative predictors:

- [General Education] x [Social Skills] ;(β =-.196; $p < .10$);
- [Supervision Experience] x [Social Skills]; (β =-.158; $p < .10$);
- [Supervision Experience] x [Strong Ties- Support by Non-Owners]; (β =-.429; $p < .05$).

Figure 6.10: [SC-HC] Interaction Model – Empirical Results



Despite the improvement in the interaction between [HC] and [SC] as indicated in Models 3-5 in Table 6.13, however this interaction failed to drive complementary success, as it failed to offset the previously discussed negative main effect of supervision experience, or suppress the marginal positive main effect of general knowledge reported in the [HC] linear modelling. These negative interaction effects show that nascent entrepreneurs are unable to harvest the benefits of combining human and social capitals, suggesting the limited advantage of the integrative approach between [HC] and [SC] models in deploying or extending the existing and/or emerging knowledge toward successful founding. Therefore, the findings of this study indicate that human and social forms of

start-up capital are equally important yet not complementary to each other in the success model of Nascent Entrepreneurship. The findings come in the light of the argument that interaction between social and human capitals is associated with notable debates (Roberts and Lacey, 2008) occurring over its substantive meaning and significance. Issues include how far social capital helps nascent entrepreneurs to accumulate or inhibit knowledge; the extent to which higher attainment of human capital erodes social capital; the degree to which these capitals are convertible and whether the interactions encourage complementarity or substitutability.

In more specific terms, [Social Skills] factor was found to be a social capital aspect that interacts negatively with the [HC] model in the present study. Nascent entrepreneurs who are endowed with unique social skills are colloquially called 'social chameleons' who are capable of deploying their social skills in ways that allow them to adapt and blend effectively into a variety of contexts and situations within social and business environments (Kilduff and Day, 1994). Social competency in this study appears to act as a crucial social factor that can function as an effective substitute, offsetting imperfection, lack of relevance or deficiency in the existing stock of knowledge [HC]. Nascent entrepreneurs at the pre-startup stage meet with new acquaintances and stakeholders and so social skills could be beneficial in managing and extending social relations that enable them to mix comfortably in different contexts (Baron and Markman, 2000). This arguably aids them in accessing, integrating and creating new knowledge in isolation from their existing qualifications and experiences that can introduce conflicts and biases that hinder the successful application of the social knowledge (social competency). In effect, nascent entrepreneurs may actually possess the knowledge either in its tacit or general form, yet lack the know-how required to integrate this new or emerging knowledge within the social context to create value that maximises the likelihood of successfully creating a new venture.

The lack of complementarity between [HC] and [SC] models contradicts with the sociological theory (Coleman, 1988; Sanders and Nee, 1996), which argue that the interaction between social and human capitals is manifested in complementary forms. The findings in this study confirm the network compensation hypothesis (Bruderl and Preisendorfer, 1998), implying that 'scarce time can either be devoted to accumulating human capital or investing in social capital … the hypothesis suggests that there should be a significant negative correlations between indicators of human and social capital' (Rooks et al., 2011). In other words, the interaction between social and human capitals is more likely to take the form of substitutes rather than complements where nascent entrepreneurs compensate for shortfalls or lack of relevance of one type of capital by

looking at alternative forms of capital that aid them in mobilising resources at their disposal to bridge gaps, develop and extend existing knowledge in different forms.

This also agrees with the network compensation hypothesis advanced by Bruderl and Preisendorfer (1998), asserting that 'entrepreneurs with a less favourable human capital profile and with restricted financial resources struggle harder to mobilise their social contacts and receive more support out of their network'. This is also consistent with Davidsson and Honig's (2003) empirical findings in which general and specific human capitals were substituted by social role models to enhance the ability to solve problems during the start-up process.

According to Bruderl and Preisendorfer's (1998) hypothesis, entrepreneurs who lack resource endowments of credentials and financial capital tend to invest in extending their social capital. However, it is worth mentioning that the majority of nascent entrepreneurs in this sample attained an educational level of university degree or above and therefore the unfavourable condition of their HC may lies in its lack of relevance and scalability within the context of new venture creation, where social capital may acts as an alternative corrective factor that brings relevance to the existing knowledge, inspires, and promotes learning and self-efficacy. The results of the present study seem also to indicate that human capital has no bearing on access to social support. The empirical evidence here denies the assumption that entrepreneurs with higher levels of education are more likely to access social capital as opposed to less educated counterparts, and hence the findings refute the notion that human capital tends to promote the intrinsic ability of entrepreneurs to access and deploy social support, information and aspirations in a way that maximises value and propensity to achieve success (Cohen and Levinthal, 1990; Bosma et al., 2012). The study's findings instead appear to agree with Coleman's (1988) and Putnam's (2000) works in which they argued that individuals endowed with a high stock of human capital tend to accumulate and access less social capital due to their professional commitments that impede effective interaction within their social spheres, and therefore restricts their social intelligence. In the context of the present study, there appears to be some limitations and patterns of accumulation in human capital that hinder the effective interaction with social knowledge and in turn influence their integrative potential negatively.

At practical level, when there is a poor connection between nascent entrepreneurs' knowledge and their relevant social spheres, then the focus on increasing one type of capital would do little to reverse the dearth in the other type of capital, resulting in a (-) effect upon the outcomes as reported in the [HC - SC] combined model. In other words, further accumulation of human capital

can detrimentally escalate social exclusion, blocking social skills and nascent entrepreneurs' ability to convey social cues and shared meanings, resulting in the undervaluing of skills and credentials embedded in human capital. It is also evident from the previously reported findings that this social exclusion appears to take place at a business network level. Nascent entrepreneurs' reliance on the social support provided by socially closed networks, therefore, induces (-) effects due to the familiarity effect that could embody inimical effects on entrepreneurial judgement.

From a social perspective, Peterman and Kennedy (2003) argued on the basis of career socialisation theory that knowledge acquisition takes place in a social context and this context fosters individuals' desire to pursue entrepreneurial opportunities concurrent with their learning experience. Following this path of thinking, we also propose that human capital is an influential factor impeded in the social context, but human capital exposure to the social context may be associated with adverse effects that hinder entrepreneurs from creating or extending the knowledge in a way that maximises value. Therefore, the findings emphasise to a certain extent but not conclusively that the interaction effect between social and human capitals encourages marginal substitutability as opposed to complementarity. It should be borne in mind that the aim of the present study is not to assert the nature of the relation (i.e. complementability or substitutability), but rather to explore their interaction effects and their impact upon business launching outcomes.

The above finding confirms the hypothesis **H5c:** The combined effect between human and social capitals is a stronger predictor of Nascent Entrepreneurship success than linear models. Therefore, the findings reported in the sections above, which confirm H5a, H5b and H5c, also provide confirmation of **H5:** The combined effects of start-up capital's attributes is a stronger predictor of Nascent Entrepreneurship success than linear models.

Table 6.12: Sumarry for [HC X SC] Interaction

Main effects		**Interaction Terms outcome [HC] X [SC]**	
○ General Education ○ Social Skills	+ +	General Education X Social Skills	-
○ Supervision Experience ○ Social Skills	+ +	Supervision Experience X Social Skills	-
○ Supervision Experience ○ Social Support By Non owners/Non startup team	+ +	Supervision Experience X Social Support By Non owners/Non start-up team	-

Table 6.13: Logit Estimates for [HC X SC] Integrated Model

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Interaction Terms					
General Education x Social Skills			-.196* [.126] .822		
Supervision Experience x Social Skills				-.158* [.087] .854	
Supervision Experience x Social Support by Non-owners/Non-Start-up team					-.429** [.205] .651
Constant	-2.543 [1.641]	-3.472 [2.372]	-5.116* [2.648]	-4.079* [2.399]	-4.004* [2.414]
No. Of Nascent Entrepreneurs	816	816	816	816	816
Nagelkerke R Square	33%	45%	45%	45%	45%

- Model 1-2: The individual variables for [HC] and [SC] (Model 1) and the individual variables combined with controls (Model 2). The coefficients of Models 1-2 are omitted to make reading the table easier.

- Model 3-5: Interaction effects between [HC-SC]. The complete model (including the individual variables for HC and SC) was estimated for Models 3-5, but the coefficients for the individual variables were omitted to make reading the table easier.

- The numbers in the table are presented as follows: coefficients; standard errors in parentheses; odd ratios.

[2] S.E. the standard error of the coefficient
[3] Exp (B) is the "odds ratio" of the individual coefficient. Odds ratio is a nonlinear transformation of the logit coefficient, so the confidence interval is asymmetric
[4] R2 statistic. It is the proportion of the variance in the dependent variable that is explained by the variance in the independent variables.

- *p < .10 (two-tailed); ** p < .05 (two-tailed); *** p < .01 (two-tailed) [1] B the estimated logit coefficient
- Industry dummies were included to control for unobservable industry specific effects.

Summary

A major pattern in the results is that linear analysis of start-up capital's attributes explains relatively little of new venture creation success. By contrast, start-up capital's attributes that are operationalised within an integrative-dynamic perspective were confirmed as more consistent predictors for the success/failure of nascent ventures. Therefore, despite the significance of different forms of start-up capital's attributes, but their linear effects may get partly concealed because different nascent entrepreneurs vary in their abilities to combine optimum set of resources and dynamics to fulfill the completion of new venture creation process.

To this end, we believe that the kind of integrative discussion of new venture creation we've introduced here, and the empirical insights gained in the process, will provide assertion that the accumulation and the integration of start-up capitals' attributes in different forms is the catalyst that stimulates nascent entrepreneurs' composite acts, equip them with a dynamic mindset and aid them in sustaining the new venture's founding momentum that ultimately support the successful transition for the business from the nascent to operational stage. The study confirmed the relevance of cognitions as important entrepreneurial resource and indicated that the cognitive and the dynamic approaches (Moderation analysis) to Nascent Entrepreneurship represent the cornerstone of the integrative perspective and are therefore conducive to our understanding of social and human capitals.

Cognitive capital is shown in these findings to be a significant moderator with the highest predictive power and number of predictors compared to other forms of capitals. This attests to the thesis' premise regarding the importance of cognitive capital in creating combinations and possibilities that are necessary to explain the outcomes attained in the new venture creation process. We do not only have an idea of how relevant various forms of start-up resources are but also how their effect works. This provides strong evidence for the connection from resource endowments to process dynamics and ultimately to venture outcomes.

In summary, a complex web of dynamics, forces, cognitions, and behaviors catalyzes start-up capital-new venture creation relationship. While appreciating the many factors that govern the processes through which a nascent venture may be created (or not created) and through which knowledge emerges, our model principally attempts to synthesize these theoretical and empirical views to provide a more comprehensive understanding of the effects on the start-up capital–new

venture creation outcome relationship. When considering the recursive nature of this relationship, coupled with the complexity of multilevel effects (linear and integrative effects) of different antecedents and moderators, we find that the application of the integrative model to all levels of analysis was both parsimonious and necessary to foster our understanding of the determinants of success in Nascent Entrepreneurship.

Table 6.14: The Results for Hypotheses Testing of "Start-up Capital" linear Modeling

Linear Modelling*	Hypothesis Description	The Result of Hypothesis Testing
"Start-up Capital" linear Models (Main Effects)		
[HC] - linear Model	**H1:** Human capital has a significant (+) prediction on the outcome of new venture creation process.	**Confirmation for the existence of significant main effects [Refer to Tables: 6.3,6.5,6.7]**
	H1a: General human capital has a significant (+) prediction on the outcome of new venture creation process.	
	H1b: Specific human capital has a significant (+) prediction on the outcome of new venture creation process.	
[SC] - linear Model	**H2:** Social capital has a significant (+) prediction on the outcome of new venture creation process.	
[CC]- linear Model	**H3:** Cognitive capital has a significant (+) prediction on the outcome of new venture creation process.	
*** The models using each nascent entrepreneurial capital attributes independently**		

Table 6.15: The Results for Hypotheses of the Integrated Modelling

Interaction Terms	Hypothesis Description	Results of Hypothesis Testing
Integrated Modelling (I): [HC] [SC] [CC] X Process Dynamics [PD]		
[HC-SC-CC] X [PD]	**H4:** Nascent entrepreneurial process (New Venture Creation) dynamics moderate the relationship between the start-up capital's attributes and the outcome of new venture creation process.	**Confirmation for the existence of significant interaction terms** [Refer to Tables: 6.3; 6.5; 6.7]
[SC] X [PD-Moderation]	**H4b:** Nascent entrepreneurial process (New Venture Creation) dynamics moderate the relationship between **social capital** and the outcome of new venture creation process.	
[CC] X [PD-Moderation]	**H4c**: Nascent entrepreneurial process (New Venture Creation) dynamics moderate the relationship between cognitive capital and the outcome of new venture creation process.	
Integrated Modelling (II): "Start-up Capital" Interactions		
[HC-SC-CC]	**H5:** The combined effects of nascent capital's attributes have higher predictive power over the main effects generated in the start-up capital's linear models.	Confirmed
[HC] X [CC-Moderation]	**H5a:** The combined effect between human and cognitive capitals is a stronger predictor of Nascent Entrepreneurship success than linear models and moderated by cognitive capital	Confirmed [Refer to Table 6.9]
[SC] X [CC-Moderation]	**H5b:** The combined effect between social and cognitive capitals is a stronger predictor of Nascent Entrepreneurship success than linear models and moderated by cognitive capital	Confirmed [Refer to Table 6.11]
[SC] X [HC]	**H5a:** The combined effect between human and social capitals is a stronger predictor of Nascent Entrepreneurship success than linear models.	Confirmed [Refer to Table 6.13]

Chapter 7 Contributions and Conclusions

7.1 Introduction

The aim of this chapter is to present the empirical and theoretical contributions to the Nascent Entrepreneurship literature and make conclusions by linking the findings with the research aim and questions, thus validating the holistic framework presented by the conceptual model. Therefore, it is proposed that the empirical analysis based on the conceptual model attained the objectives of this thesis by drawing from theories of capital to explore the impact of entrepreneurial capital on the outcomes of new venture creation process. As the success of nascent ventures is largely predicated on their capacity to combine and tap into different resources, theories of capital particularly, entrepreneurial capital, offer a relevant theoretical framework for exploring how nascent entrepreneurs attain success. Clearly, the proposed empirical typology of nascent entrepreneurs' start-up capital attributes and the conjectural causation embedded in the hypothetical links between start-up capital – process dynamics and new venture founding provide new notions and novel contribution into new venture creation and postulate promising avenues for linking the entrepreneurial capital theory with the reality of venture emergence as well as the true capabilities of nascent entrepreneurs.

The findings confirmed the relationship between nascent entrepreneurial capital – process dynamics and new venture creation outcomes. Specifically, there is an interplay involving human, social, cognitive capital, and process dynamics that generate the entrepreneurial capital relevant for distinguishing nascent entrepreneur's ability to found a new venture. This demonstrates that nascent entrepreneurs capitalise on their prior knowledge by finding the best fit between resources and the founding circumstances. The adopted integrated-dynamic approach showed reversal in the magnitude and direction of significance for the main effects of start-up capital's attributes in the linear modelling. This explains how different forms of capital may be accompanied by other factors that affect how the nascent entrepreneurial process evolves into success or failure; highlighting that the approach chosen by nascent entrepreneurs in founding a new venture is a complex multi-layered process largely contingent on the integrative and dynamic context in which the actions are taken. This suggests that a re-consideration for how researchers in entrepreneurship conceive nascent entrepreneurial capital is of central importance.

Nascent entrepreneurial capital acts as the collection of combined resources, and competencies –

derived from human, social and cognitive capitals – that nascent entrepreneurs possess and can capitalise on as they pursue the business founding efforts. The findings in the present study indicate that start-up capital's attributes are most appropriately portrayed by not only considering their sources but also comprehending how such sources are interrelated and combined to derive value. Apparently, this agrees with Eriksons' (2002, p.277) view that'[e]ntrepreneurial capital is treated as a heterogeneous resource, consisting of a set of complementary capacities [that] can be regarded as the present value of generated future entrepreneurial behavior'. Also the finding agrees with Dimovs' (2017, p.223) view that:

> *"the term "capital" is misleading as it superimposes a notion of a homogenous medium that is characterized largely by its amount, just like financial capital [therefore] The time has come to acknowledge the limits of the capital analogy and consider that the human application deals with different dimensions… thus various knowledge and skills can amount to qualitatively different capacities depending on the individual experience of which they are composed."*

In the next sections, the study elaborates on the concluding remarks of this study. At the end of the chapter, limitations of the present study and recommendations for future research in Nascent Entrepreneurship theory and practice are presented.

7.2 Theoretical Contributions – Linear vs. Integrative Approach

The findings discussed in the previous chapter provide considerable evidence for the proposed conceptual model and made contributions to several strands of the new venture creation literature. This has implications for Nascent Entrepreneurship theory and practice as the research provides insights into the conceptual framework and lays the groundwork for proposed recommendations based on our understanding of the implications associated with new venture creation both practically and theoretically. Nascent Entrepreneurship and the success factors underlying this phenomenon is a complex area of study mandating a comprehensive understanding of existing theories in different domains. A clear implication for Nascent Entrepreneurship theory building is the potential for interdisciplinary research between cognitive science, sociology, business management and economics. The findings suggest a strong relationship between these fields and the concept of Nascent Entrepreneurship. Integrative models based on these disciplines could substantially contribute to our understanding of the factors that differentiate success from failure of new ventures at different stages, growing the body of knowledge in entrepreneurship at the early and mature stages of development.

PSED-based research has made many serious contributions to the understanding of Nascent Entrepreneurship. However, it has so far probably produced fewer crystal clear answers about what derives success and how to interpret outcomes. It is to some extent ironic that the theories and data used so far in PSED-based research perform comparatively poorly for explaining outcomes among nascent entrepreneurs. To a substantial extent this is attributed to the complexity and the genuine difficulty of Nascent Entrepreneurship research stream. The findings of the present study indicate that there is an opportunity for theory development that should broaden our understanding of how the nascent venture is positioned in the individuals' totality of resources and dynamics.

Therefore, the proposed model tested an integrated framework for Nascent Entrepreneurship and attempted to help researchers recognise the relationship among the multitude of necessary but insufficient factors that comprise this stream of research. An extensive review of the literature aided the development of the conceptual framework derived from the hypothesis testing, and considered the main novel contributions of this study. The contributions here do not rely solely upon what constitutes successful Nascent Entrepreneurship. Rather, the advances in knowledge herein are linked to the discussion of the nature of interactions and dynamics that improve our understanding of the potential contributors and limiting factors to launching new ventures. The novel insights are discussed in the next section.

Novel Theoretical Insights

Our research offers intriguing and novel insights in that regard, showing that having knowledge, experience and competency is generally good, but revealing that being too dependent on isolated prior knowledge seems can be harmful. More specifically, the findings suggest that heterogeneous knowledge with an overall low level of depth or breadth may perform better compared to knowledge comprised solely of highly experienced founders.

A main contribution of this research has been the revealing of a prevalent trend in the field — the use of large secondary datasets within an integrative perspective. More importantly, the study contributes to a better understanding of nascent entrepreneurial success model, whilst its empirical suggestions also contribute to a better understanding of the PSED database. It extends extant research in entrepreneurship by looking beyond linear indicators of the entrepreneurial success at early stage of new venture development and contributes to the evolving entrepreneurial process perspective in dynamic-integrative entrepreneurship research (i.e. Gordon, 2012). We reviewed how the entrepreneurial process– both the dynamic and integrative view – highlights the different

quality of the nascent ventures in relation to different resource endowments. We also reviewed empirical evidence showing that nascent entrepreneurship capture different phenomena – they have different predictors and correlates and there are substantial differences in the findings between linear and integrative approaches. Indeed, the creation of new ventures is one of the most important decisions to make in entrepreneurship.

While Bourdieu (1986) has drawn attention to both the interplay between various forms of capital and the convertibility of capital, these notions have received little attention in the extant entrepreneurial capital literature. To date, studies of entrepreneurial capital have ignored the dynamic interrelationship between different forms of capital and overemphasised the impact of individual capitals on the entrepreneurship process. Therefore, the research confirms the limitations of the linear approach, and alternatively suggests how different combinations of resources and dynamics can translate into a knowledge base and entrepreneurial abilities that facilitate or impede the transition to an operational business. Our aim in the present study was to establish an interpretation of entrepreneurs' actions and behaviours at the nascent stage and how their utilisation of knowledge and mobilisation of endowed resources within the linear and integrated perspectives might limit or promote the potential for launching a new venture. This analysis more clearly delineates the boundaries of start-up capital's attributes, contributing to their respective literatures. It was incumbent upon us in the undertaking of this study to avoid early approaches in entrepreneurship research that had a preference for viewing the business formation phenomenon as a series of isolated components.

The integrative-dynamic approach,therefore, leads to more theoretical clarity regarding the effects of human, social and cognitive capitals — they are not of themselves consistent predictors of new venture creation outcomes. This in turn provides valuable contribution to theory, as it expands the body of knowledge on the phenomena of nascent entrepreneurial capital in entrepreneurship. The study in this sense contributes to the literature on nascent entrepreneurship by elucidating important entrepreneurial characteristics that enable nascent entrepreneurs to conclude the founding process of new venture.

First, it speaks to recent literature that has increasingly turned to the emphasis on financial capital in the nascent entrepreneurship context. This offers a new twist to entrepreneurship literature about start-up capital and, in particular, cognitive capital and process dynamics as performance drivers. We also advance existing research on success probabilities of nascent entrepreneurs with different resource endowments (Schjoedt, et al., 2013; Wilson, et al., 2013) as we illuminate how nascent

entrepreneurs with either strong or weak entrepreneurial capital differ in terms of nascent venture outcomes; specifically, while nascent entrepreneurs with strong cognitive capital perform best, we find that nascent entrepreneurs with human capital and social relations, having positive or negative main effects only implies comparable performance with limited significance. This offers new insights to researchers exploring the determinants of nascent venture success and also represents an instance of a more fundamental phenomenon. In this phenomenon, nascent entrepreneurs vary in how they make distinctions among information in their business surroundings, and those distinctions have further implications for how nascent entrepreneurs deploy resources and react to the evolving conditions embedded in business environment. By exploring distinction making as a dynamic-integrative mechanism for new venture creation, the study becomes part of a broader investigation into how entrepreneurs realise their business surroundings, and how those realisations impact entrepreneurial outcomes at early stages of business development.

The study in this sense seeks to inspire a conversation about the nature of success in the earliest stages of the entrepreneurial process. It articulates nascent entrepreneurial capital as a more proximate, guiding factor in the new venture creation process, and this appear to suggest a more nuanced link between the nascent venture's potential, as afforded by the startup capital's characteristics, and their actual realisation. This in turn distinguishes the dimensions of the entrepreneurial capital to highlight their linear and nonlinear effects on new venture emergence. While the extant literature tends to treat startup capital as a monolithic construct that can be interchangeably captured by various knowledge (experience)- based proxies, the current study elucidates the different interactions that can emerge from entrepreneurial process relevant to the opportunity at hand.

This theorisation contributes to nascent entrepreneurship research by revealing that a more differentiated perspective needs to be adapted for investigating startup capital. When predicting the success or failure of nascent ventures, entrepreneurial start-up capital does not impact outcomes independently of other elements. Knowledge, experience and skill management occur not only in the context of an individual, but also within the connection between factors (Argote, et al., 2003). This theorisation confirms the heterogeneity of nascent entrepreneurial capital, and in turn extends the theorisation of RBV theory, conceptualizing nascent entrepreneurial capital as a set of heterogeneous resources involving different reconfigurations among the components (resources and dynamics) that constitute the process of creating a new venture. Therefore, the implication for future research is to examine preferably three indicators simultaneously – i.e. the resource

endowments of nascent entrepreneurs, the process dynamics as well as the intervening factors – to develop a better understanding of this important early stage of the entrepreneurial process.

Second, the findings challenge the traditional perspective and the generally prevailing notion of more resources leading to success. This indicates that stronger start-up capital's attributes in the sense of more of each is better are not necessarily the best perspective to explain nascent entrepreneurial outcome. In fact, the study confirms that important non-linear effects exist and influence nascent venture performance. The non-linear effects reported in this study explain previously contradicting outcomes and posit that research need to take a closer look at startup capital attributes and should pursue additional analyses to reveal the intervening effects of other factors in facilitating the relationship between startup capital's attributes and entrepreneurial outcomes. This theorisation highlights that nascent entrepreneur's resource endowments can turn into assimilation of new experiences when the existing knowledge structure is refined in the context of integration and dynamic action (Holcomb et al., 2009; Haynie et al., 2012). Put differently; as nascent entrepreneurs integrate venture-specific knowledge, learning occurs (Corbett, 2005) as the emerging and integrated set of experiences cause a transformation of existing knowledge in its isolated form, leading to an updated judgment (refined causal map) and deep understanding of what combinations are likely to lead the resolution of the nascent venture.

In particular, the findings yielded by this study provide first insights into the combinations that conceptualise the best set of resources that lead to the completion of the entrepreneurial process. The research presented here shows that integrated knowledge between cognitive- social capital as well as cognitive- human capital would result in enhanced entrepreneurial performance, and ultimately higher chance to complete the founding process. Even nascent entrepreneurs with an overall low but heterogeneous level of knowledge perform better than nascent entrepreneurs with an intense set of knowledge or experience at individual level —a finding of particular relevance for researchers.

In more specific terms, the empirical analysis generated critical insights that can inform our abstract understanding of resource endowment in the context of Nascent Entrepreneurship. The findings confirmed the predictive power of the linear start-up capital's attributes in differentiating the outcomes of the new venture creation process with varying magnitudes and directions of significance (mixed results). Among those predictors, the most influential are the cognitive factors, while [HC] and [SC] linear models had comparable significance upon the outcomes attained in the process of new venture creation. This partly answered the question of what are the start-up

capital's attributes that maximise nascent entrepreneurs' likelihood of transitioning the new venture into an operational business. However, the findings provided discernible clues that the main effects of endowed resources are not definite measures of success in Nascent Entrepreneurship, and that new venture creation is confirmed to be something different from the sum of its parts. Drawing on Erikson's (2002, p.287) suggestion that '[r]esearchers in entrepreneurship should consider interaction effects, as not all relationships may be additive', the present findings simply add to the on-going debate that surrounds what would appear to be an intuitively obvious connection by exploring the complex nature of nascent entrepreneurial process.

The review of the extant corpus of knowledge on Nascent Entrepreneurship also indicated that existing models overemphasise the linear effects of resource endowment (Parker and Belghitar, 2006) in isolation from other forms of capital (i.e. Davidsson and Honig, 2003; Liao and Welsch, 2008; Samuelsson and Davidsson, 2009). Manifestly, the main effects of the present study failed in the majority of cases to remain stable predictors of success or failure in the interaction cycle with the founding process. This reflects how the main effects of start-up capital's attributes at linear level are not stable mechanisms and are plastic in the exploitation process that make a minimal contribution to the rigour and consistency of the predictions. The inconclusive effects produced in the linear modeling for the start-up capital's attributes suggest that higher or lower level and use of capital's attributes do not guarantee success at Nascent Entrepreneurship (Ehrlinger et al*.,* 2008). Rather, the direction and magnitude of significance of these attributes would matter in accordance with the type and nature of interaction. This agrees with Gist and Mitchell's (1992) notion that resources are necessary, but not sufficient, conditions for success.

As stated earlier, over-reliance on prior knowledge in its linear form and in isolation from other forms of capital and dynamics can make nascent entrepreneurs susceptible to narrow or wide frames of thinking, underestimating or overestimating the business venturing conditions. Main effects appear to determine the path of entrepreneurship that nascent entrepreneurs follow in founding their new ventures by equipping them with the required confidence, mindsets, foundation and resources. However, the acquisition of knowledge in the linear form is insufficient if they do not know how, when and where to employ them. Prior empirical research that incorporated resource endowments following this approach appears to under- or overstate their underlying value to Nascent Entrepreneurship, trammelling our perception of how the many facets of start-up capital's attributes can evolve, affecting the new venture creation process outcome.

Therefore, some researchers (i.e. Evans and Leighton, 1989; Lazear, 2005) have posited that the

value of human capital investment might not be evident in the depth and quality of credentials, but later on, it may generate success that correlates with the generation of productive outcomes in terms of knowledge diversity, variety of skills and different tastes for knowledge and experiences that lead to the emergence of entrepreneurial ability and in turn productive outcomes. This also suggests that highly productive resources in their isolated form can often constrain the ability of the nascent entrepreneurs to recognize and respond to novel and emerging circumstances of new venture creation process. Therefore, it is possible that the existence of resources in their isolated form can have biased effects on nascent ventures, such as cushioning them from the realities of the business venturing experience (Barnett and McKendrick, 2004; Ries, Eisenmann, and Furr, 2010).

Indeed, overlooking the integrated perspective can result in less discernible and more inconsistent links between start-up capital's attributes and the ultimate venture's outcomes in the process of creating new enterprises (Davidsson and Honig, 2003; Honig and Karlsson, 2004; Rotefoss and Kolvereid, 2005; Tornikoski and Newbert, 2007; Brush et al., 2008b; Samuelsson and Davidsson, 2009; Dimov, 2010; Townsend et al., 2010; Dimov, 2017). The lack of consistency is confirmed in this study, and indicates that the focus on main effects of the antecedents (Start-up capital's attributes) limits the research's attention to the attributes that mainly exist within divergent boundaries that reassemble the founders' prior knowledge, resulting in a reduction in understanding of the dynamic-interactive capability inherent in endowed resources. Instead of focusing on merely linear relationships, the findings here indicate that conceptualizing and measuring moderating/interaction processes is one of the most valuable ways to help researchers explain why start-up capital's attributes matter to nascent entrepreneurial success, not only that start-up capital's attributes matters to new venture.

In sum, the second point suggests that the relationship between startup capital's attributes – process dynamics and new venture creation outcome is significantly related, although the relationship is weak for some aspects at the linear and integrated levels. The study concludes that the relationship between [start-up capital's attributes - process dynamics] and the [start-up capital's attributes – cognitive capital] leverages the propensity for action, and this, in turn, improves the probability of concluding the process of new venture creation. The dynamic-integrative perspective appears to enable both the prompt grasp of complex conditions when they are first presented, the capacity to more easily comprehend the interrelated relationships, and the ability to forecast the possible directions that any entrepreneurial actions might trigger. This implication challenges many accepted boundaries and models found within the static-linear-descriptive view of

venture creation research. The perspective advanced here is that different forms of nascent entrepreneurial capital provide the foundation for the integrative-dynamic framework and that is fundamentally more important for the success of nascent entrepreneurs than accumulating knowledge. Start-up capital attributes provide the initial foundation for the nascent entrepreneurial capacity. Through a variety of interactions among those resources, the nascent entrepreneur develops integrated knowledge about the venture's real potential (West and Noel, 2009) and their real ability of launching a new venture. In this line of reasoning, West and Noel (2009) argued that research requires synthesis of different resources to attain greater understanding of the state of knowledge that prepares nascent or potential entrepreneurs for the launching process of new venture.

Apparently, the isolated pieces must be put together in order to reveal the whole (state of knowledge). These findings highlight how theorizing the integrated effects of start-up capital's attributes and related dynamics on the outcomes of new venture creation process can significantly enrich Nascent Entrepreneurship theory. This in turn provides an illustration of how linear approach may differ from the integrative approach, and suggests directions to revisit our approach to theory development and testing. Certainly, new venture creation at pre-star-up stage is a challenging endeavor, given the unstable and harsh conditions of the business-founding environment. These challenges demand that nascent entrepreneurs develop dynamic mechanisms to allow their nascent venture to withstand the pitfalls and attain important milestones in the business launching process. This logic supports the RB theorization of new venture creation, indicating that resources are heterogeneous (Barney, 2001) and that success or failure in lunching new venture will depend on the heterogeneity of endowed resources. Therefore, some fit must exist between resources and the new context in which the new venture found itself. In other words, for nascent entrepreneurs to attain success they must seek to create the optimum resource fit by integrating the resources with the evolving experiences involved in the start-up process. The findings in this line of reasoning indicate that the acquisition of different forms of capital may aid them to progress and may also become a source of motivation; however, it may not necessarily warrant success as confirmed in the present study.

Third, the study offers insights into the role of process dynamics in nascent entrepreneurship, reflecting the unfolding promise of the new venture creation, as practiced and perceived by the nascent entrepreneur in reality, and thus constitutes a gateway to the continuation or abandonment of the founding efforts. Most theories of start-up resources do not investigate the combined effect

of the different forms of capital and their dynamic nature. This omission is somewhat puzzling, since understanding the value of start-up capital is more than the mere presence of resources. This was confirmed in this study, indicating that studying start-up capital's attributes in their isolated form restricts our perception of how the many facets of the Nascent Entrepreneurship phenomenon can evolve to make meaningful contributions (Kogut and Zander, 1992). The implication is that, though some types of start-up capital's attributes in their mere forms might not be particularly helpful, but putting these attributes in the dynamic-integrative approach can make the difference.

The study's implications suggest that the dynamic perspective is of equal importance, where we depart from the earlier focus that views entrepreneurial process as a series of sequential events, and alternatively conceptualise the process as an iterative process – introducing new dynamical aspects (i.e. dynamic learning, conceptual changes) that go beyond the conventional measures of the process (rate and intensity of gestation). This in turn provides an important piece of information in exploring the determinants of nascent entrepreneurial success. This has important implication that different forms of startup capital will associates with different dynamics and combinations, and this will lead to different effects. The study theorises the evolving nature of the nascent entrepreneurial process by providing richer insights on the process dynamics and their influential aspects in a nascent venture setting. Process dynamics generate the relevant entrepreneurial capital that distinguishes nascent entrepreneur's capacity to conclude the process. Process dynamics resemble entrepreneurial resources in action, providing the propensity for action and accordingly, they are best theorized as intervening variables (moderators) that explain the relationship between the entrepreneurs' resource endowments and the outcomes attained in the process of founding. For example, some combinations might generate important predictors for the decision to become a nascent entrepreneur, but might be less important for making progress in the venture creation process, and not important for business success.

This approach suggests that the boundaries between these dimensions are not solid and clear as they appear at first sight. Many resource-dynamic associations allocated to one phase can spill over into another with new value (effect). This in turn suggests that the creation of the new venture's competitive advantage can start in the nascent phase, the learning is also significant in the nascent phase, and the evaluation of the business opportunity is arguably not limited to the post-nascent phase but is likely to continue as the entrepreneurial process proceeds. Thus, while the future indeed cannot be contained within static resources, dynamic and interactive exploration of the entrepreneurial opportunity can provide a basis for more informed understanding and timely

termination of venturing efforts with poor prospects. Therefore, the dominant association of resource endowments with the attainment of entrepreneurial outcomes needs to be balanced with the notion of dynamics as a learning tool for the nascent entrepreneur. The resource-dynamic theorisation suggests that the set of start-up capital's attributes in nascent ventures is dependent on the entrepreneurial capacity to exchange and share the experiences, relations, information and knowledge through the instrumental benefits of process dynamics.

Thus, the third point emphasises that the contribution to the literature of this empirical study is the suggestion that more focus should be placed on the conceptualisation of success/failure in business launching process, showing the inherently complex interactions. This suggests that it is important to understand how individual perspectives on the start-up capital's attributes translate into a holistic understanding triggering collective and informed action. The integrative model substantially improves the predictive power with regard to the outcome of the Nascent Entrepreneurship process, confirming that using the dynamic approach is preferable and more beneficial for the purpose of predicting and explaining the founding success or failure. Moreover, it indicates that the transformation of resource endowments (start-up capital's attributes) into applicable knowledge is associated with dynamic nature, asserting that the relationship between new venture creation success and resource endowments is not a direct relationship, but a complex one. Evidently, there are divergences within the knowledge base triggered by different resource-dynamic combinations, and therefore the present study concludes that success in establishing new ventures relies on a broad range of elements and that the linear start-up capital's attributes in different forms (i.e. human, social, cognitive and physical capitals) are only one part of the wider picture. For a more convincing and robust test of the Nascent Entrepreneurship success argument, it is necessary to have an integrative model that accounts for combined/moderated influences on the success of nascent ventures. Therefore, it is clear that new ventures are unique not only through the endowments of nascent entrepreneurs, but more importantly through the combination of resources that are combined together to found a new venture. This answers the empirical question of whether or not the integrative model that embodies the determinants of successful Nascent Entrepreneurship yields higher predictability than the linear models that constitute the nascent entrepreneurial capital.

Fourth, a growing stream of research argues that the sentiments of individuals can have an influencing bearing on their capacity to found and grow their ventures (Baron, 2008). The study we present herein responds to the call to explore more cognitive effects of the entrepreneur's

behaviors in more depth (i.e. Shepherd, 2015), and address the methodological call to take advantage of PSED longitudinal datasets (Davidsson and Gordon, 2012). The study provides theoretical assertion that cognitive capital is a key component of startup capital's modeling, where the advantages of cognitive capital appear to be as central to the success of nascent entrepreneurs as more accepted forms of startup capital. The study also theorises cognitions as highly relevant moderators between startup capital attributes and entrepreneurial outcomes for nascent ventures. This theorisation suggests that cognitive capital may endow nascent entrepreneurs with the mental capacity necessary to deal with the limitations in other forms of capital as well as the adversities inherent to the new venture creation process. Accordingly, they often would rely on their cognitions to bridge the missing gaps. This state of affairs tends to be especially prevalent in entrepreneurial contexts, whereby tactical actions must be made on timely basis. Hence, the theorisation of cognitive capital tends to act as a key element in determining why some nascent entrepreneurs, but not others, are capable to persist and found new ventures with limited expertise.

In summary, the detected limitations of resources at the linear level explain why some start-up attempts will be successful despite the founders' limited knowledge in different forms, while, other attempts will be unsuccessful even if there is an extensive resource endowment. Also, some founders may have comparable bases of knowledge and resources to others, yet differ in their ability to achieve success. All these observations indicate that nascent entrepreneurs who are endowed with a strong base of capital's attributes but lack integrative competency are more likely to experience limitations and inconsistencies in coping up with the founding dynamics and may engage in coping mechanisms, fitting the experience of business venturing (reality) to their prior expertise. Start-up capital's attributes are more valuable if they are adapted to the context of the venture under creation, rather than trying to fit the business-venturing context to the size of prior knowledge and experiences.

The integrative model explored different combinations that helped answer the empirical questions of how the integrative model of nascent capital improves the predictability of new venture creation outcome, what the capital's attributes and process dynamics are that moderate the relationship between the linear capital attribute and the outcome of the new venture creation process, and why nascent entrepreneurs who are endowed with comparable bases of knowledge tend to differ in their abilities to found new ventures. The integrative model suggests that for

start-up capital's attributes to take on a new aspect, a new way of looking at things should be considered by combining resources and observing their extendibility and mobility. The interaction with other capital's attributes and process dynamics could neutralise the deficits associated with the isolated thinking by tapping start-up capital's attributes in a complementary context that leverages the entrepreneurs sense of business reality. The findings in the integrated model suggest that nascent entrepreneurs who tend to fail in attaining success are the ones who have limited tactical experience of creating synergy among endowed resources and the context of business venturing and its inherited dynamics. This limitation impedes their entrepreneurial ability to advance, coordinate and integrate existing knowledge in different forms within a coordinated context.

The lack of coordination make the process susceptible to homogeneity, conformity effects and instabilities that appear to hinder experimentation and the accumulation of solid knowledge, and consequently, disqualify nascent entrepreneurs from handling the novel conditions and dynamics surrounding the process of creating new ventures. However, as observed and discussed in previous chapters, the interaction context will not always succeed in bridging deficits and instead might expose disconnects between start-up capital resources and the business reality, leading to early withdrawal from the process of new venture creation, and this may reflect a level of rationality instead of failure. This is congruent with Barnet and Anderson's (2013) argument that the enactment of the process may positively reinforce certain individual attributes and negatively reinforce others (p. 309).

Clearly, start-up resources may appear to be incomplete predictors of venture outcome if not combined with transference mechanisms (dynamics, moderators, interactions), and thus can be considered less satisfactory in its contribution to theorisation. The findings in this respect suggest that it is not the knowledge and experience that matters most, but rather the nature and relevance of these attributes within the integrative-dynamic modeling. The failure of not addressing the integrated perspective results in an incomplete description of new venture creation. It is important to recognise that the influence of each element has a built-in tendency to shift its direction of significance depending on the level of entrepreneurial intelligence attained by different sets of resource combinations and configurations. What this means is that while there may be some initial advantage experienced by nascent entrepreneurs as they engage in accumulating stocks of knowledge, networking and variety of experiences, these stocks of knowledge, in reality, could be reinforced or alternatively outweighed by their interactions with other factors. This suggests that

assessing linear actions is fraught with uncertainty and what proves to be more robust and stable predictors of venture success in the nascent period are the integrated actions. This also intimates that the reality of business creation takes more than just having a stock of capital's attributes. To achieve success it may be a case of finding a middle ground between accumulating or investing in capital's attributes and putting these attributes in action.

To this end, this contribution is a first step and we encourage future research to refine our approach and to analyze determinants of the transition from nascent entrepreneurship to new operational venture. In the next sections, the study shed light on the theoretical contribution by focusing on the moderation perspective.

7.2.1 Theoretical Contribution: Moderating Perspective

Despite the progress in the literature studying the underlying factors of success, there is still a substantial research gap with regards to the moderating effects of endowed resources. In order to address this lacuna, the present study developed a conceptual model of new venture creation that extended current knowledge to include process dynamics and cognitive capital as the specific moderators between start-up capitals' attributes and the outcomes of new venture creation process. The finding provides strong support for this link. The founding dynamics and cognitive attributes were found to be predispositions to certain entrepreneurial actions and outcomes and acted as significant factors within the integrative model, reporting the highest predictiveness over the outcome of the new venture creation process. In terms of their relationship with venture emergence, the findings showed they were best conceptualised as moderating variables that play significant role in transmitting the linear effects of start-up capital and this implies their role in deriving coherent knowledge that facilitates improved outcomes, steering the new venture creation process towards completion. Therefore, instead of splitting forces between substitutive strategies and mechanisms, we need to focus more attention on coordinating actions that compensate for gaps, emphasising that the act of creating new ventures cannot occur in isolation from personal cognitions and founding dynamics. In this sense, nascent entrepreneurs with endowed resources should become more open to the business venturing experience by extending the boundaries of their existing knowledge and navigating new trajectories and possibilities for learning, hoping that it will serve as an effective crucible in which new ventures are created.

7.2.1.1 Start-up Capital – New Venture Creation Relationship: Moderation from Dynamic Perspective

Process dynamics were largely tested in the existing literature on the basis of intensity and pace of entrepreneurial actions, but in the proposed model and in addition to aspects considered elsewhere, we employed novel dynamics that relate to the dynamic learning and conceptual changes encountered during the founding process which were shown to play a significant role in moderating the relationship between the resource endowments and the outcome attained in the new venture creation process. The findings confirmed that process dynamics in different forms serve as the mechanism by which startup capitals' attributes are activated and also contributed to entrepreneurship process theory, indicating that process dynamics are vital determinants of the outcomes of new venture creation process. This discovery extends our understanding of how new ventures comes into existence. The findings in this respect were very encouraging and showed advantageous outcomes in many cases that were associated with the higher model's prediction. This indicates that the impact of start-up attributes manifest in successful new ventures that can set in motion a dynamic and self-energizing process. This has implications for the study of Nascent Entrepreneurship. First, the resource-dynamics interactions produce knowledge at different levels of perceptions that correlate with different patterns of actions, depending on the nature of the interaction (combinations) with start-up resources. Therefore, specific dynamics appear to interact with particular resources, where the dynamics drivers of positive outcomes are best presented by the gestation rate of action that also appear to best coincide with variables that relate to cognitive capital. The key assumption here is that cognitive sense making is tempered by more realistic evaluations as the nascent venture progresses and the entrepreneur is immersed in actual business challenges (founding dynamics).

Second, given the dynamic and unpredictable nature of the business founding that nascent entrepreneurs have to undergo, the process dynamics of learning, rate and intensity of actions turned out to be the most integral aspect in nascent entrepreneurial processes, and hence the most vital aspect to nascent venture success/failure. The process-resource combinations addressed the intrinsic dynamism of nascent ventures, and showed how start-up capital's attributes are accompanied by emerging dynamics that define their unique course of actions and ultimately distinguish the threshold between success and failure for nascent ventures. The interaction between start-up capital's attributes and process dynamics associate with varying effects, and this confirms the complexity of the process. It is also worth noting that the generated (-) interaction

effects may resemble rationality rather than failure. Research along this line of thinking continues to argue that '[i]t is naive to consider a terminated venture creation attempt purely a failure … [it] is in some sense a success as it minimises losses and provides learning for future venturing' (Gordon, 2012, p. 164). Moreover, the lack of conformity between the dynamic context and the endowed resources may cause a chaotic interpretation, confusion and escalated efforts that potentially make nascent entrepreneurs' less receptive to learning, or less efficient in their founding procedure, leading to (-) detrimental effects on the business founding outcome.

The findings demonstrate that nascent entrepreneurs should capitalise on their resources in a way that enables them to coordinate and integrate those resources by finding the best fit with business ventures' dynamics. This clearly agrees with Langlois' (2005, p. 29) view that it is 'certainly entrepreneurial to seize profit opportunities that fit in with a highly articulated structure of existing knowledge. But much of the sense of the term 'entrepreneurial' carries with it the implication of novel recombination that is somehow more radical, or at least less constrained'. As such, the idiosyncratic actions of nascent entrepreneurs within the dynamic cycle are likely to be more effectual in generating productive outcomes. This contributes to the emergent literature that takes a resource-based view (Teece 2007; Sirmon et al., 2007), confirming the dynamic nature of start-up capital's attributes and their role in the attainment of success. The resource-dynamic perspective portrayed new venture creation as a process of learning, change and knowledge creation that forge combinations that accelerate entrepreneurial learning, bridge gaps in prior knowledge, and shape the innate nature of the new venture. These then may also reveal unpredictable biases that tend to maximise nascent entrepreneurs' exposure to the risk of losing openness and becoming dysfunctional, leading to unfavourable outcomes.

The failure or successes in extending and integrating knowledge embedded in endowed resources (HC, SC, CC) are what determines nascent entrepreneurs' ability to transform knowledge into a propensity for dynamic action. The act of accumulating, extending and integrating resources in a process context is what creates coherent knowledge that promotes efficient and effective entrepreneurial judgement. This then leads to sensible actions in different contexts and circumstances, resulting in (+) or (-) progression. Indeed, the more interactions take place and the more engagements with the process occur, the more accommodation for changes and receptivity to learning will be enabled. As a result, more insights will guide the decision-making process (continue/quit the process). The findings confirm that the resource-dynamic perspective builds on the concepts of experimental learning (Kolb, 1984) and creative cognition (Ward, 2004), and

knowledge creation, which assumes that entrepreneurial learning is a contentious interaction between knowledge and process factors.

The dynamic perspective within the integrative modelling wrestled with countervailing effects and this suggests that the resource-dynamic interaction can be framed into a theory about a model of the determinants of success in Nascent Entrepreneurship. The present study found that [Gestation Dynamics] are a key determinant of new venture creation outcomes, Gestation aspects in terms of duration (rate of action) and efforts (intensity of action) are inherent aspects of the gestation dynamics and are recognised as by far the most important factors driving the venture through the nascent phase (Reynolds, 2007; Davidsson and Gordon, 2011; Kessler et al., 2012). The findings demonstrate that nascent entrepreneurs who have a higher rate of actions are more likely to make consistent progress in their patterns of business venturing and transition to the operational stage of entrepreneurship (Lichtenstein et al., 2007).

There is also supporting evidence from the present study that the rate of action, when combined with human and cognitive capitals, appears to induce maximum benefits that increase the propensity of action. The varying interactions between [Gestation Rate and Intensity of Action] and human, cognitive capitals indicate that the active engagement, high rate and early timing of actions could bring a new venture more rapidly through the entrepreneurial process, realising the true value of endowed resources [HC,CC] and in turn the substantial limits or potentials to pursuing the endeavour further.

The findings also indicated that the interaction between start-up resources (i.e. HC,SC) and the learning dynamics can produce emerging knowledge that associates with some drawbacks (Lane and Lubatkin, 1998). Nascent entrepreneurs appear to have a taste for success and failure. This seems to be associated with possible implications. For example one implication suggests that this taste for success and failure would make them inclined to the dominant logic resulting in the familiarity effect (the status quo) that appears to bias their entrepreneurial judgment and receptivity to learning especially if they rely on other forms of knowledge that lack the necessary breadth, depth and relevance. The sense of success and failure could also make nascent entrepreneurs prone to neurotic behaviour, where any sign of nonconformity between prior knowledge (HC, SC) and the business-venturing reality would result in either escalated efforts that lack synergy with the business reality or early withdrawal from the process to preserve the values and beliefs embedded in their dominant logic. This confirms Learned's (1992) theorisation that new venture creation is promoted by 'the accumulation of confirming or disconfirming evidence'.

Non-conformity arises as nascent entrepreneurs fail to learn and mobilise resources and apply entrepreneurial capacity in a dynamic way that aids them in extending knowledge, integrating perspectives, leveraging adaptability, mitigating familiarity effects, attracting diversity and eliminating gaps with business reality.

This, in turn, appears to obligate nascent entrepreneurs to conform to abstract norms, codes and rules extracted from the dominant logic as bits and pieces, and in isolation from the knowledge system as a whole. Isolated knowledge that fails to integrate into real time learning makes nascent entrepreneurs inclined to biased behaviours and information that affects their sense making, ability to interpret information, learn and negotiate with stakeholders. Consequently, they tend to become susceptible to develop cognitive biases in which they feel they have a prominent impact over the reality of the founding process, and this hinders their ability to learn and interact in a way that fosters success.

Clearly, dealing with the dynamics of the iterative learning experience in Nascent Entrepreneurship produced countervailing effects as it interacts with different forms of resources in the linear modelling. This require not only an understanding of the content and depth of knowledge but also, and more significantly, comprehending how knowledge embedded in different forms of capital accumulates and evolves as it is integrated with different contexts, circumstances and dynamic aspects (Markman and Baron, 2003; Hayton and Zahra, 2005). The findings in this respect indicate that the resource-dynamic perspective is an emerging knowledge that provides superior sight of one's interpretation of past skills, prior knowledge, experiences, and mental and emotional cues.

This amalgamated thinking and emerging knowledge also facilitates one's ability to identify and link patterns of actions that explain the emerging conditions and trends in the business venturing experience. Thus, in order for resources to be of strategic-tactical value, the exploited knowledge must be extended into a broader frame of action that enables better management for the emerging-dynamic knowledge of Nascent Entrepreneurship. These findings come in light of dynamic learning theory, suggesting that learning during new venture creation is inherently constructivistic in nature. This implies an iterative nature, where deep cognitions and innate abilities co-evolve as nascent entrepreneurs become actively engaged in the dynamic acquisition, processing and coordination of knowledge by action. The iterative and emerging pattern of actions suggests that the more interactions and combinations take place between the resources and founding dynamics, the greater the engagement with the emerging states of the gestation process, the more learning will be enabled, and hence more insights will be realised, steering the process of founding and its

boundaries within a coordinated context that look for the best fit among reality, resources and process dynamics. Dealing with learning dynamics requires not only reliance on the content and depth of knowledge, but also - and more significantly - on understanding how knowledge accumulates, evolves and changes within a dynamic and coordinated context. Some empirical works accords with the notion that the ability to create value lies in the individuals' ability to apply and integrate accumulated knowledge, and defines unique paths that enhance their sense of reality (Arora and Gambardella, 1994; Teece et al., 1997; Helfat, 1997; Eisenhardt and Martin, 2000; Kaplan et al., 2003).

This led us to conclude that the main effects of nascent capital's attributes are more useful as a blueprint for action or access tool for resources, while the action (dynamics) derived through the venturing process is the decisive context that creates momentum and propensity for tautological action that determines the success/failure of nascent ventures. In order to be successful in launching a new venture, one must attain a balance between accessibility to start-up capital's attributes and the tactics one employs to combine and deploy resources within the dynamic context that acts as a transferring mechanism that enables one to formulate rationales, bridge gaps, mitigate deficiencies, balance judgements and manage complexities. Therefore, it is not the knowledge inherent in the endowed resources that matters, but the dynamic nature of this knowledge and the specific quality of experience that is critical for venture success at the early stage of business venturing. The lack of dynamic context makes the founding process susceptible to homogeneity effects that hinder experimentation and the accumulation of knowledge as discussed in more detail in Chapter 6. Hence, the nascent entrepreneur's or the emerging firm's dynamic capacity to combine and utilize its resources optimally over the founding process may be its main asset and source for advantage.

7.2.1.2 Start-up Capital– New Venture Creation Relationship: Moderation From Cognitive Perspective

At the heart of the proposed model is cognition. At the cognitive level, there is an underrepresentation of this factor in Nascent Entrepreneurship empirical models, and its contribution is still limited to the development of taxonomies that link founders' behaviours to the exploitation-discovery context of the opportunity. Therefore, this study contributes to the entrepreneurship literature by demonstrating the value of cognitive capital compared to other forms of start-up capital that have received substantial attention over many years (Hmieleski and Carr, 2008).

This research contribute to the literature by exploring the role of cognitive factors in the make-up of nascent ventures from linear and integrated perspectives, by relaxing the unrealistic socio-economic assumptions of entrepreneurial behaviour and by drawing a clearer demarcation between success and failure of business founding by investigating a variety of interdependencies with cognitive schemes of thinking. The key themes in the adopted cognition dimension were synthesised from the literature to establish a prediction of the cognitive behaviour of nascent entrepreneurs that accounted for the early behavioural models of heuristics, bounded rationality, emotional aspects and social ones. These themes were confirmed as key in forming cognitive schema, influencing the patterns of entrepreneurial actions, acting as fundamental facets that aided us in understanding the stimuli of entrepreneurialism (Forbes, 1999). The findings provide plausible support for the notion that cognitive theory provides the field of Nascent Entrepreneurship with a psychological edge that enables researchers to test theoretical and empirical insights and explain the role of individualism in the emergence of nascent organisations (Mitchell et al., 2002). The emerging knowledge observed in this research was confirmed as an integral part of cognitive sense making that plays a role in the formation of desires, expectations, styles of thinking, perception, risk profiles, and other mental cues that nascent entrepreneurs rely on when launching new ventures. These cognitions appear to affect the interpretation of nascent entrepreneurs' rational and emotional cues (Gaglio, 1997) that seem to interact with deep cognitive schemes and thoughts that act as embedded conjectures for the rationalisation process of business founding decisions.

The study model extends our understanding of cognition in Nascent Entrepreneurship. More specifically, cognition in the context of this study provides theory that helps explain how the mental cues of nascent entrepreneurs play a fundamental role in the recursive interplay between start-up capital and the outcomes in the process of new venture creation. As nascent entrepreneurs attempt to select the right combinations of resources and activities in order to maximize the likelihood of success, cognition plays a key role in stabilizing or destabilizing the business founding process by assessing the best fit among resources. This cognitive assessment influences the extent to which possessed resources becomes action, and how both action and resources influence outcomes. Along this line of thinking, the study further examined which of the three forms of nascent capital (start-up capital's attributes) best predicts nascent venture success. Although the two forms of start-up capital's attributes [HC, SC] were both statistically significant predictors at the linear and integrated level, yet cognitive capital had a higher predictive power, where cognitive capital showed not only direct effect but also moderated the relationship between

other forms of start-up capital and the process outcome. This supported the proposition that cognitive capital has a significant moderating effect with a prevailing role within the integrative-dynamic modelling of entrepreneurial capital. Clearly, cognitive capital includes the schemas, dispositions, and mental cues that, when combined with other forms of resources, produce actions that bring value to the founding process of the new venture. This also indicates that nascent entrepreneurs need to achieve an effective balance between change and stability in the process of founding new ventures. Effective balancing requires a cognitive structure that supports the correct configuration of resources.

The implication is that it is more advantageous to have a higher amount of cognitive capital than to have higher amount of other forms of capital. While different forms of start-up capital's attributes facilitate smooth founding for the nascent venture and its long-term success, this is not valid for all business cases. Cognitive capital appears to be the key to actuate start-up resources. Having resources alone does not inevitably lead to a corresponding level of success. Therefore, cognitive aspects themselves are a crucial resource in nascent entrepreneurship. Nascent entrepreneurs should therefore always attempt to leverage their levels of cognitive mental states to increase their probability of attaining significant outcomes. The finding agrees with Baluku et al.'s (2016, p. 19) argument that 'it is psychological capital that enables entrepreneur to appropriately address both the stressful and joyful moments of the businesses, hence increasing the likelihood of success'. Nascent entrepreneurs therefore may succeed or fail depending on the extent to which their cognitive human capital is aligned with the complex nature of business founding process.

The findings of the present study underline the necessity to further assess the intersection of start-up capital and cognition in order to shape nascent entrepreneurship research. At the same time, the findings suggest that cognition is an important aspect of start-up capital for entrepreneurial success. The cognitive capability to set expectations, form desires, link risks and attain persistence appears to aid nascent entrepreneurs in identifying alternative paths to attain significant outcomes. These intrinsic abilities make nascent entrepreneurs with high cognitive capital more likely to succeed or alternatively initiate informed exist. Also, the dynamics drivers of positive outcomes that are best presented by the gestation rate of action also appear to best coincide with variables that relate to cognitive capital, and therefore, the findings indicate a dominant role for this form of capital in driving the transition during the start-up phase. This suggests that integrating knowledge from different sorts of capital is an integral part of cognitive sense making. Therefore, the findings of cognitive capital's moderation effect on the relationship between startup capital's attributes and

the outcome of new venture creation process confirm that cognitive capital plays a substantial role in how nascent entrepreneurs deploy their resources and how they manage the emerging matters of business founding process in a way that lead them to devote sustained high levels of effort to founding a new venture.

In light of the findings, there are two implications of the cognitive contribution to the context of new venture creation. The first implication is a theoretical one, where the findings offer a tested link to entrepreneurial cognition. This is a developing area in entrepreneurship that deals with the intellectual processes and mental mapping that intersect with prior knowledge and business reality (Mitchell et al., 2002). Prior studies (i.e. Baron, 1998, Forbes, 2005) had shown that most entrepreneurs are more susceptible to cognitive biases in their sense making than the wider population. In this research, successful nascent entrepreneurs appear to be prone to certain biases, but they also show a rationale based on the cognitive integrative thinking that appears to promote sensible and prudent actions.

The cognitive aspects have implications for the development of entrepreneurship theory. The findings asserted that the process of new venture creation is complex and multifaceted, where the integrative prospect appears to provide an updated discussion of cognitive capacity theory and its implications for Nascent Entrepreneurship success model. This is especially important given Krueger's (2007) argument that research focus on cognitions and the underlying structures of these cognitions are of paramount importance that have the potential to aid scholars in explaining the resilience and durability underlying the founding process. Apparently, Nascent entrepreneurs who are sensible of their cognitions are likely to carefully allocate and utilse resources appropriately in a manner that increases the likelihood of success. When this sensibility of cognitions is high, it produces confidence, action, resilience, and commitment that offsets the deficiencies associated with other forms of start-up capital (Trevelyan 2008; Storey, 2010). The results of the present analysis suggest that nascent entrepreneurs would benefit from the notion that '[o]ngoing sense-making processes challenge socially constructed boundaries in mental space and, in addition, call for a vocabulary that acknowledges the affinity between entrepreneurship and emotions and aesthetics rather than with cognitive facts alone. Entrepreneurial processes are initiated by curiosity, organised by spontaneity and intrinsically driven by passion' (Johannisson and Olaison, 2007, p. 58).

The second implication portrayed cognitive capital's moderating effect on the relationship between start-up capital's attributes and the outcome of new venture creation process. The finding

contributed to the Nascent Entrepreneurship literature by indicating that cognitive capital is best theorised as a moderating model between the resource endowments (start-up capital's attributes) and the venture creation's outcome. The implication is that while cognitive capital is not the only essential aspect of startup capital for nascent entrepreneurs, it plays the most central/integrative role in the utilization of a business's resources. This finding also provides affirmation of the expectancy theory (i.e. Fishbein and Ajzen, 1975; Feather, 1982). The theory states that the collective actions of nascent entrepreneurs evolve as they become subject to motivational aspects. The motivational elements appear to be driven by evaluative aspects inherent in the cognitive states of thinking. This agrees with the notion that 'knowledge creation rests on the ability to combine and exchange various pieces of information, and see ways to put resources and information together in new combinations' (Nahapiet and Ghoshal, 1998; cited in De Carolis et al., 2009, p. 532).

Therefore, nascent entrepreneurs who rely on cognitions, '[t]hey not only see the system as it is, but as it might be. They have a knack for looking at the usual and seeing the unusual, at the ordinary and seeing the extraordinary' (Luczkiw, 2015, p. 250). Obviously, the cognitive moderating link offers supporting evidence that the variations in the patterns of entrepreneurial actions are attributable in no small part to the differences in the way entrepreneurs handle cognitions. The basic premise of our perspective is that key insights into distinguishing nascent entrepreneurs from others is possible through an in-depth understanding of entrepreneurial action showing how entrepreneurs think, view risks, handle and process information, solve problems, anticipate forms of desires, and at an interactive level form combinations with other forms of capital that constitute the founding process (Brush, 1992). The differences in cognitive abilities, when linked with other forms of capital, explain why not all nascent entrepreneurs are successful at capitalising on their social and human capital.

The combined effects driven by cognitive capital explain how different associations unfold in the interaction cycle, revealing biases as well as unique patterns of association that are necessary when constituting a new venture, and facilitate better recognition of the potentials and limitations of the resources possessed by nascent entrepreneurs. An implication of this research suggests that cognitive capital is a promising approach that fills gaps associated with the classical approach that focuses on the cognitive traits of enterprising individuals in isolation from other forms of capitals and processes. The underlying value of the cognitive perspective lies also in its potential to explain the varying interaction effects appearing in the linear models of human and social capitals as well

as the reversal in the direction of significance for the main effects encountered during the interaction with process dynamics.

The study's findings imply that the change manifests itself in other forms that appear to emerge at deep cognitive levels (Krueger, 2007). This concurs with scholars of social neuroscience who explored how individuals structure knowledge at a deep cognitive level (Cacioppo and Berntson, 2002; Insell and Fernald, 2004; Andreasen, 2005), implying that studying cognitive elements are important because they play a pivotal role in what we perceive as relevant in new or prior knowledge, how we process stimuli and information, and how we store and structure the knowledge based on the cognitions formed. Still, most of us are unaware of our deep cognitions or their impact on the ways we perceive and react to situations (Krueger, 2007). These findings have implications for frameworks that enable individuals to educe cognitions (as well as their potentials and limitations) that mitigate any detrimental effects of the way nascent entrepreneurs deploy endowed resources accessed from other knowledge systems.

Generally, the study's findings confirmed that the combinations carried out based on socio-cognitive integrated profile [SC - CC] are the principal motivating forces driving the success or failure of the new venture creation process. The socio-cognitive profile appears to provide opportunities for psychological stability that in turn appear to re-centre the actions of nascent entrepreneurs in alignment with business realities. This socio-cognitive stability seems to translate into meaningful cues based on a higher quality of interactions, and greater practical and emotional support. This explains why some nascent entrepreneurs who are immersed in social networks are able to capitalise on social knowledge and others are still lacking the ability to exploit social knowledge. As for the [HC - CC] interaction, the combined effect between these dimensions dictates nascent entrepreneurs' orientation towards reflective thinking as they tend to make inferences and sense cues from the manifestation of metacognitive activities that take place as they capitalise on information drawn from their prior knowledge and experiences.

This accords with the observation that through the '[r]ecent exponential growth in what has become known as cognitive science, modern psychological theory has rejected Watson's extreme behaviourism in favour of a meta-theoretical stance that gives consciousness a fundamental role in human action. Thus, a psychological approach to new venture creation must involve cognitive processes that occur within the individual person' (Shaver and Scott, 1991, p. 26). Metacognition in this sense seems to encourage nascent entrepreneurs to engage in critical tasks that allow them to entertain thoughts, identify patterns and explore meanings embodied in the existing knowledge

thus paving the way for the successful transformation of human and social capitals into coherent knowledge with a better chance of concluding the process of new venture creation (Kolb, 1984; Keith and Frese, 2005). Therefore, nascent entrepreneurs who combine their metacognition with other forms of capital's attributes tend to increase the odds of utlizing their entrepreneurial resources (Kristiansen, 2004). The overall message is that human, social and cognitive capitals operate in concert to explain the outcomes of attempts at new venture creation (Kasouf et al., 2015).

In line with this reasoning, the empirical findings from this study also have clear implications for Krueger's (2007) 'Constructivist Model of Learning'. Krueger, based on educational theory, presented 'behaviourist versus constructivist models of learning', and discussed fundamental aspects of the models, elaborating on how individuals learn and structure knowledge. He adopted a constructivist-learning framework to explore its role in cognitive development, specifically in terms of knowledge content, knowledge structure and deep beliefs. The constructivist-learning framework suggested that the knowledge of individuals evolve as they learn, accumulate and acquire new information, while the behavioural-learning framework suggested that new information acquired during the process of learning replace the old ones.

The model of the present study contributes to this theoretical notion indicating that nascent entrepreneurs as they engage in founding their new ventures concurrently adopt a mix of constructivist and behavioural learning processes. Nascent entrepreneurs embark on integrating and selecting the optimum combination from the start-up capital resource system that later becomes subject to process dynamics. The iterative process causes changes in the content and structure of their deep cognitions, and in turn causes changes at the knowledge level that emerges in response to the accumulation and integration of knowledge within an iterative context. This iterative context requires a replacement or accumulation of knowledge depending on the nature and pattern of interactions. The varying interaction effects of cognitive capital on the [HC] and [SC] dimensions portray cognitive processing as a living system with a cumulative and recursive nature. Indeed, these iterations embody real time changes that emerge in response to the evolvement of the cognitive sense making, which further stimulates incremental and radical changes as nascent entrepreneurs embark on questioning assumptions, challenging prior knowledge and deep beliefs, forming new concepts, extending experiences and confronting discrepancies.

Using the results from the present analysis and applying cognitive theory, we conclude that the

proliferation of the cognitive impact is linked with the innate nature of nascent entrepreneurs, and hence the asymmetries in the cognitive properties of individual entrepreneurs create a variety of unique venturing patterns that in reality would act as a distinguishing factor for the threshold between success and failure experience in creating new ventures.

In sum, nascent ventures and nascent entrepreneurs are idiosyncratic, and hence the uniqueness of their founding endeavour is embedded in the start-up capital's attributes integrative potential. For nascent entrepreneurs to attain success, they need to value unconventional thinking that fosters nascent entrepreneurs' ability to combine existing knowledge into novel arrangements that maximise their probability of attaining success. The theoretical contribution concluded above answers some open questions of why nascent entrepreneurs may, or may not, assess the situation effectively despite their possession of high stocks of start-up capital's attributes, and why nascent entrepreneurial abilities vary despite the similarities in their initial stock of knowledge. Therefore, we hope the present study will lead to a greater integration of research on the cognitive and dynamic processes of start-up capital accumulation with research on entrepreneurship performance and success issues.

7.3 Pragmatic Contribution

Nascent Entrepreneurs and Understanding Start-up Capital Model

This study has several implications that apply in practice. The reciprocal reinforcement of stabilizing patterns between start-up capital attributes (knowledge), cognitions and dynamics (actions/changes) in the context of business lunching are inherently exploitative, as they dictate the quality of actions and the efficiency of decisions enacted by the nascent entrepreneur.

Nascent entrepreneurs are well advised to understand some basic levels of the integrated-dynamic knowledge, before pursuing their own undertakings. At the individual level, the current study provides nascent entrepreneur with a better prospect of the optimal preconditions for becoming a successful entrepreneur. The forces of actions/changes (dynamics) and the stabilising effect of cognitions emerge as a learning process that builds on existing knowledge, cognitive variations, and dynamic actions derived from them. Therefore, the goal for nascent entrepreneurs is to determine, attain, and sustain a balance between the linear and integrative (dynamic) approaches that is optimal for the context in which the nascent venture must operate. Stated differently, the entrepreneur should try to attain the 'optimal spot' that aligns process dynamics and the resource systems that

underpin success. Because this optimal spot constitutes a mutually reinforcing structure, the cognition of nascent entrepreneurs can play a central role in managing the level of stability and change of knowledge and behavior that in turn aid them in achieving the optimal spot. Some scholars have acknowledge this 'optimal spot' as the 'edge of chaos' (Brymer, Hitt, and Schijven, 2011) where entrepreneurial outcome is optimized, creating the best value possible from the exploitation of new knowledge and the exploration of emerging knowledge in pursuit of new ventures. Thus, a primary role of the nascent entrepreneur is to understand this optimal spot and align resources, cognitions, knowledge, and relationships accordingly.

.In more technical terms, the findings suggest that practical success of new ventures derives, at least in part, from the competency of the nascent entrepreneur to bring a stock of intangible resources to bear on the multifaceted tasks encountered during the gestation period. Nascent venture calls for a particular type of resources and dynamics, therefore nascent entrepreneurs must assess whether the specific start-up resources that they bring to the new venture make sense for the venture or whether it would be more appropriate for them to step aside and abandon business-lunching initiative. Indeed, thinking beyond the abstract/discrete value of the resources in their isolated form should aid nascent or potential entrepreneurs in attaining greater internal consistency of action as well as greater effectiveness in the founding process. Therefore, future research might investigate how the resource-based view impacts the nature of the founding process under the stream of learning and experimentation. This can yield important knowledge about the forms of integrations and dynamics that nascent entrepreneurs can find most useful in their founding efforts.

Despite major public policies to encourage fresh graduate entrepreneur (Hannon, 2004), starting a new business without adequate understanding of the interrelated nature of entrepreneurial capital may make nascent entrepreneurs inclined to a constant support from external parties. Therefore, nascent entrepreneurs should develop some understanding of the forms and configurations of resources that the new venture calls for in order to provide direction (Brush, Greene, and Hart, 2001). Those entrepreneurs who have chosen to depend on individual start-up capital's attributes alone seem to have significant but bounded chances of success. Importantly, identifying the factors and the unique behaviours influencing the success of nascent ventures and their reciprocal effects should inform prospective entrepreneurs and stakeholders about the factors they should look for when deciding to pursue or back possible ventures. The findings provide nascent and potential entrepreneurs with a better understanding of how resource endowments at the linear and interactive levels influence their success or failure in getting the nascent venture off the ground. As

individuals prepare to become entrepreneurs, they need to be fully aware of the potentials and limitations of start-up capital's attributes taking into consideration both the linear and integrated perspectives. Nascent entrepreneurs should be aware that having the capacity to create combinations based on endowed resources increases their probability of concluding the process of founding.

Therefore, there are clear pragmatic implications for nascent and potential entrepreneurs that they need to be aware of when forming their investment strategies in different forms of start-up capitals. The findings of this study indicated that ongoing improvement to the quality of their capital's attributes is not by itself sufficient in the context of new venture creation. For the new venture creation process to succeed, it is essential to invest in resources by exploring the potential synergies. Nascent entrepreneurs should be aware when forming their investment strategy that despite the need to invest in education, training, expertise and expansion or maintenance of social networks, it may still be the case that the individual resource aspects on their own are ineffective in mobilising resources or unsuited to providing the sorts of entrepreneurial skills and capacities that can turn the pursued opportunity into a successful, operational venture. For potential and nascent entrepreneurs, the complex interactions have implications for the notion of resource optimisation that nascent entrepreneurs should be aware of when they are engaged in acquiring and combing resources. The findings detected practical interactions that should encourage nascent entrepreneurs to look for optimum combinations that concurrently appear to create the potential for success and override other combinations that induce limitations that seem to hinder progress.

The findings also supported the proposition that cognitive capital is a better predictor of entrepreneurial success. Nascent entrepreneurs should therefore always seek to nurture their levels of cognitive capital to increase their chances of success. Indeed, understanding the pragmatic insights located in uncertain complex media, and transforming these into a series of entrepreneurial focused guidelines, principles and codified actions as presented in Chapter 6 is a crucial factor for the nascent entrepreneurship success model. We counsel nascent entrepreneurs to become more aware of the nature of interactions between start-up capital's attributes and the related dynamics studied here, and advise entrepreneurs to manage them at an optimum level to maximise their likelihood of attaining success, as none of these alone will create a new venture.

Therefore, the findings are in line with the argument that when nascent entrepreneurs are mainly chosen due to resource endowments reasons in their isolated forms, this may lead to adverse selection problems and lower performance at practical level. This supports recent literature that has

investigated the downsides of human, social and cognitive capital in the entrepreneurship context and beyond (Arregle, et al., 2013; Sieger and Minola, 2015). In this sense, heterogeneous distribution of nascent entrepreneurial capital over separate components reveals that it is not prudent to rely on resource endowments alone at individual or static level as one could expect that stronger human-social-cognitive based capital relationship does not appear to be the ideal combination that enhances the positive link between entrepreneurial capital and process outcomes.

This clearly suggests that potential entrepreneurs should not wait too long before attempting the entrepreneurial endeavor, as accumulating more knowledge, credentials and years of experience would not necessarily lead to entrepreneurial success. In that context, we also challenge the statement that a strong or weak endowment of different forms of capital is not a conclusive reason for ventures to succeed or fail. These practical insights can further inform practitioners about optimal preparation to focus on prior to founding a new venture. This is of relevance to practitioners given that we show that accumulating knowledge, skills and experiences in different streams is not likely to be the most effective approach when engaging in dynamic and evolving environment. We show that different forms of startup capital each have a maximum value with respect to entrepreneurial outcomes, which will most probably influence the nascent venture performance as they interact with other factors. Therefore, it is neither adequate nor necessary to strive for more, skills, higher qualifications and more years of experience, particularly if the accumulation of knowledge is not meeting the integration potential.

Nascent Entrepreneurs and Practical Insights From the Empirical Findings

There are practical insights in this research that should be of a great interest to individuals who intend to pursue the founding process. In more specific terms, practitioners need to be aware of the unique combinations that result in optimum benefits. So, at integrative level, the findings show how the interaction between human and cognitive capital acts as a strategy to neutralise the emotional aspects embedded in cognitive capital. Human capital in this sense shows a suppressing power that supersedes the power of the cognitive effects guided by economical desires. This suggests that the latter stated desires are derived through the existing knowledge of nascent entrepreneurs. On the other hand, when the interaction between human and cognitive capital become driven by non-economical desires, we observe different pattern of outcomes, depending on the type of knowledge (general/specific) interacting with the cognitive desires.

The latter case was evident in the interaction between non-economical desires and general form of

human capital that seems to produce conflicting effects that challenge the standards and routines embedded in the general knowledge. While, the same desires appear to interact effectively with human capital guided by practical aspects (specific knowledge). Moreover, the interaction between social and cognitive capital advise nascent entrepreneurs to combine their cognitive expectations with social competencies and/or relations that are guided by social ties that are external to the venture being founded. Similarly, the findings also advise them to be aware of the potential conflict between socio-cognitive combinations, as conflict may arises when nascent entrepreneurs combine social competencies accessed through external cues with cognitions guided by social traditions.

At a dynamic level, different patterns of associations between start-up capital attributes and process dynamics generate the relevant entrepreneurial capital that distinguishes nascent entrepreneurs' founding capacity. At practical level such associations call for the attention of policy makers, prospect entrepreneurs and SME support entities, as they conceptualize images for the optimal combinations that lead to the success or failure of nascent ventures.

In more practical terms, the findings suggest that nascent entrepreneurs who are driven by learning dynamics should engage their human and social forms of knowledge. Put differently, the dynamics of learning appear to rely on the inductive approach driven by nascent entrepreneur's social and human capital that derive new insights, when predicting nascent entrepreneurial outcomes. Nascent entrepreneur's receptivity to learning appears to be highly influenced by practical experiences that emerge within the social context. Clearly, this combination encourages nascent entrepreneurs to respond to the novel conditions of the nascent venture and promotes them to engage in new patterns of thinking that maximize their propensity to take efficient actions. Therefore, the findings suggest that nascent entrepreneurs may be better off obtaining training and some practical experience in start-up domain within their social context before founding their new venture. This combination allows them to see the causal connections more clearly, as they engage in learning, articulating prior knowledge and the details of the entrepreneurial opportunity at hand.

The findings also advise nascent entrepreneurs who are driven by gestation dynamics (rate and intensity of founding) to focus on human and cognitive capital rather than with social relations. Put differently, the findings reveal that gestation dynamics yield maximum benefits as they interact, in particular with human and cognitive forms of capital. These forms of capital involve practical experiences and motivational aspects that provide them with rigorous grounding for assessing the prospect of the new venture and understanding the limits and potentials of individual resources.

The combined knowledge between cognitive or human capital and gestation dynamics make them more efficient in integrating knowledge into complementary specific context, leading to optimal decisions on timely basis.

However, cognitive and human capitals do not always appear to be beneficial for the performance of nascent venture. The findings in this sense suggest that nascent entrepreneurs with cognitive knowledge driven specifically by the style of thinking and informational processing should combine the preceded cognitive aspects with opportunity change dynamics to re-conceptualise entrepreneurial idea at exploitation level. While, the findings advise nascent entrepreneurs to avoid the interaction between the preceded cognitive aspects (style and informational processing) and gestation dynamics (time and efforts) as such interaction appear to associate with detrimental effects. This is because the evolving nature and complexity of gestation dynamics (time and efforts) may capitalize on cognitions driven by motivational aspects, but on the other hand fail to contemplate new cognitions that involve new concepts (opportunity change dynamics), as the latter stated dynamics require the engagement of cognitions that involve thinking aspects (style and information).

Clearly, as startup capital's attributes interact with different forms of process dynamics, some attributes will lose their significance while others will gain, leading to a change in the shape of entrepreneurial judgment, and ultimately the attained outcomes.

Therefore, what practitioners should derive from this research that supporting "the more the better" approach is limited in its informative value, and therefore, nascent entrepreneur's knowledge levels should be analysed deeply, instead of limiting the focus to the individual level maximization. Our main advice for nascent entrepreneurs in the venture creation phase is to not only consider the resource endowments that one may possess. Nascent entrepreneurs should tap into the convenient mode by focusing on different interdependencies. The new theorisation and practical insights stated above, suggest that perhaps most promising about the findings of the current study is that cognitive capital and process dynamics can presumably be developed via interventions, thus drawing the attention to an opportunity for training nascent entrepreneurs to be able to thrive and flourish under dynamic, uncertain and complex circumstances. These interventions should be able to be used by sponsors and regulators to enhance the cognitive capital of nascent entrepreneurs working within entrepreneurship domain.

Policy Making and New Venture Creation

The study's findings have implications for both policy making and future research due to their implications for theory and the application to practice. Without a better understanding of the new venture creation process and the underlying factors of success and failures, policy measures aimed at promoting new firm formation will not be effective. For policymakers, the findings explaining why ventures were abandoned point to the importance of ensuring that the outcomes of the programmes designed to encourage policies for new venture formation are validly measured and appropriately evaluated. The outcomes of this research have implications that aid researchers in engaging in an open dialogue with policy makers and government in their discussions of the potentials and challenges of the theoretical insights and empirical outcomes. This collaborative scheme should enlighten the new venture creation process by influencing the development of rigorous business models and policies as the new perspective is embraced, unpacking the inherent complexities and heterogeneities.

Policy makers seeking information on how to improve entrepreneurial rate of success should be advised to look at all three dimensions (linear, integrative and dynamic dimensions). Whilst, it is critical to understand what drives nascent entrepreneurship, it is equally important to learn how policy makers can support nascent entrepreneurs in a way that the efforts of nascent entrepreneurs are not 'wasted' but rather translate into successful new venture creation. From a policy point of view, human effort invested in unsuccessful start-ups may be more efficiently allocated to other, more productive economic tasks.

Indeed, the influence of start-up capital's attributes on new venture creation outcome and their interaction effects with process dynamics have implications for career counseling and training polices. Self-employment is a demanding vocational role that incorporates challenging tasks that requires nascent entrepreneurs to make important decisions during the course of business founding, and therefore, the findings of this study suggest that setting policies for support programmes and career counseling could put start-up capital into practice, and provide potential entrepreneurs with the opportunity to assess their prospective entrepreneurial capacity and any potential pitfalls (Brixy and Hessel, 2010) in a simulated environment that mimic entrepreneurial tasks in real time situations.

In the early stages of entrepreneurship, the entrepreneurial development programmes should matter and make a difference. It is not possible and advisable to transform every individual into an

entrepreneur, however, as Schroder and Schmitt-Rodermund (2009) demonstrated, a training programme focusing on the exploration of integrated capacities and talents for entrepreneurship could raise awareness of individuals and their interest in Nascent Entrepreneurship. The training/counseling polices should foster the acquisition of interdisciplinary knowledge and aid the successful establishment of new ventures based on long-term strategies that aim to nurture the field of entrepreneurship with new generations who are prepared to participate in entrepreneurship as a career with heterogeneous mindsets that get nurtured based on systems, policies and institutions that in effect act within a collaborative framework that fosters the successful establishment of new ventures.

Indeed, the findings do not offer definite short-term strategies to promote successful Nascent Entrepreneurship. However, there are several policy measures that could promote new venture creation in the long run. For example, policies supporting entrepreneurship should be expanded: pure resource-based approaches seem to be inadequate. Given the empirical evidence in this study on the impact of different start-up capital's attributes at linear and combined levels and the related complexity, establishing institutional settings and entities that enable potential and nascent entrepreneurs to interact with one another could be a crucial policy. Moreover, having the freedom to access experts, facilities and public organisations would promote access to integrated solutions that fit the nature and context of the venture during the founding process.

More implications arise from the potential generalisation of the findings of this study taking into consideration the unique aspects of different cultures, particularly the varying settings of emerging markets. This integrated solution would enable governments and regulators worldwide to set overarching programmes that aid and monitor nascent ventures. Therefore, policies in the new, entrepreneurial economy should focus on enriching human, social and cognitive capitals of the working individuals to foster and enable active engagement in Nascent Entrepreneurship. Understanding the reciprocal relationships between nascent entrepreneurs' actions, process dynamics and endowed resources in the business launching process is crucial for creating a portfolio of enabling policies.

Small-to-Medium Enterprise (SME) Support Agencies

Overall, start-up capital and all its dimensions have a significant influence on differentiating the success or failure of NVC process outcomes. However different forms of start-up capital are valuable with different interactions, and therefore they contribute differently to nascent

entrepreneurial success/failure model. The general idea is that practitioners need to consider the type of interactions that prospect entrepreneurs are capable to execute. The findings should help decision makers in assessing nascent entrepreneurs not only based on individuals' resources, but also with regard to their integrative and dynamic capacity, as those characteristics are just as valuable as the knowledge, skills, and experiences individuals possess. Therefore, the findings provide practical insights, suggesting that individual startup capital's attributes comprising of highly knowledgeable, experienced founders with social relations seems to be inefficient. In practice, overall broader integrative set of knowledge, skills and experiences is of particular importance, as it enriches the venture's progress and enhances the likelihood of success. These are important insights that can help in interventions aimed at enhancing the rate of nascent entrepreneurial success among micro-entrepreneurs.

Sponsorship programmes aimed at assisting nascent entrepreneurs to develop business practices can be vital. The success and failure measures in the present study should be considered in the selection decision to set targets that maximise the propensity of attaining success. Obviously, there are differences between nascent entrepreneurs, the nature of opportunities and the founding conditions, so a one-size-fits-all approach could result in setbacks that fail to provide the necessary aid that correspond to the idiosyncratic needs of nascent entrepreneurs. For support agencies, the findings suggest that how nascent entrepreneurs combine and deploy resources that significantly impact the way in which those individuals should seek support in the formation of their new ventures.

The findings suggest that SME support agencies need to be aware that different programmes of support should be devised to meet the differing needs of nascent entrepreneurs. The findings showed that nascent entrepreneurs require assistance in accumulating start-up capital's attributes that can combine well or offset the gaps in their existing resources. The knowledge of the interrelations between the various entrepreneurial inputs and outputs enables sponsors of entrepreneurship support programmes to be more able to focus on the start-up issues /combinations/dynamics that matter most. These programmes, in their current forms, often focus on conventional services that include guidance to nascent entrepreneurs on accessing different forms of capital, particularly funds and business related training.

The present findings suggest that attempts to develop more specific business networks and connections with industrial associates may be more effective in leveraging nascent entrepreneur's integrated capacity. A structured programme is recommended by stimulating entrepreneurial talent

in the founding process based on integrated settings and coordinated contexts, where experimental settings enable stakeholders to assess the level of coherence and synergy shared among resource-process interrelations.

In addition, cognitive capital predisposes nascent entrepreneurs toward entrepreneurial success or failure. It is therefore important to include psychological testing into SME support programs. Venture capitalists focus on collateral when deciding on prospect entrepreneur's capacity to pay back a loan; and SME support organizations offers support to entrepreneurs without paying attention to their capacity to deploy the funds for the intended purpose. Apparently, the selection criteria ignore the value of cognitive states in Nascent Entrepreneurship. The study's findings therefore, suggest that in order for sponsorship programmes to have the greatest impact, the scope of intervention should include psychological aspects, which to date has been overlooked in sponsorship and support programmes.

Therefore, the general idea is that nascent entrepreneurs with high levels of cognitive capital are likely to be more successful than their counterparts with low levels of this form of capital. These are important observations that can help in interventions aimed at improving the rate of entrepreneurial success among nascent entrepreneurs. Indeed, understanding entrepreneurs' capability to found a new venture is embedded in their mental capacity to utilise and combine resources that are guided by human cognition. However, the incorporation of cognitive testing should not be limited to the selection-excluding criteria for potential entrepreneurs, but rather as a mean of assessing the idiosyncratic needs of nascent entrepreneurs based on their expected capacity to extend existing knowledge and create successful combinations, mitigating the antithetical effects of the resources in their mere forms (Baluku et al., 2016). Developing a mental map of how different combinations create value or obscure potential should assist SME fund initiatives to create selection criteria and programmes that consider the distinctive needs of nascent entrepreneurs. Therefore, support schemes should diversify their support scope beyond financial aid, and nurture nascent entrepreneurs with entrepreneurial strategies and coping mechanisms that allow them to tap into meaningful complementary sets of resources that could extend their existing knowledge and bridge deficits in their expertise, contacts, mental models and practical approaches. We therefore recommend that entrepreneurial support programs and entities engaged in promoting Nascent Entrepreneurship include cognitive testing in their selection criteria, given that most of these attributes of cognitive capital can be learned. It would also be useful for governments to incorporate provisions regarding these issues in their new venture creation policies.

For these, we need the integrated-dynamic perspective of new venture creation, as presented in this study. The scope of support should integrate start-up capital's attributes that matter to the acquisition of new capabilities and the subsequent transference of general and specific skills that are required for particular functions in a new venture's creation. Therefore, SME support entities should take into consideration when making a decision to found a new venture or to grant financial support for potential entrepreneurs, the potential lock-ins as well as the ideal mix of qualifications and expertise that could serve as a reliable indicator of success in creating the new venture.

7.4 Limitations, and Recommendations

Generalisability

Despite the stated importance of the integrative-dynamic approach in explaining the demonstrated drivers of nascent ventures' success, this approach might be too ambitious given the variations that exist among nascent ventures in terms of type, size and other endogenous and exogenous factors at national and multinational levels. The limitations in terms of specific industries and the adoption of data sets from specific regions pose some challenges to the generalisability of the findings. The study was confined to Nascent Entrepreneurship in the context of a developed country. The study's reliance on US entrepreneurs at particular time limits also the generalisability of the findings and poses challenges for a fair representation of the study population at international level.

The stated limitation should be nullified by validating the findings through further testing of this research study using the same set of variables but with multiple sources, more data and different designs that authenticate the validity of the study and facilitate well-grounded generalisations, rigorously tested propositions and novel contribution for the refinement of new venture creation as a phenomenon. Therefore, the present findings and analysis raise the prospect of follow-up work using data from other countries, further developing the proposed model, and widening of the scope of the research to tackle different research streams and contexts with a view to theory building and validating/disproving the findings of the present study. In fact, there is a promising opportunity to reproduce the findings of this study across different national contexts; bearing in mind that PSED methodology has been implemented across different regions. Therefore, the replication of this study in the emerging economic contexts and with large-scale nascent entrepreneurs could make a substantial contribution to Nascent Entrepreneurship literature.

However, precautions should be applied when extending these findings to different nations

considering the high variability of business environments. The drivers of success for new ventures may become confounded, and accordingly, future research should embark on investigating the generality of these findings considering a comparative context at a multinational level. Indeed, national comparative studies will have the potential to yield insightful findings to contribute to growing knowledge and interest in the combined-dynamic nature of entrepreneurial capital and its impact on new venture creation outcomes. The unique combinations that contributed to the success of creating new ventures merit further research, considering more differences in entrepreneurial start-up capital's attributes between nascent entrepreneurs living in regions with favourable and unfavourable opportunity structures, well/badly equipped with institutional policies and collaborative/absent schemes that foster effective establishment for new ventures. It would be useful to investigate these combinations at a comparative level, but more importantly, it would be also helpful to determine the long term effects of these attributions at performance, growth and survival levels. The depth and breadth of the investigations would bring improvements to the success rate of nascent ventures, making a substantial contribution to lifting Nascent Entrepreneurship as a valid theory and recognised career option.

Complexity

The varying effects are controlled in this study by drawing connections (explanatory links) between different resources and dynamics following the integrative-dynamic perspective, supported by multiple pieces of evidence from testing the hypotheses. In the integrative modelling, the issue of combining startup resources was explored by highlighting the limitations of their linear forms. Apparently, the linear approach focuses on one capital at a time, in abstraction from its embedding configurations, while the integrative modelling seeks to understand the complexity embedded within the holistic view of Nascent Entrepreneurship. This is particularly appropriate for Nascent Entrepreneurship context as outcomes are attained through 'multiple, conjectural causation, i.e. the joint presence of several factors' (Dimov, 2017, p.223). Therefore, future research on this topic should focus on the cause-effect links rather than the correlational approach in order to draw meaningful interpretations that inform our understanding of the complexity intrinsic to this phenomenon, resolve conflicting signals arising from its multidisciplinary nature, and bridge the gap between theory and practice.

Unit of Analysis

The founder of the firm was selected as the main unit of analysis who represents the firm. Even

though there is good reason to believe that the start-up resources of a sole founder may have a strong effect on pre-start-up success, it is likely that the resources of other founding team members also play a significant role in achieving success, introducing complementary or substitutability combinations of resources (Klotz et al., 2014). In the context of this study, selecting the level of analysis that reflects the profile of solo entrepreneurs was due to a limitation of the PSED data set that had a low frequency of responses at the level of business partners and team members. Choosing not to account for other partners/team members as the main unit of analysis may impact the accuracy of the start-up capital evaluation. Future studies should extend the scope of the analysis incorporating the collective resources shared among the founding team/partners to explore the effect of knowledge heterogeneity on creating resource configurations and new patterns of actions that should offer a broader explanation of the effect of resource-process interdependencies within the integrative-dynamic perspective.

Methods

Although the idea of integrative modelling is not new, yet its methodological application has been limited (Dimov, 2017). For example some researchers (i.e. Wiklund and Shepherd, 2005) used multiple interactions within a linear modelling, but this framework is limited to a typology of three interacting variables and therefore fails in tracing the various combinations of the start-up capitals' components and this in turn associates with limitations in terms of drawing theoretical relevance. Other researchers (i.e. De Clercq et al., 2010) used the variance decomposition approach in a linear framework that models the combinations as deviations from its ideal typology. However, according to Dimov (2017, p.224), this approach appears to transform the deviations into numerical values and this may 'downplays the meaning of the numerical representations it employs', by not considering the full combinations that attain the same deviation scores. Therefore, in order to reveal the complexity of Nascent Entrepreneurship phenomenon and the determining factors of its success, we agree with the Dimovs'(2017) call for the research to focus on new and rigorous methods that consider measurement calibration and new analytical approaches – that reveal the theoretical meaning of its representations.

Moreover, the study had limited focus on quantitative method. Future research should incorporate qualitative aspects in order to provide an explanatory edge, stimulating subjective notions and impressions in the narratives of nascent entrepreneurs. Research in action ethnographies and case studies would nurture this domain with improved knowledge. This should be beneficial in telling the stories, recalling the tactics, and trajectories in which entrepreneurial action was influenced and

endowed resources were operationalised. The richness, vividness and depth of meaning associated with qualitative information could help researchers to have illustrative knowledge and a robust grasp of the issues associated with the research topic. Collections of diverse pieces of evidence tend to establish mutual confirmation and/or extend the scope or scale of research to tackle different facets of the phenomenon under investigation that allow us to construct a complementary view of the objective issues in the research topic. By assessing the qualitative reasons nascent entrepreneurs gave for the success or failure of their efforts to start a business, valuable insights would be captured about the participants in the new venture creation process that we know very little about, promoting focused and unbiased decision frames and models that nurture entrepreneurship at the business launching stage. Therefore, future research should focus on triangulation method where quantitative and qualitative can be investigated together in order to attain richer insight for the academic body of knowledge.

Scalability of the Study

This study has drawn attention to the critical role played by combined-dynamic entrepreneurial capital in founding new ventures. Future studies should build on this and seek to learn more about the creation of combined-dynamic capital and its impact on entrepreneurship generally and entrepreneurial performance, growth and survival in particular. A related question in need of research focus is whether a various combinations of predictors exist for each form of entrepreneurial success, such as growth versus profitability. Therefore, another intriguing area to explore would be how these start-up attributes and process dynamics change over the lifecycle of a new venture.

The integrated view of entrepreneurial capital and its impact on entrepreneurial outcomes lays the foundation for the new venture long term outlook, and therefore, has implications not only for nascent venture at pre-startup stage, but also for the long term sustainability and growth. So, the current thesis offers a step towards understanding the different combinations of resources and dynamics that matter in the context of business lunching. The next step in future research would be to examine longitudinally the utility of combined resources as they shift across entrepreneurship lifecycle (i.e. survival, performance, growth). Further research should test the scalability, endurance and resilience of the generated effects of resource-process combinations on entrepreneurial success, observing their implications for future performance and productivity of established ventures, and not only the contemporaneous issues of nascent ventures.

In other words, future study should extend the scope of investigation by exploring if the early

combinations at the nascent phase of business venturing have long-lasting implications for its later progress following the pre-start-up phase (adolescent phase) (Bamfort et al*.,* 2004; Kessler et al*.,* 2012). This should nurture meaningful interpretation of the integrative-dynamic prospect discussed at the early stage of business development and how the detected combinations and configurations of resources and related dynamics at the nascent period of business-venturing could evolve, furnishing entrepreneurs with long term practical competencies that allow them to withstand future constraints and competition. Observing the evolving patterns of the integrative perspective at subsequent stages holds promising potential in understanding the emerging nature of start-up capital's attributes opening metaphorical doors to future theoretical development and further empirical testing. The findings also suggest that future research should investigate the influence of the source of capital and SME support schemes on the startup capital-nascent entrepreneurial success relationships.

Measures

Although the study provides insightful outcomes on the role of startup capital-process dynamics relationship in influencing the outcomes of new venture creation process, yet there is no consensus on the measures of success for Nascent Entrepreneurship research. The inconsistency in the literature could be attributed to variations in outcomes, definitions conceptual work and design issues. This seems to inflate the variations across different nations, and therefore further consideration to control for variations is deemed necessary to ensure valid, cumulative and definitive answers that must be built upon towards a solid and unified basis. Therefore, a number of research implications must be considered. For example, there are no globally agreed-upon measures of entrepreneurial success. For this research, mainly measures from earlier studies have been adapted. These do not necessarily comprise all relevant facets of entrepreneurial capital. Future studies should therefore develop new sets of items. Future research should focus on developing new sets of measures, such as a widely acceptable register for measuring nascent entrepreneurial success and startup capital.

Also, the scales used to measure the variables required self-rating by the respondents. Some respondents may have placed excessive emphasis on their positive attributes, particularly on the measures of cognitive capital and the attained outcome. This overemphasis could have affected the reliability of the findings. For example, perceptual measures may expose respondents to the risks of over-emphasising the attributes that relate to business success (Podsakoff et al., 2003). Despite the importance of the subjective viewpoint, greater confidence in self- rating would be achieved if

objective measures were considered. Start-up capital should be defined with higher specificity to enhance the validity of the generated effects, by designing instruments that measure all facets of entrepreneurial capital and by assessing the 'appropriateness of current approaches' (Dimov, 2017, p. 222) to measuring start-up capital attributes, testing the relationship between [HC-SC-CC] modeling and their constructs, as well as identifying gestation-specific resource attributes. The findings suggest that a major focus in the measurement of startup- capital attributes should be on understanding their potential integrative ability with other indicators. This is especially important for research on nascent entrepreneurs.

In addition, future research should consider the formative models of start-up capital attributes to explore the benefits of the configurational patterns within their individual constructs in order to avoid the implicit assumption 'that these indicators represent interchangeable proxies for one's [startup capital attributes], albeit with varying degrees of proximity' (Dimov, 2017, p.222). To rationalise the lack of consistent empirical relationship between start-up capital's attributes and entrepreneurship outcomes, researchers need to resolve some methodological and theoretical inconsistencies revolving around causes that relate to reliance on descriptive, linear measures, retrospective methods and the lack of standardisation in constructing and calibrating valid measures for start-up capital. These methods overlook the distinction between cause and effect in the success prediction models (Gorman et al., 1997; Alberti, 1999) and focus on static and homogeneous views that overlook the contingencies and the intervening factors, the complexity, and the dynamism of the business founding conditions (Honig, 1998; Dimov, 2017).

Therefore, start-up capital's attributes theorised as an investment and or/ an amount may reveal minor images about the knowledge and competencies that nascent entrepreneurs actually hold (Unger et al., 2011) by overlooking the combination qualities. Future researchers could build on our distinctions of start-up capital's attributes to directly assess incremental validities of different combinations of resources in different contexts. Thus, in order to advance our current understanding of the effect of startup capital on new venture creation outcome, we urge researchers to theorize about (and measure) different form of endowed resources in combination. Indeed, while different forms of resources can be grouped together under the generic rubric of start-up capital, various variables of start-up capital are related to different components of entrepreneurial success in different ways. Thus, it makes sense to consider and examine multiple facets and combinations of startup capital in future research, as investigating these interrelationships in more depth is crucial to extend entrepreneurial capital theory.

Failure

According to McGrath's (1999), researchers should acknowledge failures not as a preferred outcome but as an anticipated possibility. In the study's model, we followed Yusuf's (2012) view of failure as 'intelligent exit', where enterprising individuals at a certain point of time take the decision to disengage from the process of business launching on the basis of causal or effectual learning (Davidsson, 2005). This is a strategic choice that indeed acts as a step forward towards future successes, and this logic is consistent with Saravathy's (2004) notion that failure is an essential ingredient that constitutes success in entrepreneurship. This emerging learning is essential in order to test predetermined assumptions, steering the incurred risks in a way that helps nascent entrepreneurs to avoid escalated costs and efforts of 'intelligent exit' or redirect the stream of knowledge, resources and efforts, mitigating uncertainties and anticipated failures. This reasoning agrees with Becker et al. (2015), who argued that 'these failed business opportunities are important, as they remain in the pool of possible opportunities available for future exploitation, when customers' demands have matured or changed' (p. 164). As argued by Becker et al. (2015), PayPal is an example of how a successful business worth $1.5 billion can develop out of failed attempts. In future research, it would be interesting to explore within the dynamic-integrative framework whether failure in previous entrepreneurial attempts introduces incremental and transformational changes.

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Appendices

Appendix A:

PSED Background

In studies related to nascent entrepreneurship, longitudinal studies dominate. A detailed and critical examination of the secondary datasets for PSED-I and II were carried out in order to make meaningful choices required to overcome the limitations of the existing data. Based on this review a decision was taken to select PSED-I as opposed to PSED-II to employ questions from the former dataset that cover the cognitive capital construct.

As stated above, the data were drawn from the Panel Study of Entrepreneurial Dynamics (PSED-I). These longitudinal data were employed to assess the link between different factors in the nascent entrepreneurial capital model and with success. According to Reynolds and Curtin, (2008), PSED is considered the largest and most resprestative database for nascent entrepreneurial aspects. According to Dimov (2017), PSED was utilized in over 120 peer-reviewed publications. The establishment of the PSED led to the formation of the Entrepreneurial Research Consortium encompassing a group of 51 world-class scholars in nine countries. Later, the PSED convention was adopted for parallel studies in other countries including Argentina, Canada, Greece, the Netherlands, Norway, Australia, the UK and Sweden. This became the foundation for the configuration of broad cross-national correlations actualised by the Global Entrepreneurship Monitor (GEM) consortium.

According to Reynolds et al. (2007), the PSED research initiative elicits information depicting the dynamic procedures associated with the early stage of business venturing which has a genuine operational relevance in terms of the efficiency and effectiveness of the nascent entrepreneurial process and its subsequent outcomes. This permits consideration of an extensive variety of issues and compositional properties of nascent entrepreneurship, as highlighted in the Tables below.

A screening criterion for eligibility was followed to qualify respondents as nascent entrepreneurs. This criterion sought to confirm that the new venture was not just a wish but an idea that was being actively pursued. However, the new venture had to be in the start-up phase of founding and not already an operational venture (Shaver et al., 2001). Therefore, the scope of analysis excludes the intersection boundary with organisational theory that traces the post nascent venture phase after the successful emergence of the new venture (Klyver et al., 2011). The screening strategy to identify nascent entrepreneurs was administered as per the procedure in Table below. For further detail about the sampling procedures, refer to Shaver et al. (2001).

The PSED Screening Strategy
o Are you, alone or with others, currently trying to start a new business, including any self-employment or selling any goods or services to others?
o Are you, alone or with others, currently trying to start a new business or a new venture for your employer, an effort that is part of your normal work?
o Are you, alone or with others, currently the owner of a business you help manage, including self-employment or selling any goods or services to others?
o If yes to any item, additional criteria used to sort into nascent and owner managers: - Nascent: Active, ownership, and no initial profits - Owner-Manager: Active, ownership, and some initial profits
o Classification based on meeting three additional criteria, not just the screening items: - Two activities within 12-month window - Respondent must have ownership share in the start-up - No sustained profits
o Detailed interviews to identify active nascent entrepreneurs and gather information on what they are doing, then follow-up interviews to determine the outcomes of their efforts.
Source: Gartner et al. (2004)

PSED Screening Strategy - Main Topics of the PSED
-Who gets involved in creating a new business?
-How many nascent entrepreneurs/nascent enterprises exist?
-What do nascent entrepreneurs do to create a new firm?
-To what extent are new firms based on advances in technology and science?
-What proportion of nascent enterprises completes the process to become a new firm?
-How long does it take to reach a resolution – a new firm or disengagement – from entry into the start-up process?
-What is unique about nascent enterprises that become a new business compared to those that do not make the firm birth transition?
-What is the social cost, in terms of sweat equity and personal investments, associated with the firm creation process?
-What is unique about those new firms expecting to have a substantial growth trajectory after launch?
-How many individuals must implement how many firms to create one firm with substantial growth potential?
-How does the start-up procedure and strategy affect the trajectory of firms once they are launched?
Source: Gartner et al. (2004)

PSED-I Gestation Activities	
Activity	**Code**
1 Spent time on thinking about business idea	Q109
2 Has a business plan been prepared for	Q111
3 Has a start-up team been organized	Q116
4 Developing models and procedures	Q120
5 Have marketing or promotional efforts been started	Q122
6 Application for a patent/copyright/trademark	Q124
7 Purchase of raw materials, inventory and supplies	Q128
8 Purchase/lease/rent of equipment/facilities/property	Q131
9 Defined market opportunities	Q134
10 Developed project financial statements	Q137
11 Saved money to invest in the business	Q139
12 Invested your own money in this business	Q143
13 Asked financial institutions or other people for funds	Q145
14 Established credit with a supplier	Q149
15 Arranged childcare or household help to allow more time on business	Q151
16 Devoted full time to the business (35 h/week)	Q153
17 Hired any employees/managers	Q155
18 Opened a bank account exclusively for this business	Q160
19 Received money for the sales of goods/service	Q162
20.Does the monthly revenue now exceed the monthly expenses	Q163
21 Take any classes/workshop on starting a business	Q167
22 Listed new business in the phone book	Q171
23 Installed a separate phone line for business	Q173
24 Paid state unemployment insurance tax	Q175
25 Paid federal social security taxes (FICA)	Q177
26 Filed a federal tax return	Q179
27 List with Dun & Bradstreet	Q181

Appendix B:

Coeffecient Tables for Start-up Capital's Attributes [HC; SC; CC]

Social Capital Correlations

		1	2	3	4
1.Social Role Models (Strong Ties)	Pearson Correlation	1	. 17	**-. 310***	. 63
2.Professional Mentoring (Weak Ties)	Pearson Correlation	.017	1	.011	.325
3.Social Skills	Pearson Correlation	**-.310***	.011	1	**. 340****
4.Social Support by Non-owners	Pearson Correlation	.063	.325	**.340****	1

Pearson's coefficient: *. Correlation is significant at the 0.10 level; **. Correlation is significant at the 0.05 level; ***. Correlation is significant at 0.01 level

Human Capital Correlations

Pearson Correlation	1	2	3	4	5	6	7	8
1. Start-up Experience	1	**.213****	.026	.018	**-.464***	**-.121***	-.014	.004
2. Management Experience at New Start-ups	**.213****	1	**.324****	-.018	-.025	**-.479****	-.330	-.038
3. Management Experience	.026	**.324****	1	.040	-.001	-.042	-.024	-.002
4.Supervision Experience	.018	-.018	.040	1	**-.311***	-.002	.055	-.039
5. Technical Experience	**-.464***	-.025	-.001	**-.311***	1	.034	.033	-.010
6. Educational Attainment	**-.121***	**-.479****	-.042	-.002	.034	1	-.005	**.311****
7. Training	-.014	-.330	-.024	.055	.033	-.005	1	-.038
8. Experience in Family Business	.004	-.038	-.002	-.039	-.010	**.311****	-.038	1

Pearson's coefficient: *. Correlation is significant at the 0.10 level; **. Correlation is significant at the 0.05 level; ***. Correlation is significant at 0.01 level

Cognition Capital Correlations

Pearson Correlation	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Cognition Expectation by Sales	1	-.052	-.001	**.133****	-.063	.067	-.013	-.053	.068*	.054	**.553****	-.046	**.092****
2.CognitionDesire by Family Tradition	-.052	1	.690**	**-.306****	-.314	**-.149****	**.301****	**.469****	**-.167****	**-.156****	**-.233****	.028	**-.378****
3.Cog. Expectation Growth in Employment	-.001	**.690****	1	.011	**-.081***	-.051	**.123****	**.203****	.011	.055	-.029	**-.080***	.024
4.Cognitive Confidence	**.133****	**-.306****	.011	1	-.025	**.227****	.050	.038	**.404****	**.341****	**.420****	-.029	**.522****
5.Cognitive Style	-.063	-.314	**-.081***	-.025	1	.024	**-.097****	-.051	-.035	**-.392****	-.051	**.111****	-.017
6.Cognitive Information	.067	**-.149****	-.051	**.227****	.024	1	.020	-.049	**.293****	**.207****	**.163****	-.017	**.509****
7.Cognition Desire Family Inheritance	-.013	**.301****	**.123****	.050	**-.097****	.020	1	**.301****	**.085***	**.508****	-.027	-.011	**.125****
8.Cognition Desire by Power	-.053	**.469****	**.203****	.038	-.051	-.049	**.301****	1	**.119****	**.088***	**-.075***	-.022	.000
9.CognitionDesire by Learning	**.068***	**-.167****	.011	**.404****	-.035	**.293****	**.085***	**.119****	1	**.386****	**.333****	**-.083***	**.292****
10.Cogn. Desire by Income	.054	**-.156****	.055	**.341****	**-.392****	**.207****	**.508****	**.088***	**.386****	1	**.409****	**-.109****	**.365****
11.Cog. Satisfaction	**.553****	**-.233****	**-.029**	**.420****	**-.051**	**.163****	-.027	**-.075***	**.333****	**.409****	1	.002	**.239****
12.Risk Exp.	-.046	.028	-.080*	-.029	**.111****	-.017	-.011	-.022	**-.083***	**-.109****	.002	1	-.039
13. Persistence	**.092****	**-.378****	.024	**.522****	-.017	**.509****	**.125****	.000	**.292****	**.365****	**.239****	-.039	1

Pearson's coefficient: *. Correlation is significant at the 0.10 level; **. Correlation is significant at the 0.05 level; ***. Correlation is significant at 0.01 level

Appendix C:

PSED Industries
Health – Education- Government Services
Consumer Services
Business Services
Retail
Wholesale
Transportation and Communication
Manufacturing
Construction
Agriculture