

Passion, Resilience, Obsession &
Sustained Entrepreneurial Action:
the Path to
Entrepreneurial Success

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Abstract

Entrepreneurs are said to be passionate and resilient. Entrepreneurial action is a precursor to entrepreneurial success, and is logically dependent on the passionate behaviour and resilience of the entrepreneur. That passion and resilience are helpful to entrepreneurship is not disputed, but obsessive passion has been shown to be debilitating.

How is it that entrepreneurs can experience success if their passion for their ventures is both a positive phenomenon and a problematic one? How these seemingly diametrically opposed features of the one phenomenon can contribute to entrepreneurial success represents a gap in the knowledge about passion in the context of entrepreneurship. Addressing that gap will assist entrepreneurship's practitioners, educators and policymakers to understand and therefore manage or anticipate the implications of this important entrepreneurial phenomenon.

This research uses mixed methods to explore passion's contribution to entrepreneurial success. Interviews with 10 successful founding entrepreneurs were used to develop hypotheses and an explanatory model then tested using data derived from 215 founding entrepreneurs, who voluntarily participated in an on-line survey.

This research concludes that an entrepreneur's passion for their venture is both harmonious and obsessive in nature. However, each passion type contributes differentially to entrepreneurial outcomes. Resilience is found to work in correlation with harmonious passion to predict entrepreneurial success. Entrepreneurial intrusive thoughts are found to be part of the pathway to sustained entrepreneurial action. Thus, this research finds that passion, resilience and intrusive thoughts (a form of obsession) contribute to the explanation for an entrepreneur's capacity for sustained entrepreneurial action and/or achieve entrepreneurial success.

There are several limitations to this research. The characteristics of the entrepreneurs who participated in this research, the self-report nature of the research, the use and interpretation of qualitative results, the choice of the variables explored in the structural equation model, the use of new constructs as dependent variables and the development of new constructs from the subjective opinion of participants all represent possible limitations of this research.

Nonetheless, these results do present opportunities for further research. In particular, an opportunity exists to improve and develop further the new constructs and scales

developed in this research. The findings of venture related intrusive thoughts and their impact present an interesting area to examine further particularly in the context of work-life balance or psychological well-being. Finally, the results from The Passion Scale suggest an opportunity for further research examining the dualistic nature of the entrepreneurs' passion and its role in sustained entrepreneurial action and entrepreneurial success.

The confirmed presence of passion, resilience and obsession suggests entrepreneurship education programs should include information about these phenomena, how they may impact an entrepreneur, and how they may be managed or enhanced. The lack of association between business performance metrics and the amount of time the entrepreneur invests working in and on their venture sends a strong message to current and prospective practitioners about maintaining a balanced workload and delegating responsibility to others, as over commitment of personal time may not be related to venture performance.

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Declaration

This thesis:

- Contains no material which has been accepted for the award to the candidate of any other degree or diploma, except where due reference is made in the text of the examinable outcome;
- To the best of the candidate's knowledge contains no material previously published or written by another person, except where due reference is made in the text of the examinable outcome; and
- Where the work is based on joint research or publications, discloses the relative contributions of the respective workers or authors.

Signature:



Rosemary Fisher

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Key Abbreviations

CFA	Confirmatory Factor Analysis
CFI	Confirmatory Fit Index
DSM	Diagnostics & Statistics Manual
E1, E2, E3 etc	Entrepreneur 1, Entrepreneur2, Entrepreneur3 etc
EIT	Entrepreneurial Intrusive Thoughts
EFA	Exploratory Factor Analysis
EO	Entrepreneurial Obsession
ES	Entrepreneurial Success
EM	Expectation Maximisation
HP	Harmonious Passion
IT	Intrusive Thoughts
MAR	Missing at Random
MCAR	Missing Completely at Random
ML	Maximum Likelihood
MVA	Missing Values Analysis
NMAR	Not Missing at Random
OCD	Obsessive-Compulsive Disorder
OP	Obsessive Passion
PP	Presence of Passion
R1, R2, etc	Referent1, Referent2, etc
RES	Resilience
RMSEA	Root-Mean-Square Error of Approximation
SEA	Sustained Entrepreneurial Action
SEABusiness	Sustained Entrepreneurial Action Business
SEATime	Sustained Entrepreneurial Action Time
SEM	Structural Equation Model/Modelling
SRMR	Standardized Root-Mean-Square Residual
TLI	Tucker & Lewis Index

1. Introduction

1.1. Chapter introduction

This thesis presents the theoretical underpinnings for research developed to examine the contribution of passion to entrepreneurial success.

In this chapter the background, problem and aim of the research are presented. It describes the scope of the research, noting that it comprises two studies. Justification for the research is provided, the methodology described, and the outline of the mixed research methodology for the entire thesis is presented (see Figure 1-1 Chapter 1 Overview).

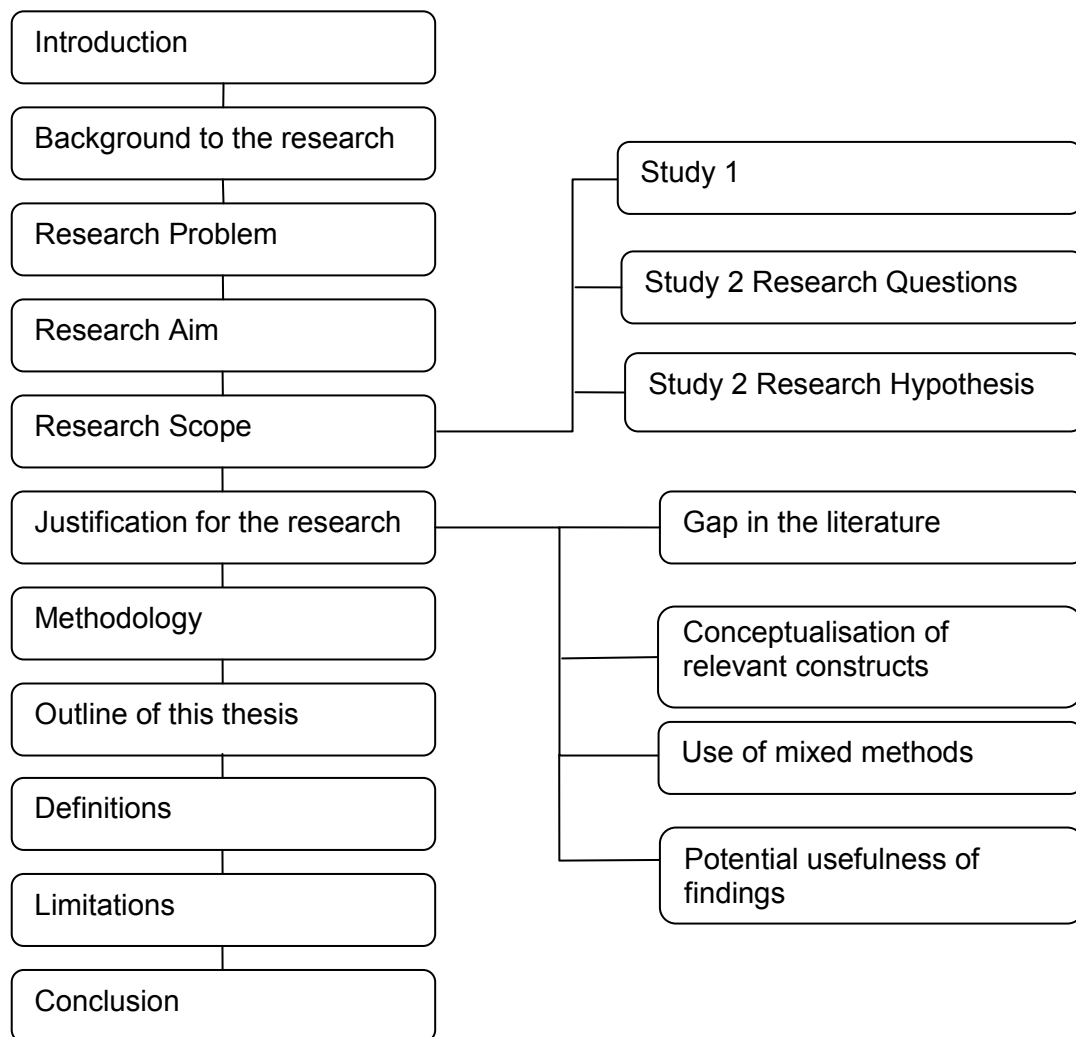
The chapter summary is preceded by the definitions used in the research, and the limitations of the research.

1.2. Background to the research

This PhD research explored the broad question of what it is about some people that facilitates them in achieving entrepreneurial success. It did this by examining how the entrepreneurs' passion for their venture, their personal resilience, and obsessional thoughts about the venture interrelate to facilitate their capacity for sustained entrepreneurial action, and through this action, to entrepreneurial success.

The link between entrepreneurship, innovation and economic growth is well understood (Schramm 2011). Indeed the rise in the standard of living over the past two centuries can be attributed to entrepreneurship and innovation across a range of industries and sectors (Stangler 2009). Out of entrepreneurship and innovation comes the creation of new firms and businesses, or regeneration and renewal of existing firms and businesses, which in turn stimulates economic growth and development (Dencker *et al.* 2009; Katz *et al.* 2004), thus leading innovative societies to experience improvements in living standards.

Figure 1-1 Chapter 1 Overview



Source: adapted from Perry (1998)

In Australia the Review of the National Innovation System explicitly acknowledged the contribution of innovation and entrepreneurship to sustainable national prosperity and wellbeing (Cutler 2008). Competition from our near neighbours China and India is eroding our competitive bases and, coupled with the recent experience of the global financial crisis, the nation's attention is now strongly focussed on the need for a National Innovation Agenda (Department of Innovation, Industry and Regional Development 2007). In May 2009 the Australian Government laid out a 10 year agenda for strengthening innovation and productivity, and reports against that on an annual basis (Department of Innovation, Industry, Science and Research 2011).

Understanding how entrepreneurial firms achieve their performance and sustainability is a key topic of research (De Zubielqui *et al.* 2008). In 2004 the Australian Government funded a 4-year project to undertake a study into independent entrepreneurship in Australia, and produce a series of reports on the factors that initiate, hinder and facilitate the emergence of new economic activities and organisations in Australia (Davidsson *et al.* 2011). In 2006, a six part portrait of entrepreneurial activity was produced as the primary source of data used to monitor entrepreneurial activity in the nation (Hindle *et al.* 2007). More broadly, national annual research is conducted Australia wide to collect and disseminate detailed information on entrepreneurship and innovation in Australia (Department of Innovation, Industry, Science and Research 2011).

Whilst governments are spurred on to invest in education and innovation as part of the foundation for, or stimulus to, continued economic growth (Stangler 2009), the importance of identifying, exploring and understanding the individual entrepreneur has been recognised (Shaver *et al.* 1991), because it is entrepreneurs who found businesses in order to propagate innovation (Schramm 2011). Much has been studied about the significance of entrepreneurship to society in general and the economy in particular (Acs *et al.* 2003; Baron 2002; Casson 2003; Fiet 2001; Minniti *et al.* 2008; Reynolds *et al.* 2002), and this is complemented by focussing attention on the individual entrepreneur. By identifying and understanding individual level components critical to entrepreneurial success, we may be able to increase the chances of identifying individuals likely to found successful ventures and minimise the economic and personal fall-out often associated with unsuccessful ventures. Such insight may also facilitate our ability to build education programs that are useful specifically to entrepreneurs (Nel *et al.* 2008).

An examination of autobiographies, scholarly articles, interviews with entrepreneurs, and popular press reports reveals passion to be an oft-cited and intrinsic element of entrepreneurial action (Baron 2002; Baum *et al.* 2004; Bird 1989; Graham 2006; Locke 2000a; McClune 2000; O'Toole *et al.* 2005; Shane *et al.* 2003; Torres 2003; Zeitsma 2005). Entrepreneurial opportunity recognition is an important precursor to entrepreneurial success, and a model of opportunity recognition cites uncertainty as a barrier to acting on a recognised opportunity (McMullen *et al.* 2006). It has been suggested that passion experienced in relation to a recognized entrepreneurial opportunity is the tipping point for whether or not that opportunity is acted upon (Brannback *et al.* 2006). More recently, passion's recognition as a key element of

entrepreneurial effectiveness has led to calls for a deeper understanding of passion and how it influences the entrepreneur (Cardon *et al.* 2009). Thus, although recognised as an important construct in entrepreneurial success, passion is a phenomenon that has only recently drawn the attention of researchers in an effort to understand and explain its important contribution.

1.3. Research problem

A body of empirical research exists that suggests passion is dualistic in nature and that it is a positive and pivotal part of the entrepreneur's individual identity as well as a problematic phenomenon. How then do entrepreneurs, apparently passionately, invest in their ventures and achieve success if passion has this dark side?

Entrepreneurs are said to be passionate and resilient. Entrepreneurial action is a precursor to entrepreneurial success, and is logically dependent on the passionate behaviour and resilience of the entrepreneur. That passion and resilience are helpful to entrepreneurship is not disputed, but obsessive passion has been shown to be debilitating. How is it that entrepreneurs can experience success if their passion for their ventures is both a positive phenomenon and a problematic one? How these seemingly diametrically opposed features of the one phenomenon can contribute to entrepreneurial success represents a gap in the knowledge about passion in the context of entrepreneurship. Addressing that gap will aid our understanding of how passion contributes to entrepreneurial success.

1.4. Research aim

The thesis investigated the influence of passion on entrepreneurial success. In so doing, a key question for the field of entrepreneurship, namely why some people are able to discover and exploit entrepreneurial opportunities (Shane *et al.* 2000), was addressed. It is timely to examine this question, as interest in the entrepreneur, that individual who alone will create a new venture (Shaver *et al.* 1991), is currently on the entrepreneurship research agenda (Lumpkin 2011).

The research aims to establish firstly, how passion contributes to entrepreneurial success; and secondly, given the dualistic nature of passion, what other important variables help explain an entrepreneur's ability to achieve entrepreneurial success. The aim of this research was to contribute towards an understanding of the role of

passion in achieving entrepreneurial success, and thereby assist entrepreneurship's practitioners, educators and policymakers to understand and therefore manage or anticipate the implications of this particular entrepreneurial phenomenon.

1.5. Research scope

This research explores and tests the relationship between passion and entrepreneurial success. To achieve this, a qualitative study (Study 1) was first undertaken to explore how passion influences entrepreneurial success via a pathway that includes other phenomena proposed to be important in the explanation. Then, a quantitative study (Study 2) was conducted to test a model of how passion relates to entrepreneurial success and also to test related the hypotheses.

To conduct this research information and guidance have been sought from the field of psychology, a field that has been identified as being able to make a large contribution to the domain of entrepreneurship (Baron 2002; Hisrich *et al.* 2007), as well as from within the field of entrepreneurship itself. Within the field of psychology the conceptualisation of, and research into, passion (Vallerand *et al.* 2003), resilience (Garmezy 1996), and obsession (Rachman *et al.* 1980) are applied to the domain of entrepreneurship.

1.5.1. Study 1

Study 1 stands alone as a qualitative exploratory study of passion that examined the nature of the entrepreneur's passion and how that passion affects motivation, uncertainty, entrepreneurial action, and ultimately entrepreneurial success. It used a conceptual framework drawn from the literature to contain the focus of the interviews. This conceptual framework suggested that passion can overcome uncertainty; that overcoming uncertainty is critical to entrepreneurial action; and that engaging in entrepreneurial action is a logically necessary precursor to entrepreneurial success. The framework recognised that passion is dualistic in nature and that personality is part of the explanatory pathway. It also suggested that the entrepreneur's capacity for self-reflection and insight may moderate the downside of obsessive passion, thus suggesting an explanation for why entrepreneurs can be successful despite the dualistic nature of passion.

The hypotheses developed from Study 1 represent a significant shift in the understanding of the importance of particular phenomena proposed to explain the pathway from passion to entrepreneurial success. Thus, Study 1 became a precursor to the main research, Study 2, and is wholly contained within a separate chapter (see Chapter 3).

1.5.2. Study 2 research questions

Informed and guided by Study 1, Study 2 addressed the following research questions:

- How does resilience contribute to entrepreneurial success?
- What is the nature of passion and how does passion contribute to entrepreneurial success?
- What is obsession and how can obsession contribute to entrepreneurial success?
- How do resilience, passion and obsession fit into a new conceptual model explaining entrepreneurial success?

Study 2 tested the suggestion derived from Study 1 that founding entrepreneurs experience an obsession for their ventures, and that this obsession, in conjunction with their passion and resilience, enables them to engage in sustained entrepreneurial action in the face of challenges, uncertainty and stress of entrepreneurship and therefore to potentially experience entrepreneurial success. From Study 1 emerged the observation that obsessive passion may not be problematic, and that both types of passion may be necessary contributors to entrepreneurial success.

Study 2 used both existing scales and scales developed for the purpose of this research to test the hypotheses.

1.5.3. Study 2 research hypotheses

Derived from the results of Study 1, the following hypotheses were tested in Study 2:

- H₁ Entrepreneurs display relatively high levels of passion for their ventures as revealed by the mean ratings of The Passion Scale.
- H₂ Entrepreneurs' obsessive passion is greater than their harmonious passion as revealed by the mean ratings of The Passion Scale.

- H₃ Australian entrepreneurs are relatively more obsessively passionate about their passionate activity than are other sample populations about their passionate activity, as revealed by comparative ratings of The Passion Scale.
- H₄ Obsessive passion, as indicated by The Passion Scale is positively correlated with SEABusiness and SEATime.
- H₅ Harmonious passion, as indicated by The Passion Scale is positively correlated with ES.
- H₆ Entrepreneurs display relatively high levels of resilience as revealed by the Connor Davis Resilience Scale.
- H₇ Resilience is positively associated with SEATime and SEABusiness.
- H₈ Entrepreneurs experience obsessional thoughts about their ventures as evidenced by the presence of *intrusive thoughts* about their ventures that are: a) unwelcome; b) difficult to control; and c) internally attributed.
- H₉ Entrepreneurs experience confirmatory features of obsession, specifically the thoughts about their ventures: a) generate feelings of anxiety; b) are of great personal significance; and c) motivate action.
- H₁₀ Entrepreneurial obsession¹ is positively correlated with SEABusiness and SEATime.

1.6. Justification for the research

The value in this research lies in its contribution to the gap in the entrepreneurship literature; practical implications for the domain of entrepreneurship of the conceptualisation of particular constructs; choice of mixed methodology to examine the phenomenon of passion; and findings which are potentially useful.

1.6.1. Gap in the literature

This research contributes to an emerging area of interest in the field of entrepreneurship, that of the role of passion in entrepreneurship. It also explored a

¹ Renamed *Entrepreneurial Intrusive Thoughts (EIT)* as a consequence of factor analysis, see Chapter 5.

possible role for obsession in entrepreneurship, not a phenomenon usually explored within the context of entrepreneurship.

In examining passion, this research accepts that it is dualistic in nature, either harmonious or obsessive (Vallerand *et al.* 2003). This construct has had few empirical tests in the entrepreneurship literature, even though its theoretical existence has been acknowledged by entrepreneurship researchers (Brannback *et al.* 2006; Cardon *et al.* 2010; Cardon *et al.* 2009; Chen *et al.* 2009). Furthermore, this research examines the positive aspects of obsessive passion, which have been noted in the psychological literature (Amiot *et al.* 2006; Sheard *et al.* 2009; Vallerand 2008) and which may particularly resonate within entrepreneurship.

1.6.2. Observed entrepreneurial phenomena

There is an emerging view that research should be more than just the traditional paradigm-driven approach to accumulating new knowledge, and that the field of entrepreneurship can take the lead by reporting not just tests of theories but also observed entrepreneurial phenomena (Lumpkin 2011). Arising from Study 1 is the suggestion of an unexpected phenomenon, that of “obsession” which has led to the development of a theory, tested in Study 2, that entrepreneurs experience an obsession for their ventures, and that this “entrepreneurial obsession” is part of the explanation as to how an entrepreneur can sustain entrepreneurial action despite the inherent difficulties.

The ninth entrepreneur interviewed in Study 1 described what sounded like an obsession when talking about how his thoughts about his business affected him. The respondent also said at the end of the interview that had he still been the CEO of a publicly listed company he would not have spoken in the frank manner in which he had. Because of this data, other interviews were re-examined for evidence of obsession. A second entrepreneur had spoken of keeping a notebook by the bed so that dream state cognitions associated with the venture could be documented on waking. A third had mentioned never being free of thoughts of the venture.

In exploring obsession, because it may form part of the explanation to the question of why some can sustain entrepreneurial action (Lumpkin 2011), this research hopes to make a contribution to understanding entrepreneurial phenomena. Following in the footsteps of the exemplars of breakthrough research who illuminate the medical

sciences², this research explores a novel area guided by observation and informed by hunch (Miller 2007), albeit by borrowing a framework (clinical obsessions) from psychopathology to examine that observation and hunch. Specifically:

- Guided by observation
 - the general community's observation that "obsession" is somehow connected with "successful entrepreneurs", and
 - the clinical community's finding of the presence of obsession in the population beyond the clinically ill.
- Informed by hunch
 - An obsession is an intrusive thought, imbued with great personal significance, which motivates action and stimulates an affective reaction (Rachman *et al.* 1980, p.21). These descriptions are not unlike those used by entrepreneurs in talking about how thoughts about their ventures impact them.

The observation and description of that which falls between paradigms, is pre-paradigmatic or pre-theoretic and is based on argument or conjecture or is purely empirical (Miller 2007) can create knowledge that is both relevant and rigorous (Lumpkin 2011). Thus, following Lumpkin's (2011) observation that there is much to be learned from observing and interpreting phenomena, this research chose to explore the suggestion emerging from Study 1 that entrepreneurs experience obsessional thoughts about their ventures and that these obsessions may contribute to productively to entrepreneurial outcomes.

1.6.3. Conceptualisation of relevant constructs

To examine the research questions required conceptualisation of the constructs *entrepreneurial action* and *entrepreneurial success*. Emerging from Study 1 is the revised construct *sustained entrepreneurial action*. In order to test these constructs as part of a model pathway, measures were developed. Therefore, this research offers the discipline a conceptualisation of, and associated measures for, two frequently

² For example: Alexander Fleming inadvertently discovered penicillin when a mysterious spore killed the bacteria cultures he was working on; Frederick Banting used conjecture and hunch and discovered how to extract insulin; and Ignaz Semmelweis observed a difference in mortality rates between patients nursed by staff coming from the morgue and those nursed by staff not coming from the morgue. His conclusions about the benefits of hand washing conflicted with current theory and practice, but ultimately informed the bacterial infection theories of Pasteur, Lister and Koch (Miller 2007).

mentioned and observed phenomena in the entrepreneurship literature, on which others can build or extend.

1.6.4. Use of mixed methods

The use of both qualitative and quantitative methodologies in the conduct of the research strengthens the justification for the research hypotheses tested. Specifically, by asking successful entrepreneurs about their experiences and formative years themes and patterns emerged that guided both the interpretation of the literatures reviewed and the development of the hypotheses and theoretic model. They also illuminated how the variables might have interacted so that a picture emerged of how individual level behaviour and experiences could offer an explanation of successful outcomes.

1.6.5. Potential usefulness of findings

Finally, the research findings are potentially of theoretic and practical usefulness. This research contributes to the discussion on entrepreneurial passion, resilience, obsession and the nexus between entrepreneurial action and entrepreneurial success. The theoretic and practical application of the research:

- Contributes to identifying the type of passion typically found in entrepreneurs and highlights the upside of obsessive passion.
- Provides the discipline with a conceptualisation of frequently observed constructs (sustained entrepreneurial action and entrepreneurial success) that others may seek to build on, and provides measures for those constructs that others may chose to utilise.
- Explores a phenomenon that is occasionally mentioned in the popular press in relation to entrepreneurs, that of obsession, and utilises the literature on clinical obsessions to guide the exploration of how entrepreneurs experience intrusive cognitions about their ventures. In so doing, the research offers a suggestion of another phenomenon related to entrepreneurship that may be worthy of future investigation, that of entrepreneurial intrusive thoughts.
- Finds that no significant relationship exists between an entrepreneur's sustained entrepreneurial action and their perceptions of entrepreneurial

success, as these constructs have been developed in this research. This raises an opportunity for entrepreneurship scholars to reconsider a basic implied relationship between the entrepreneurs' personal efforts and commitment and the success they subsequently perceive.

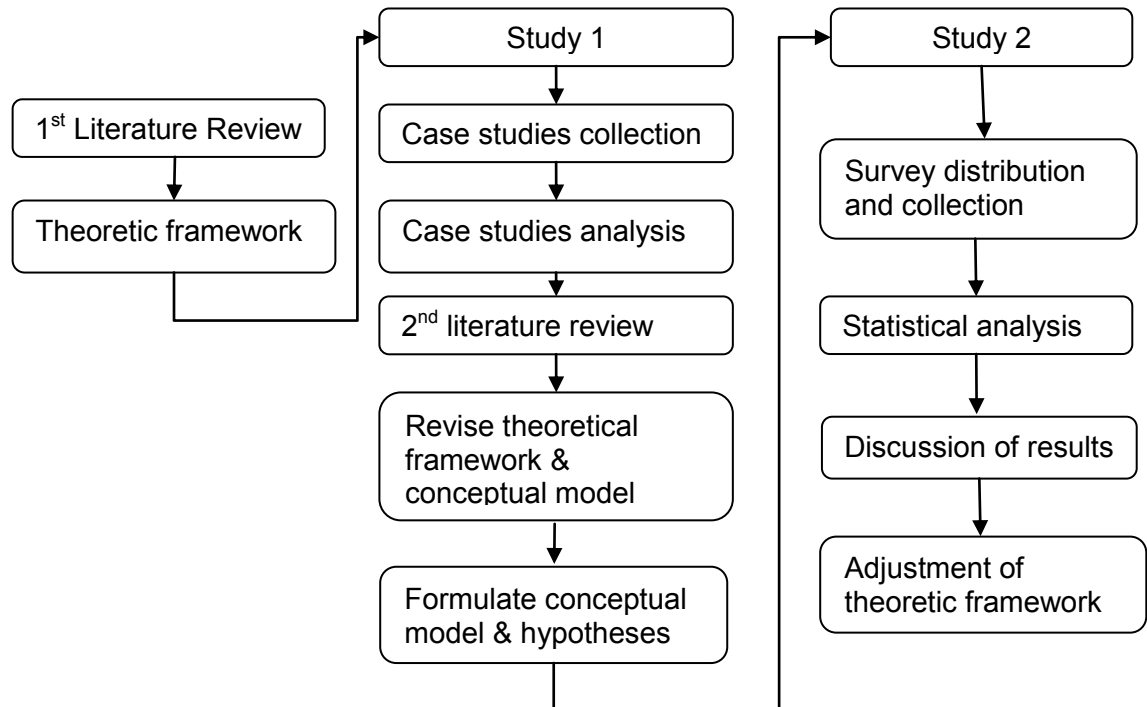
- Utilises mixed methodology to explore and then test key constructs. By using Study 1 to explore the entrepreneurs' experience of passion, and developing testable hypothesis from these results, the research contributes to the body of knowledge in the domain of entrepreneurship.

Practitioners, educators and policy makers associated with the area of entrepreneurship can bring the implications of these concepts into their plans, courseware and policymaking.

1.7. Methodology

This research used both qualitative and quantitative methodologies to identify and verify theoretical constructs. Figure 1-2 gives an overview of the methodology.

Figure 1-2 Research Methodology Overview



Source: adapted from Perry (1998)

Qualitative Research. Qualitative methodology is suitable for use where there is a limited understanding of the phenomena of interest and their relationships (Yin 2003), and for developing theory and constructs (Eisenhardt *et al.* 2007).

Study1 is a qualitative study of 10 entrepreneurs recognised as being successful³. This was chosen as the best method to elicit meaningful insights into the phenomena that comprised the first conceptual framework. Inviting unconstrained responses to a range of questions enables the entrepreneur to speak about personal experiences and successes and to take that discussion where the entrepreneur wants it to go, thus providing the researcher with a richer source of information than would be available in a structured series of questions or short answer questions.

The results of Study 1 were used to develop the model and frame the hypotheses tested in Study 2.

Quantitative Research. Quantitative analysis helped to verify the theoretical constructs developed and gives statistical verification and generalisability to these findings so that practitioners, academics and policy makers may make use of them (Eisenhardt 1989).

The results were analysed using SPSS and MPlus to conduct descriptive, factor and reliability analyses, and AMOS to conduct confirmatory factor analysis and SEM. SEM allows for both confirmatory and exploratory modelling and is seen as a more powerful extension of the general linear model (Garson 2008).

Study 2 tested 10 hypotheses and is discussed in Chapters 5 and 6. A questionnaire was developed guided by the results of Study 1. It included established measures, demographic questions and questions designed to address three constructs articulated by the researcher. A total of 424 entrepreneurs responded to the survey; it was promoted via professional and networking associations to which entrepreneurs typically would belong; through snowballing of friends and professional acquaintances of the researcher, and by direct contact with entrepreneurs whose businesses appeared in entrepreneurship-related online magazines, websites, lists and discussions.

The results of Study 2 provide a revised best-fit model to explain the role of passion in entrepreneurial success. Specifically, Study 2 concluded that entrepreneurial passion is both harmonious and obsessive in nature. The entrepreneurs' harmonious passion

³ The term "successful" is defined in the literature review.

works in conjunction with their resilience to contribute to entrepreneurial success. The entrepreneurs' obsessive passion works in conjunction with entrepreneurial obsession and contributes to sustained entrepreneurial action, and entrepreneurial success. Surprisingly, sustained entrepreneurial action is not a precursor to entrepreneurial success as conceptualised in this research.

1.8. Outline of this thesis

This thesis proceeds as follows (see Figure 1-3 Thesis Overview):

Chapter 1 – Introduction. This chapter discusses the background to the research problem. It explains the importance of entrepreneurs to the Australian economy, why it is important to understand the components critical to entrepreneurial success, and how passion is linked to entrepreneurial success. The research problem is presented, the gap in the literature arising from the research problem articulated, and the research aim presented.

The scope of the thesis is then outlined. Study 1, which stands alone as an exploratory study from which Study 2 is developed, is described. Study 1 provides the conceptual model for entrepreneurial action that was the starting point of this investigation, and notes the significant shift in understanding that emerged from the results of this study. Study 2, emerging from Study 1, has its own research questions, and explores the hypotheses developed in Study 1. These form part of the scope of the thesis.

Justification for this research is provided in five areas. Two gaps in the literature are addressed by the research. One is the contribution of obsession passion to entrepreneurship, and the other explores the intrusive thoughts of the entrepreneur by using a model of obsession. Two relevant constructs to the field of entrepreneurship are conceptualised, and the value in using mixed methodology is highlighted. Finally, the potential usefulness of the findings is mentioned.

Chapter 1 outlines the qualitative and quantitative methodology used in this thesis, giving an overview of why each was selected and what was examined in each. This chapter contains an outline of each of the chapters in the thesis, describing the key contents of those chapters, as well as providing the key definitions used in the thesis. The limitations of the thesis are included, and the chapter conclusion summarises its content and introduces Chapter 2.

Chapter 2 - Literature Review. The Literature Review weaves together the literature on passion, resilience and obsession and seeks to understand how these phenomena may contribute to entrepreneurial action and entrepreneurial success. The literature review is a compilation of two distinct phases of literature review: the first prior to commencement of Study 1, the second in response to emergent data from Study 1. To facilitate understanding, the literature is described by the key elements of Study 2: entrepreneurship, passion, resilience, and obsession.

The literature review commences with a review of the main perspectives through which entrepreneurship is studied, and shows how this thesis views the entrepreneurial phenomena predominantly through the lens of psychology. The background to the study is laid out, leading the reader into the main sections of the literature review.

The literature review commences by seeking an understanding of the terms *entrepreneur* and *entrepreneurship*. In so doing, a definition for the key construct of *sustained entrepreneurial action* is derived and presented. The meaning of *success* in the context of entrepreneurship is also reviewed, and used to inform the development of the construct *entrepreneurial success*.

Passion, the main variable in this research, is then reviewed in the literature. The literature is reviewed seeking a definition of passion, and its presence in the entrepreneurship literature is explored. The dualistic model of passion is reviewed in the literature, and the results of empirical testing of both harmonious and obsessive passion presented.

The variable resilience is reviewed. An understanding of this variable is developed through the reviewing of the literature, and how resilience is understood to impact entrepreneurship is also reviewed.

Finally, obsession is reviewed in the literature. Because an obsession is an intrusive thought that can lead to illness the clinical literature is explored to gain an understanding of obsession. Literature on the term *intrusive thoughts* is also explored, this being the term that some use to distinguish between the clinical obsession and non-clinical obsession. The literature is used to develop a model for how the presence of obsession is identified for use in Study 2.

The literature review chapter concludes with a summary of its content, and briefly heralds the next chapter, which contains the design, analysis and conclusions for Study 1.

Chapter 3 – Study 1. This chapter gives a detailed explanation of the overall design of Study 1, the results of which lead to a significant shift in the understanding of the variables important to understanding passion's role in entrepreneurial success. Accordingly, this study stands alone in this thesis, having its own (but similar to Study 2) research background, issues, and questions.

The chapter commences with a description of the background to the research, explaining how passion could overcome uncertainty in a model of opportunity recognition, leading to entrepreneurial action and ultimately entrepreneurial success. Qualitative methodology chosen to explore the constructs and the rationale for using this methodology is presented. The research is justified and choice of case studies using in-depth interviewing techniques is defended.

The methodology is provided in detail. The conceptual framework that guided Study 1 is described and presented in diagrammatic form. The overall design of the study and the interview protocol are presented. The sampling technique is outlined and recruitment procedures described.

The chapter contains the analysis of the data providing the detail on the transcripts of the interviews, categories and coding, and memos developed. The results of the analysis are discussed in relation to the variables that comprised the conceptual framework. Additionally, other interesting observations that emerged from the data are also presented. Emerging from the data were unexpected new constructs (resilience and entrepreneurial obsession) and these are discussed, as are changes in the understanding of the importance of the variables in the conceptual framework that guided this research. A revised model is described and the results of the hypotheses tested in Study 2 are presented.

Finally, the research questions are revisited and a new explanation for how passion contributes to entrepreneurial success is proposed. The chapter concludes by reviewing the journey of the research, and introducing the next chapter, Study 2 Methodology.

Chapter 4 – Study 2 Methodology. This chapter gives a detailed explanation of the overall design of Study 2, the paradigm of the enquiry, and the statistical techniques and procedures used to analyse the data.

The steps in the development of the survey instrument are detailed. Each of the validated survey measures used is described, and the new constructs explained and

their measures described. The pilot activity, ethics approval, unit of analysis and recruitment procedures follow.

The procedure for analysing the data is laid out. The missing values analysis and missing data procedures that were followed are detailed. Since both formative and reflective measures are used in this research the difference between these types of measures and their implications for data analysis are presented. This section also describes the respondents who attempted and completed the on-line survey that was used to capture the data analysed in Study 2.

Data screening and assumption testing techniques are detailed. The rationale underlying the techniques for both reflective and formative measures is presented, and benchmarks to be applied in this research are stated. As structural equation modelling is used to test the final model, the underlying assumptions, criteria and benchmarks are described.

The chapter concludes with a summary of its content. The subsequent chapter, Study 2 Analysis, is introduced.

Chapter 5 – Study 2 Analysis. In this chapter, the data collected for Study 2 is analysed.

How the data was prepared for analysis is explained, including the identification of those surveys completed by individuals who did not meet the criteria of *entrepreneur* for the purposes of this research. The treatment of missing data is discussed. The overall outcome of this analysis is a data set of 215 respondents.

The descriptive results for the demographic data are presented, and then the results for each construct. For existing measures, the results are compared to other research studies using these measures, the constructs are confirmed and discriminant validity examined. Exploratory factor analysis is used to examine the new constructs. Internal reliability estimates for all the factors are presented.

The confirmed factors for the existing constructs and the emergent factors for the new constructs are tested in the model derived from Study 1. Modifications are made, and the final best-fit model is described, tested and reported. The results of the tests of the hypotheses derived from Study 1 are presented.

The chapter concludes with an overview of the analysis of the study, leading into Chapter 6 Discussion and Conclusions.

Chapter 6 – Study 2 Discussion and Conclusions. The final chapter of this research presents the discussion of the results of Study 2, and draws conclusions arising from the research, in particular about passion's contribution to entrepreneurial success.

The discussions of the Study 2 analysis are presented under the key constructs of passion, resilience, obsession, sustained entrepreneurial action, and entrepreneurial success. The hypotheses and results are revisited; the results discussed, and implications and insights arising from these results are proposed. The contribution of each construct to entrepreneurship is suggested.

The results of the final best-fit model are discussed in the light of the lack of fit of the model initially proposed that emerged from Study 1. How each variable contributes to a best fit explanatory model is described.

The recommendations and conclusions are presented. A summary of the results, as they best explain the relationships found between the dependent and independent variables, is provided.

The significance of the research is proposed to be found in four areas. The first is the contribution of this mixed methods research to the understanding of the dualistic nature of passion in entrepreneurship. The second is the description and exploration of a theory about obsession in entrepreneurship, and its relationship with passion and possible contribution to entrepreneurial success. Thirdly, this research uses quantitative methods to confirm the presence of resilience in entrepreneurs, a phenomenon that has long been suspected but does not appear to have been tested in entrepreneurs. Fourthly, the research attempts to capture and describe two key entrepreneurial constructs – sustained entrepreneurial action and entrepreneurial success, thus providing future researchers who wish to examine these constructs with a basis to build upon. Finally, this results emerging from the first qualitative exploratory study were used to inform and develop the variables to be tested in the second quantitative study.

Ultimately, however, this research contributes to the field of entrepreneurship by providing some insights into why some and not others are able to succeed at entrepreneurship, and how passion may contribute to that entrepreneurial success.

The implications arising from this research that may be of interest to entrepreneurship's policy makers, educators and practitioners associated with the area of

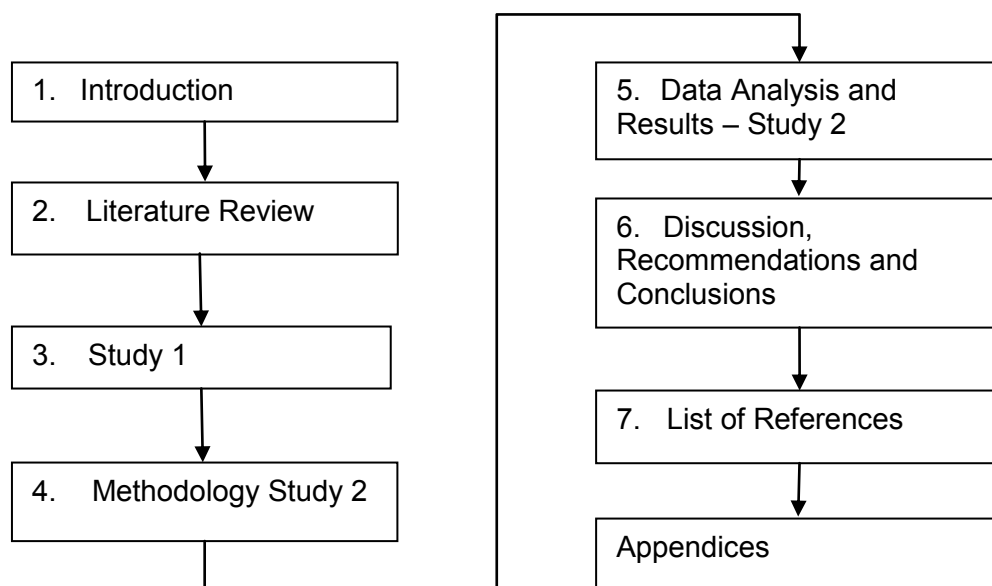
entrepreneurship are described. Future research opportunities arising from this research are proposed, and the limitations of the research are articulated.

Finally, a summary paragraph reviews the journey of this thesis concluding that passion is an emerging field of research within entrepreneurship. Therefore, passion as an area of research interest is likely to evolve further, and this research sheds some light into key areas that could benefit from further research.

Appendices. All appendices that support the research but are not included in the main document are included before the bibliography.

List of References. The bibliography lists all references cited in the research, design, and conduct of this research.

Figure 1-3 Thesis Overview



Adapted from Perry (1998)

1.9. Definitions

As definitions adopted by researchers are not uniform, the key and controversial terms are defined in this section.

Entrepreneur - For the purposes of this research, an entrepreneur is defined as someone who:

- Has founded a for-profit business (Kirzner 1997; Schumpeter⁴ 2004),
- From an opportunity he or she identified (Casson *et al.* 2007; McMullen *et al.* 2006),
- In which he or she holds (or held) a majority ownership (Brandstätter 1997).

Entrepreneurship - For the purposes of this research entrepreneurship refers to the processes, in and around the for-profit business or businesses established by the entrepreneur (Baum *et al.* 2004; Foss *et al.* 2007; Hisrich 1990; Kirzner 1997), and through which future goods and services are discovered, evaluated and exploited (Shane *et al.* 2003).

Entrepreneurial success - Given the diversity of potential indices for entrepreneurial success (Rauch *et al.* 2000), this research took the view that the construct would be derived largely from the opinion of successful entrepreneurs. For the purposes of this research, entrepreneurial success is conceptualised using the results of Study 1 informed by the review of the literature on entrepreneurial success. Therefore, entrepreneurial success is the entrepreneurs' personal satisfaction with their lives as an entrepreneur and their ventures in terms of growth and attainment of their goals.

Sustained entrepreneurial action - For the purposes of this paper, entrepreneurial action is accepted as:

- Activity that is dependent upon the individual, and the environment, both in combination and viewed through the lens of a business ecosystem (Porter *et al.* 2010),
- Occurring at any stage of the entrepreneurial process (Frese 2007),
- For the purpose of generating value (Foss *et al.* 2007).

This construct evolved to *sustained entrepreneurial action*, in an effort to capture the importance of entrepreneurial action to entrepreneurial success: that is if you do not stay at the business of your venture, your ability to achieve success, no matter how success is defined, is compromised (Rauch *et al.* 2000). Evidence of the presence of *sustained entrepreneurial action* is developed from indices derived from the business ecosystem comprising:

- The amount of time the entrepreneur commits to the venture.

⁴ Work originally published in 1934

- Business performance indicators which are ranked according to whether or not growth in these indicators was experienced.

Obsession – For the purposes of this research, an obsession is an intrusive thought that is unwanted, difficult to control and internally attributed (Rachman *et al.* 1980, p. 21). Rachman *et al.* distinguish the intrusive thoughts of an obsession from broader definitions of “intrusive thoughts” by requiring that obsessional intrusive thoughts be characterised by personal significance and a quality of repugnance (Rachman *et al.* 1980, p. 261).

Passion – The definition of passion, described by Vallerand *et al.* (2003) is used for this research. That is, passion is a strong inclination towards a self-defining activity that one likes (or even loves), finds important and in which one invests time and energy (Vallerand *et al.* 2003).

Resilience – Resilience is manifest competence despite exposure to significant stressors. It is the combination of psychosocial elements and biological predispositions that result from an aggregation of protective factors (Garmezy 1996; Rolf 1999).

1.10. Delimitations

It is appropriate to state the parameters of the study.

Type of entrepreneur - The study was based on entrepreneurs who had founded for-profit business. These entrepreneurs are distinct from those that bought into an existing business or purchased a franchise business, or those whose business is established as a not-for-profit or social entrepreneurship. Therefore, results may not be generalised beyond founding entrepreneurs of for profit ventures.

Culture - Since all entrepreneurs were Australians, the generalisability of the results might be restricted to only entrepreneurs who operate within the Australian business environment and show typical Australian cultural characteristics.

On-line recruitment – The surveys were completed on-line. Therefore the research may not be generalisable to entrepreneurs who do not participate in on-line connectivity.

1.11. Chapter summary

This chapter introduces the theoretical underpinings of the research undertaken to examine the role of passion in the experience of entrepreneurial success. Specifically, the structure of the research has been scoped out and the format of the thesis described.

The background to the research lays out the linkages between the passion of the entrepreneur and its important implications. From this, the research problem has been articulated, the research issues clarified, and the research justified. The gaps in the literature addressed by this research are described, and the methodology adopted has been briefly described before an outline of the each chapter is provided. Key definitions and terms are listed within this section, and the delimitations of the research have been stated.

The next chapter is the literature review from which the constructs, theories and hypotheses explored and tested in the two studies of this thesis were drawn, developed and refined.

2. Literature Review

2.1. Chapter introduction

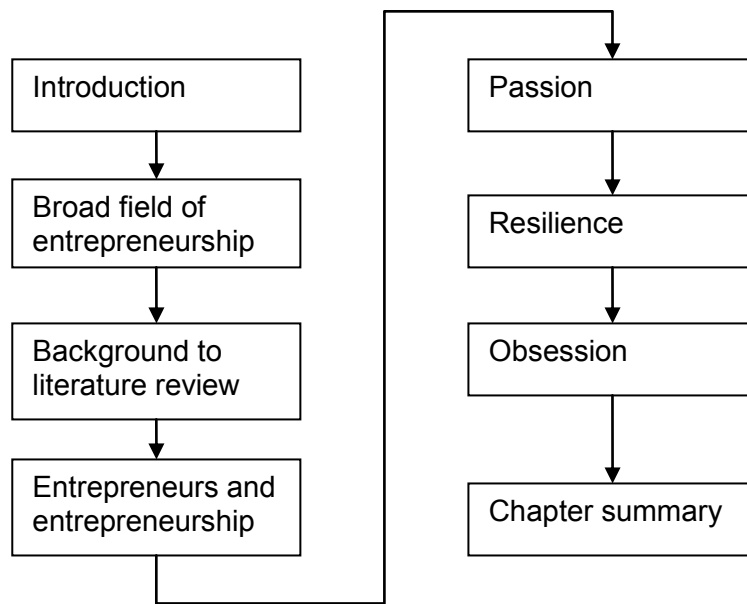
In this chapter, the key variables examined in the research were reviewed in the literature. The initial literature review informed Study 1, but the results of Study 1 led to a rethinking of the variables of interest and a return to the literature. Consequently, this literature review reflects two distinct phases of this research – the initial framing of the work prior to Study 1, and a revision of the conceptual framework and development of hypothesis prior to Study 2. However, after considerable thought as how best to present the evolution of the literature that informed the research, this two-stage process is not evident in the review format, and much literature used to frame the initial project has not been included. Instead, the literature review is presented under the key constructs that underscore the overarching research questions articulated in Chapter 1 and which comprise the model tested in Study 2.

In this chapter, the broad field of entrepreneurship is outlined, providing a background to the literature review. The literature from which the key variables have been derived is then considered: entrepreneurship and entrepreneurs, sustained entrepreneurial action, entrepreneurial success, passion, resilience and obsession. Figure 2-1 outlines the chapter.

2.2. Broad field of entrepreneurship

The importance of entrepreneurship to society in general and the economy in particular is both self evident and clear from scholarly theorising and research (Acs *et al.* 2003; Baron 2002; Casson 2003; Fiet 2001; Minniti *et al.* 2008; Reynolds *et al.* 2002). Despite this, the field of entrepreneurship scholarship has developed in a fragmented manner. The conceptual frameworks and theories of several disciplines inform it, and the phenomena investigated are diverse (Alvarez 2005; Cooper 2003; Hisrich *et al.* 2007; Reader *et al.* 2006; Zahra *et al.* 2001).

Figure 2-1 Chapter 2 overview



Adapted from Perry (1998)

In recognition of its importance to society, scholars sought to address the shortcomings of the field by creating entrepreneurship as a unique discipline in its own right (Acs *et al.* 2003; Gartner 2007; Shane *et al.* 2000) underpinned with frameworks grounded in well established theories (Segal *et al.* 2005), which could be tested by empirical data (Gartner *et al.* 2002; Zahra 2007). This drive has resulted in dynamic growth in the field over the last 20 years as evidenced by increased numbers of: scholars affiliating with entrepreneurship focussed organisations, entrepreneurship journals, and citations of entrepreneurship articles (Wiklund *et al.* 2010). This maturing of the field is further evidenced by the coalescence of research around central core themes, issues, methodologies and debates (Wiklund *et al.* 2010).

Nonetheless, a diversity of perspectives is used to explore and examine entrepreneurship (Shane 2006). Dominant among these are economics and psychology. Economic theories of entrepreneurship examine it from the perspective of function and behaviour (McMullen *et al.* 2006). Psychological theories of entrepreneurship examine it from the perspective of individual level differences (Baron *et al.* 2011).

This thesis is interested in exploring and understanding entrepreneurship from the perspective of the entrepreneur recognizing. This is important, as Shaver *et al.* so pithily observe in regard to entrepreneurship research:

The result has been a tendency to concentrate on almost anything except the individual. Economic circumstances are important; social networks are important; entrepreneurial teams are important; marketing is important; finance is important; even public agency assistance is important. But none of these will, alone, create a new venture (Shaver et al. 1991, p. 39).

2.3. Background to literature review

Why do some people and not others become entrepreneurs (Shane *et al.* 2000)? The search for the character, trait or situational premise that explains the capacity of a person to function effectively in the face of the adversity, stress, and uncertainty of entrepreneurship, and what differentiates them from non-entrepreneurs, has generated considerable discussion (Alvarez 2005; Gartner 1988; Sarasvathy 2004). It is an important question, because in the answer to this question lies the potential to target, expand or enhance the pool of entrepreneurs and by so doing the wealth of the community.

Whilst there is considerable focus in the literature on the positive aspects of entrepreneurship, the benefits that it brings to the economy and the individual entrepreneur, there is also factual and anecdotal evidence that being an entrepreneur generates a wide range of stressors (Alstete 2008) that can lead to reduced psychological (Hmieleski *et al.* 2008) and physical well-being (Burger 2008). For example, the bankruptcy of a business leads to a process of grief (Shepherd *et al.* 2009), and the behaviour exhibited by entrepreneurs has been described as “Type A” or heart-attack prone (Begley *et al.* 1987; Burger 2008). Nonetheless, entrepreneurs clearly take action in pursuit of their business goals and in the face of intense pressures (Timmons *et al.* 2009). Whether these pressures are greater than those experienced by managers or non-founders has been the subject of discussion (Timmons *et al.* 1990).

Kets de Vries (1985) applied the expression “the dark side” to entrepreneurship and use of the term to describe less positive aspects of entrepreneurship has crept quietly into entrepreneurship’s literature. The “dark side of entrepreneurship” has been used

to allude to the formative experiences of the entrepreneur (Kets de Vries 1985); the difficulties arising from the interface between entrepreneurial characteristics and managing an entrepreneurship (Beaver *et al.* 2005); the response by the entrepreneur to the stress inherent in the processes of entrepreneurship (Shepherd *et al.* 2009); the downside of entrepreneurial passion (Fisher *et al.* 2009); and the suggested link between psychopathology and entrepreneurship (Hisrich *et al.* 2007).

2.4. Entrepreneurship and entrepreneurs

The terms “entrepreneurship” and “entrepreneur” have no definitively accepted meaning in the literature (Frese *et al.* 2001; Gartner 1988; Nicolaou *et al.* 2008). The issue of definitions for the domain of entrepreneurship continues to exercise discussion amongst scholars (Mitchell 2011), and spills over into definitional issues for domains that overlap or intersect entrepreneurship such as entrepreneurial marketing (Maritz *et al.* 2010).

This section reviews the literature on entrepreneurship and entrepreneurs predominantly from the perspective of economics (the field that first gave an insight into entrepreneurship), and psychology (the field that seeks to explain the individual level differences that impact our economy). In so doing the meanings of key terms used in this research *entrepreneur*, *entrepreneurship*, *sustained entrepreneurial action* and *entrepreneurial success* are clarified.

2.4.1. Entrepreneurship

Entrepreneurship is the term used to describe the systems level impact of what it is that the entrepreneur does, but a clear definition of the term is a matter for discussion.

It has been suggested that, to mainstream entrepreneurship research, entrepreneurship is something extraordinary (Karp 2006). More recently, entrepreneurship has been proposed to be the phenomenon that is the “emergence of new economic activity” (Wiklund *et al.* 2010).

There are various views on the definition of entrepreneurship and they arise from differing perspectives including economic, social, cognitive, and behavioural perspectives. These perspectives require particular features to be present for entrepreneurship to be established, such as the creation of a new organization (Gartner 1988); self employment (van Praag *et al.* 2007); developing a new product,

service, market, or process (Schumpeter 2004); or adding value to society (Bolton *et al.* 2005).

Entrepreneurship is sometimes used to describe any kind of human endeavour that defies the status quo and the conventional *modus operandi* across a range of human endeavours (Ma *et al.* 2006) and, using this definition, anyone in any position could be an entrepreneur (Chell 2008). Entrepreneurship is an activity carried out by individuals in their own ventures, and by corporations renewing or creating additional ventures (Katz *et al.* 2004).

To some the presence of innovation is entrepreneurship's defining feature. That is, its essential core is new entry to either new or established markets, with either new or established goods, facilitated by firm entrepreneurial orientation (Lumpkin *et al.* 1996). It is associated with a new process, product, service or market (Amabile *et al.* 2005), or the acquisition, combination, and redevelopment of resources that provide new products and services through new organizations to new markets (Baum *et al.* 2004). By including the creation of a new business as part of the entrepreneurship process (Goss 2008; Segal *et al.* 2005) we start to see a reduction in the number of people who could be classified as entrepreneurs.

Entrepreneurship is achieved by devoting the necessary time and effort and assuming the accompanying financial, psychic and social risks and receiving the resulting rewards (Hisrich *et al.* 2005). By defining entrepreneurship as value creation (financial, social or aesthetic capital) (Bolton *et al.* 2005), we see an increase in those who can be classed as entrepreneurs.

Entrepreneurship is also seen as a process by which opportunities to create future goods and services are discovered, evaluated, and exploited (Shane *et al.* 2003). Other theories of entrepreneurship identify ownership of the capital asset base as the defining feature of entrepreneurship (Foss *et al.* 2007; Knight 1921; von Mises 1949) thus broadening the term beyond the venture creator.

Entrepreneurship has also been defined as a way of thinking and behaving (Mitchell *et al.* 2007), a recurring pattern of thoughts and feelings (Sundararajan 2007), or a vehicle for self actualisation (Schindehutte *et al.* 2006), and an intermittent activity (Casson 2003). Entrepreneurship is distinguished from management by that which is managed. That is, in entrepreneurship it is entrepreneurial opportunities that are managed, in management it is resources (Maritz *et al.* 2010).

Entrepreneurship is linked to wealth creation (Timmons *et al.* 2009). Some specify it is the creative and innovative process of creating incremental wealth (Maritz 2006). However, wealth is a subjective construct and so others turn to profit and growth as indicators of the presence of entrepreneurship (Kirzner 1997). Hindle (2000, p.3) differentiates entrepreneurship incorporating several features and includes the rate of growth as a defining feature:

“...the creation and management of a new organisation designed to pursue a unique, innovative opportunity and achieve rapid, profitable growth...”

Frese (2001) suggests using a behavioural definition of entrepreneurship in order to avoid having to make further assumptions about success, growth or failure. He nominates as a definition of entrepreneurship that suggested by Hisrich (1990), specifically that entrepreneurship is the study of the founders/managers of organizations. Others take a more prosaic view, suggesting that entrepreneurship is the act of being an entrepreneur (Abouzeedan *et al.* 2010).

An important aspect of entrepreneurship is the difficulties and challenges inherent in the process. It is well recognised that new venture creation and development is fraught with environmental stressors (Baron 1998) and consequently successful entrepreneurs are thought to possess a high degree of mental hardiness (Hmieleski *et al.* 2008). Entrepreneurship can spur frustration, stress, anxiety and excitement (Wilson *et al.* 2005). Immersion in the business, loneliness, people problems and survival issues have high emotional and physical costs (Boyd *et al.* 1983). Entrepreneurship is perceived as an emotionally intense activity (Bird 1989). The assessment of the environment in which entrepreneurs work as challenging, stressful and difficult is agreed by experts in the field of entrepreneurship – academics, practitioners and commentators (Timmons *et al.* 2009).

Acs (2010) observes that entrepreneurship is a “complex creature” distinct from small business, self-employment, craftsmanship, and businesses in general and defines it as “a dynamic interaction of attitudes, activities, and aspirations that vary across stages of economic development”. He develops The Global Entrepreneurship Dimension Index to use in measuring the level of entrepreneurship in an economy. It comprises three sub indexes (entrepreneurial attitudes, entrepreneurial activities, and entrepreneurial aspirations), from which five indicators for that sub index link to a further 10 indicators.

To side step the definitional issue Shane *et al.* (2000, p.218) suggest that entrepreneurship research focuses on “(1) why, when, and how opportunities for the

creation of goods and services come into existence; (2) why, when, and how some people and not others discover and exploit these opportunities; and (3) why, when, and how different modes of action are used to exploit entrepreneurial opportunities". Alternatively, in the interests of moving beyond the definitional quagmire, Shane (2006, p. 157) suggests that interested scholars either should agree upon a more limited range of operational definitions for the phenomenon of entrepreneurship, or limit their theories to the topic they investigate (for example., "self employment" or "high-tech start-up") rather than use the term "entrepreneurship" to encompass very different things.

Recently Wiklund *et al.* (2010) suggest that entrepreneurship be emphasised as a force that can be used to create a better world. These authors suggest moving away from context based entrepreneurship research, which is research focussed on, for example, small, young, or owner-managed businesses. They suggest embracing phenomena based entrepreneurship, that is studying the *what* about these businesses that is so interesting. The authors suggest that such a move would liberate entrepreneurship researchers to distil exactly what is entrepreneurial about things that are studied. They also note that phenomena based research would facilitate the inclusion of new domains and cite social entrepreneurship as an example of a domain at odds with the current focus on context based entrepreneurship.

For the purposes of this research *entrepreneurship* refers to the processes, in and around the for-profit business or businesses established by the entrepreneur (Foss *et al.* 2007), and through which future goods and services are discovered, evaluated and exploited (Shane *et al.* 2003).

2.4.2. Entrepreneurs

The word "entrepreneur" is a French word with no literal translation to English. One French-English dictionary suggests the meaning of the word is "contractor" ('Collins English French Electronic Dictionary' 2005), but more typically, it is understood to mean a person who is a "between taker" or "go between" (Hisrich *et al.* 2005). It is well accepted that who, or what, is an entrepreneur is a definition that is difficult to pin down (Hebert *et al.* 2009). Looking for who it is, and what they do, that qualifies the individual to be labelled "entrepreneur" generates a broad array of responses.

Casson (2003) classifies definitions of entrepreneur into either functionalist, as used by economists (someone who specialises in taking judgemental decisions about the coordination of scarce resources), or indicative as used by historians (a set of concepts relevant to recording and interpreting events, resulting in a descriptive rather than analytical framework). He tells us that early theorists viewed the entrepreneur as an adventurer, employer or merchant and the strict meaning of entrepreneur is the undertaking of a project.

Kirzner (1997) sees the entrepreneur an exploiter of profit opportunities that exist due to disequilibrium in the market (Holcombe 2003) who, through his knowledge, can recognise those opportunities when others cannot (Dutta *et al.* 2005). Knight's (1921) entrepreneur acts in the face of uncertainty. Von Mises (1949) described the entrepreneur as a man acting on changes in the market, and entrepreneurship as human action seen from the aspect of the uncertainty inherent in every action (Kirzner 1997).

Entrepreneurs have been distinguished from enterprising individuals through their capacity to build something much more substantial, something that is significantly different and not just a creative or innovative improvement (Thompson 2004). Others denote the entrepreneurs by their ownership of a business and therefore their requirement to make business decisions, take initiative, shape their business environment according to their own ideas and goals (Brandstätter 1997; Douglas 2005). At various times in our history government has sponsored attempts by the unemployed to generate their own jobs through self-employment or small business creation. Social and economic marginalisation are well recognised contributors to the decision to become an entrepreneur (Martinelli *et al.* 2001).

Schumpeter (2004) suggests that entrepreneurs are people intrinsically motivated to utilise the benefits of technological, demographic, and social changes to create upheavals in the current state of equilibrium and, in so doing, bring in new products and services or new ways of working. To Schumpeter the entrepreneur is a hero-like character and it is the entrepreneur's personal attributes that play the critical role in his/her ability to recognise entrepreneurial opportunities (Dutta *et al.* 2005; Schumpeter 2004).

Some suggest that the definition of who is an entrepreneur could include the employee, the manager, the self made business person, or logically an array of individuals who contribute singularly to each stage of discovering, evaluation, exploitation without

participating in the whole process (Schumpeter 2004). Depending on the viewpoint of the author, the entrepreneur can be found in all types of organisations and agencies such as for profit businesses, government agencies, large corporations, private and public sector organizations, and arts industries (Rauch *et al.* 2000). In recent years, the concept of entrepreneurship has been extended to include activity undertaken by social, political and international organisations (Abouzeedan *et al.* 2010). Indeed, to underscore the viewpoint that entrepreneurs can be found in every endeavour, as early as 1985 management philosopher Peter Drucker (1985) called for America to become an entrepreneurial society in which innovation and entrepreneurship became the integral life-sustaining activity of its organisations, economy and society.

It has been suggested that entrepreneurs are people motivated by something other than the pursuit, and maximisation, of wealth creation frequently attributed to them by the economic stream of literature (Alstete 2008). The *habit* of creating and innovating in the pursuit of building something of recognised value (Thompson 2004) is suggested as indicative of an entrepreneur.

Cardon *et al.* (2009) suggest that passion generated through engagement in entrepreneurial activities validates and affirms an entrepreneur's conception of their true self, suggesting an entrepreneur is a person who undertakes an entrepreneurial role because it is meaningful to their identity. More recently entrepreneurs have been distinguished by their capacity to think effectually: that is they start with a given set of means and allow goals to emerge contingently over time (Sarasvathy 2008). It is noted that the entrepreneurs' capacity to exploit opportunities can lead them to activities that generate outcomes with minimal regard for social consequences. Thus the boundaries between socially acceptable and unacceptable entrepreneurs can become blurred (Frith *et al.* 2008).

How people come to be entrepreneurs highlights again the diversity in the meaning of the word "entrepreneur". Alstete (2002) reviews research into the benefits of entrepreneurship, which in turn imply why people become entrepreneurs. He finds some people are motivated by the loss of a job, others have grown up in families operating businesses in the private sector and see it as a natural employment activity, others cite a lack of opportunity to commercialise an idea within their existing firm, others see an opportunity that no-one else is exploiting and decide to exploit it themselves. There are also those who cite an inability to tolerate corporate or bureaucratic work places and so establish their own work places, and yet others whose

professional or trade training typically leads to the establishment of a business in which to ply those skills. Some talk of wanting to make a difference through finding an opportunity.

The term *entrepreneur* is understood to have diverse meanings (Verheul *et al.* 2005). Therefore, this research follows advice to define clearly the area to be studied (Shane 2006), ensuring that all participants have the same condition provides methodological control (Amiot *et al.* 2006).

Thus, for the purposes of this research, an *entrepreneur* is defined as someone who:

- Has founded a for-profit business (Kirzner 1997; Schumpeter 2004),
- From an opportunity that he or she identified (Casson *et al.* 2007; McMullen *et al.* 2006),
- In which he or she holds (or held) a majority ownership (Brandstätter 1997; Douglas 2001).

2.4.3. Sustained entrepreneurial action

The term entrepreneurial action is equally difficult to define. Kirzner, Knight and Schumpeter, often cited as influential early theorists of entrepreneurship, are understood to use the term to mean activity that is at the centre of economic development (Kirzner 1997; Knight 1921; Porter *et al.* 2010; Schumpeter 2004). Entrepreneurial action can be activity that is dependent upon either or both the individual and the environment, and is activity best viewed through the lens of a business ecosystem (Porter *et al.* 2010). It contributes directly economic growth through the creation of new ventures (Erasmus *et al.* 2007), and is linked to successful entrepreneurs (Erasmus *et al.* 2009).

Entrepreneurial action is variously understood to be action: associated with an opportunity (Shane *et al.* 2003); that may or may not be profitable or successful (Frese 2007); that creates value (Foss *et al.* 2008). It is important to the entrepreneurial outcome, as the outcome is the result of an active process that includes adapting to changing environments (Reader *et al.* 2006). By nature entrepreneurial action is action that is continuous (Frese 2007); episodic (Shane *et al.* 2001); creative (Agarwal *et al.* 2007); and culminating (Butler *et al.* 2003).

McMullen *et al.* (2006) use the term entrepreneurial action to describe action that occurs at the completion of an opportunity search/discovery process, when new products, new ventures, new services are created. They suggest that it is a process that can be prevented by uncertainty, which they identified as problematic because entrepreneurship is dependent upon entrepreneurial action taking place. Hebert *et al.* (2009) articulate entrepreneurial action as the creation of opportunity as well as the response to existing circumstances, implying that entrepreneurs have the courage to embrace risks in the face of uncertainty. Entrepreneurial action is consistent with the basic construct of performance, ie behaviour that is a direct function of declarative knowledge (knowledge about facts and things), procedural knowledge (knowing how to do something as well as what to do), and motivation (Borgman *et al.* 2003).

More recently, the focus on entrepreneurial action has shifted to cognitive and emotion streams of research. Here entrepreneurial action has been described as an approach used to explain entrepreneurial cognition (Mitchell *et al.* 2007). Entrepreneurial actions (or decisions) can be understood as “the focal, creative, psychic event where knowledge, thought, feeling and imagination are fused into action” (Goel *et al.* 2007).

For the purposes of this paper *entrepreneurial action* is defined as:

- Activity that is dependent upon the individual, the environment, and both in combination, and viewed through the lens of a business ecosystem (Porter *et al.* 2010),
- Occurring at any stage of the entrepreneurial process (Frese 2007),
- For the purpose of generating value (Foss *et al.* 2007).

In response to a theme that emerged from the data in Study 1, the construct of entrepreneurial action evolved to highlight the importance of entrepreneurial action to entrepreneurial success. The importance of the nexus of action and success is also evident in the literature.

Embedded in Hisrich's (1990, p. 209) definition of entrepreneurship is the notion that sustained action is important “...by devoting the necessary time and effort...”. The link between entrepreneurial action and entrepreneurial success is noted in the literature – “we assume there is no success without action...the concept of action is central to this model and the strategies and tactics of action is the bottleneck through which all entrepreneurial success is or is not accomplished.” (Rauch *et al.* 2000, p. 103).

Thus, the construct of entrepreneurial action has been evolved to ***sustained entrepreneurial action***. This change is consistent with the research that demonstrates that deliberate practice is linked to high performance attainment (Vallerand *et al.* 2007); and effortful perseverance by the entrepreneur is necessary particularly in the early stages of venture creation (Foo *et al.* 2006). That is, if you do not persist with the business of your venture your ability to achieve success, no matter how success is defined, is compromised.

2.4.3.1. SEATime and SEABusiness

For the purposes of measurement, *sustained entrepreneurial action* has been conceptualised as comprising two discrete elements: sustained entrepreneurial action - time (SEATime) and sustained entrepreneurial – business (SEABusiness). Each element attempts to capture a different aspect of sustained entrepreneurial action.

The first is the sustained entrepreneurial action taken directly by the entrepreneur. The proxy for this is the amount of time the entrepreneur spends working in or on their venture. The second reflects the sustained entrepreneurial actions that lead to the generation of business results. Proxies for these are typical business metrics of employee numbers, average growth, and average turnover.

2.4.4. Entrepreneurial success

Knowing who can achieve entrepreneurial success has important implications for the efficient allocation of resources and minimising the costs of entrepreneurial failure (Caliendo *et al.* 2008). A measure of entrepreneurial success would facilitate the identification of current and future successful ventures, and also improve public policies designed to improve the success rate of start-ups (Fried *et al.* 2009). Despite much being known about economic, individual and environmental factors antecedent to entrepreneurial success, how success should be measured and what indicates the achievement of entrepreneurial success is not generally agreed in the literature. However, it has recently been observed that this is an issue for entrepreneurship scholars, and one that is worthy of detailed investigation (Baron *et al.* 2011).

The word “success” is defined as occurring when an event takes place that accomplishes its intended purpose (Miller *et al.* 2006b). Thus, the achievement of entrepreneurial success can be both subjectively and objectively determined.

Schumpeter's motivators for engaging in entrepreneurship, that it is for the gain of *personal* profit (Schumpeter 2004), underscore that entrepreneurial success cannot simply be objectively measured.

Success in the context of entrepreneurship can be determined by different means. The presence of advantages or rewards arising from entrepreneurship infer the presence of success (Alstete 2008). Business or economic performance indicators such as firm size or growth are used to measure entrepreneurial success, as are qualitative indicators such as meeting challenges or overcoming obstacles (Brush 2008; Cliff 1998; Venkatraman *et al.* 1986). Furthermore, the determinants of entrepreneurial success differ according to the level of analysis applied, such as individual, firm, small organisation or large organisation (Rauch *et al.* 2000).

Thus, recognised antecedents of entrepreneurial success include economic, psychological, sociological and management factors. Economic factors include the use of planning and strategies, innovation, entrepreneurial orientation, and tough environmental conditions (Rauch *et al.* 2000). Psychological factors include need for achievement, locus of control, low risk-taking, human capital, problem-solving orientation, assertiveness, interpersonal reactivity, and self-leadership aimed at maintaining a positive attitude and persistence (Caliendo *et al.* 2008; D'Intino *et al.* 2007; McClelland 1961), self-efficacy (Nel *et al.* 2008), and a blend of analytical, creative and practical aspects of intelligence (Sternberg 2004). Social factors include the strength of social networks and the social skills of the entrepreneur (Brush 2008; de Klerk *et al.* 2008; Walske *et al.* 2007). Management practices of visioning and bootstrapping are also accepted antecedents for entrepreneurial success (Brush 2008).

The presence of entrepreneurial success is not always segregated from the notion of successful entrepreneurial action, and is something that can be both implied and specified. Indicators of success can: vary according to the phase of the entrepreneurship's life cycle (van Gelderen *et al.* 2006); include the range of business behaviours such creating a new venture, innovation, business ownership, and managing a large business (Verheul *et al.* 2005); are inferred as being present as a consequence of opportunity recognition and exploitation (Ardichvili *et al.* 2003); and be evidenced through venture growth (Baum *et al.* 2004). Growth indices are often used to determine the presence of success, such as growth in employee numbers, sales growth, profit, return on equity, and return on assets (Achtenhagen *et al.* 2010).

The achievement of entrepreneurial success is something that commentators confirm retrospectively after consideration of the history of the entrepreneur's venture. Interestingly, entrepreneurial success can be transitory in nature, as in the case of entrepreneurs who lose their successful ventures in the face of economic, societal or environmental disturbance. Some measures of entrepreneurial success can be the product of artifice or fraud, either from the start of the venture or coming into play at some time during the entrepreneurial journey. For instance, the passage time showed the perception of entrepreneurial success to be wrongly attributed to, or seriously tarnished, in the case of Jodee Rich of One.Tel, Alan Bond of Bond Industries, Eddy Groves of ABC Childcare Centres, and Kenneth Lay of Enron Corporation. Entrepreneurial success is often assumed because the venture is ongoing (Douglas 2001), or ventures are accepted as being successful by virtue of being compared to ventures that have left the market or failed (Hogarth *et al.* 2008).

The presence of entrepreneurial success can be linked to the magnitude of the success experienced. Fairley *et al.* (2008) explore the racial patterns of business-ownership rates and outcomes among American entrepreneurs. They use closure rates, profits, employment and sales as indicators of a lack of entrepreneurial success experienced by African American entrepreneurs *when compared to* Caucasian and Asian entrepreneurs assessed using the same measures (Fairlie *et al.* 2008).

Identifying indicators of entrepreneurial success is problematic because entrepreneurial success has so many different dimensions, and is a multistage process (Brockner *et al.* 2004). Performance indicators are recognised as less prone to common method bias (Maritz *et al.* 2006) and therefore are attractive indices for researchers. Venkatraman *et al.* (1986) develop a classificatory scheme from indicators of financial and operational performance, and sources of performance data. Their scheme highlights the 10 basic approaches used for measuring business performance in an attempt to address what they acknowledge to be one of ~~the~~ thorniest issues confronting the academic researcher today" (Venkatraman *et al.* 1986).

Two decades later, operationalising and measuring entrepreneurial performance remains problematic. For example, entrepreneurial success can be measured by goal achievement, economic success, lifestyle success, growth (Rauch *et al.* 2000). Yet each of these is a multidimensional phenomenon in its own right, as exemplified by the work on the heterogeneity of growth indices (Delmar *et al.* 2003). Rauch *et al.* (2000) observe that choosing to examine only one aspect of entrepreneurial success is seen

as restrictive because it does not illuminate all the processes involved in success. An indicator of success from one view may imply unsuccessful business activities from another, such as large profit margins in the context of taxation planning (Rauch *et al.* 2000).

Furthermore, what constitutes entrepreneurial success can be informed by cultural issues, sometimes dependent upon the customers' perspective (Rauch *et al.* 2000). As an example, venture capitalists were shown to have a different understanding of entrepreneurial success from the entrepreneurs seeking their funds (Black *et al.* 2005). The attainment of wealth is a typical indicator of success (McMullen *et al.* 2006), yet other research shows wealth is not necessarily a measure of entrepreneurial success from the perspective of many entrepreneurs (Alstete 2008). Gender differences also affect perceptions of success – men use external standards to benchmark success such as gaining prestige or recognition for accomplishment; whereas women use internal definitions of success, such as whether they accomplished what they set out to do (Burger 2008; Cliff 1998).

The type of entrepreneurship will also constrain the indicators of success employed. Those organisations that focus on value creation will use different indicators of success. For example, a social entrepreneurship would not use wealth maximisation as a measure of success (Austin *et al.* 2006), choosing instead indicators situated around the reach, uptake, or impact of their activities. Entrepreneurs that see their reason for being as value creation (Bolton *et al.* 2005), or use their value packed vision to drive their ventures (Brush 2008) have an individualised and diverse ranges of indicators that could be used to measure entrepreneurial success.

Despite the complexity involved in attempting to advance a theory of entrepreneurial success, researchers have attempted to predict success by identifying its antecedents and using this to nominate indicators of success.

Bonet *et al.* (2011) sought to determine the factors that influenced human resource management and entrepreneurial success in the context of European small and medium sized enterprises (SME). Recognising that business success is a qualitative magnitude difficult to measure, they sought to find a scale understandable to any researcher and chose minimum cost output (the ratio of fixed and variable costs) to be the indicator of entrepreneurial success. They developed a pilot questionnaire using 50 Spanish entrepreneurs and then administered their revised survey to 2,894 European SMEs. The results indicate the attributes that characterise an entrepreneur,

the qualifications, the aim pursued and the training scheme, were significantly related to minimum cost output (that is, entrepreneurial success) (Bonet *et al.* 2011).

Alstete (2008) interviewed 149 successful small business owners and entrepreneurs to explore aspects of entrepreneurial success. The author found that the rewards of entrepreneurship are independence, freedom, job satisfaction, and money, and conclude that success is strongly connected to thorough planning (Alstete 2008). Although Alstete does not define or measure success, implicit in his work is the understanding that being currently engaged in entrepreneurship and enjoying rewards of so doing indicate ~~success~~".

Wadhwa *et al.* (2009) interviewed 549 company founders to understand the factors that influenced the success of their ventures. They find that experience, management teams, learning from successes and failures, and luck are the most important factors for entrepreneurial success. The authors' restrict their survey to founders of businesses that have progressed beyond the start-up stage, arguing that having survived beyond start-up stage is an indicator of having achieved success (Wadhwa *et al.* 2009).

Fried *et al.* (2009) propose an index of ~~entrepreneurs success~~^{*}" at the level of the firm and relate the index to characteristics of the entrepreneur and the venture using data from 2,863 firms. They use a production function approach in which the individual entrepreneur is recognised as transforming inputs into measures of entrepreneur success, which represent ~~best practice~~" for the entrepreneur. The core model of entrepreneur success comprises total cost (that is the resources used by the enterprise) and owner hours (the commitment and effort of the enterprise to the enterprise), and total revenue and revenue growth. The authors conclude that the heterogeneity of their data hampers efforts to explain the results of the ~~entrepreneurs success~~" index, which showed a large variation in the performance of entrepreneurs (Fried *et al.* 2009).

Liechti *et al.* (2009) explore luck in the context of entrepreneurial success and failure in a survey of 3,104 Swiss entrepreneurs. To the authors, entrepreneurial success is a function of performance captured using industry-adjusted scales, aggregate income and return on initial invested capital. The authors also surveyed their respondents to develop performance factors that comprise success from their perspective. They find

^{*} This phrase is reproduced from the article without alteration.

that entrepreneurs perceive effort as the most important condition for success, followed by education and experience, luck being the least important factor for success (Liechti *et al.* 2009).

Caliendo *et al.* (2008) make use of data on 414 applicants to a business incubator. They investigated the personality traits of the potential business founders, shown in previous research to be crucial to entrepreneurial success. Entrepreneurial success in this research is measured in terms of how many employees were hired after the venture launched. They found no significant relationship between number of employees (entrepreneurial success) and the personality characteristics typically associated with venture success (Caliendo *et al.* 2008).

Kumar (2007) uses psycho-social processes to develop a conceptual framework to explain entrepreneurial success. The framework assumes that entrepreneurship is the consequence of an interaction between the individual and their environment (Kumar 2007). Without explicitly stating it, this model also assumes that entrepreneurial success can be transient. The author recognises that the match between the entrepreneur and their environment can change and create a subsequent mismatch. The author implies that a mismatch does not lead to, or does not facilitate, continued entrepreneurial success, and thus the condition of entrepreneurial success must change.

Black *et al.* (2006) investigated the traits, skills or abilities that were used to predict entrepreneurial success from the perspective of venture capitalists and entrepreneurs. They found that entrepreneurs applying for venture capital for the first time, and venture capitalists had different beliefs about the traits, skills or experiences necessary for determining potential entrepreneurial success. Essentially, to these entrepreneurs who they were was more important to entrepreneurial success than what they learnt (Black *et al.* 2005).

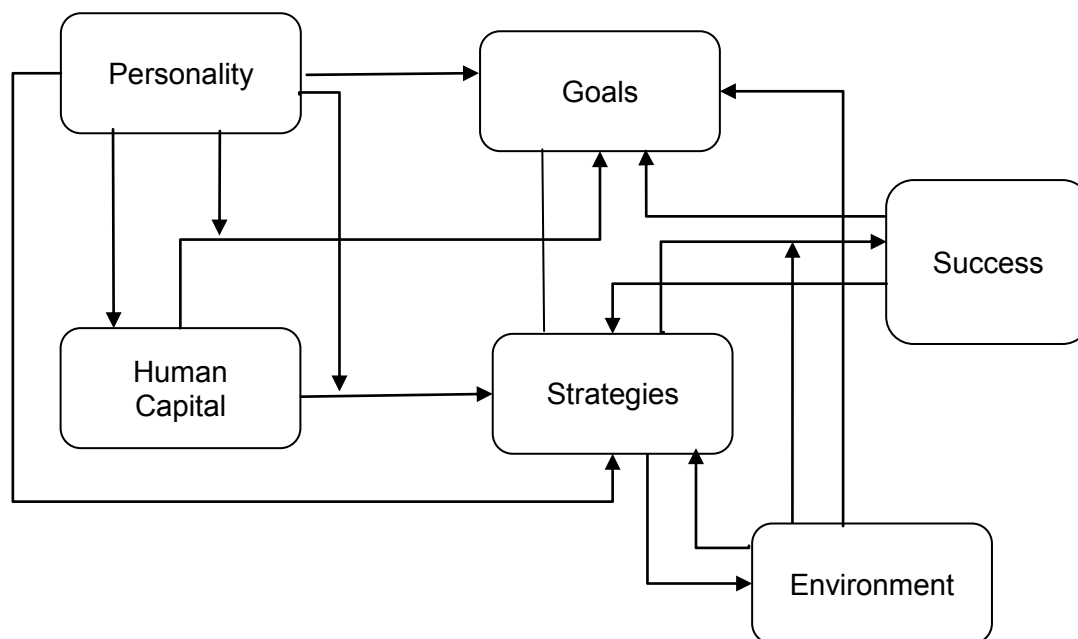
Rauch *et al.* (2000) use the Geissen-Amsterdam Model of Small Business Owner's Success to capture and critique antecedents to entrepreneurial success found in their meta-analysis type review of the psychological literature on entrepreneurial success (see Figure 2-2). This model has as its central concern the concept of action (goals and strategies), suggested to be the bottleneck through which -all entrepreneurial success is or is not accomplished". The authors conclude that factors related to success are need for achievement, locus of control, low risk-taking, human capital,

planning and strategies, innovation, entrepreneurial orientation, and tough environmental conditions.

However, they caution that the correlations between the factors and success are small, variances between the studies large, and that moderators and mediators should be included in future research into success. See Table 2-1 for the results of their attempt to approximate a meta analysis of quantitative studies. Finally, the authors note that although they have reviewed antecedents of success, they do not discuss the measurement of success both because it is outside the realm of psychology, and because success is comprised of different aspects (for example goal achievement, economic success, lifestyle success, growth) (Rauch *et al.* 2000).

Thus, entrepreneurial success could be broadly defined, exclude typical business and economic measures of success such as profit, revenue turnover, growth, size, wealth maximisation, and focus only on psychological indicators such as satisfaction with perceived rewards. Success could also be recognised by survival beyond a point in time, or simply by the fact that the venture is in existence and others are not. The achievement of entrepreneurial success may have a temporal aspect, that is entrepreneurial success has been achieved *at this point in time*.

Figure 2-2 The Geissen-Amsterdam Model of Small Business Owner's Success



Source: Rauch *et al.* (2000)

Table 2-1 Weighted mean correlations

Factor	Number of Studies	N	<i>r</i>
Need for achievement of business owners compared to other samples	5	896	0.21**
Need for achievement of business owners and its relationship to success	6	501	0.13**
Locus of control of business compared to other samples	6	1338	0.13**
Locos of control of business owners and its relationship with success	6	460	0.11**
Human capital of business owners and its relationship with success	7	793	0.09*

Note: * $p < 0.05$, ** $p < .01$, *** $p < .000$

Source: Rauch *et al.* (2000)

Given the diversity of potential indices for entrepreneurial success, this research took the view that the construct of entrepreneurial success would be developed from the opinion of the successful entrepreneurs interviewed in Study 1. The most frequently occurring themes that emerged from Study 1 to explain success were subjected to exploratory factor analysis. The resulting factor reflected *entrepreneurial success* to be the entrepreneur's personal satisfaction with their life as an entrepreneur and their venture in terms of its growth and attainment of goals set by the entrepreneur.

2.5. Passion

....Passion is an unlimited source of energy from my soul, or spirit, or heart. Entrepreneurs need courage to take the risks inherent in entrepreneurship. Passion is the source of my courage..."

Charles Kovess, entrepreneur (personal communication, 2011)

The under-researched but widely recognized role of emotions and passion as a central component of entrepreneurial motivation in particular (Cardon *et al.* 2005a) and entrepreneurial action in general (Baron 2008) has started to attract the attention of entrepreneurship researchers (Lumpkin 2011). Seen as a crucial oversight restricting the ability to explain entrepreneurial behaviour (Goss 2005), the study of emotion and in particular passion is now clearly on the agenda of entrepreneurship researchers (Baron 2008; Cardon *et al.* 2009; Perttula *et al.* 2011).

Researchers have theorised on the contribution of affect, emotion and passion to aspects of entrepreneurial action (Baron 2008; Busenitz *et al.* 1997; Perttula *et al.* 2011), and recently there has been an emergence of empirical research, both qualitative and quantitative, into these constructs (Balachandra *et al.* 2010; Baron, Tang *et al.* 2010; Cardon *et al.* 2010; Chen *et al.* 2009; Vujnic *et al.* 2010).

Passion in particular is closely linked to entrepreneurship. An examination of autobiographies, scholarly articles, interviews with entrepreneurs, popular press reports reveals passion to be a frequently cited and intrinsic element of entrepreneurial action (Baron 2002; Baum *et al.* 2004; Bird 1989; Graham 2006; Locke 2000b; McClune 2000; O'Toole *et al.* 2005; Shane *et al.* 2003; Torres 2003; Zeitsma 2005). Passion is said to be crucial for entrepreneurial action and success (Klauckien *et al.* 2010). The concept of passion is suggested to represent an important motivational energy underlying the sustained intense practice of an activity, despite challenges and obstacles, and therefore is conducive to performance attainment (Vallerand *et al.* 2008a) and particularly to expert levels of performance in that activity (Mageau *et al.* 2009).

2.5.1. Defining emotion, affect and passion

Affect, emotion and passion are related phenomena. Although all are to be found in the entrepreneurship literature emotion, and more latterly passion, have in particular been the subject of theory and research within academic literature in general.

A definitional debate exists around the term “emotion”, the number of emotions and what they are (Brundin *et al.* 2008). Nonetheless, it appears there is agreement that to experience an emotion means to be stirred, agitated, or moved in any of several channels (components), and that emotions can occur in affective, facial, physiological, and behavioural change (Deckers 2005). Emotions are intensive, short-lived and usually have a definite cause and clear cognitive content (Forgas *et al.* 2001) and are a process closely allied with motivation – emotions serve as a unique source of motivation that both activate and guide behaviour (Deckers 2005). As internal states, emotions are not under the complete control of the actor (Lawler *et al.* 1999).

Evidence exists for the universal categorization of emotions, and seven basic/prototype emotions have been identified with specific instances of each emotion prototype listed in order of decreasing intensity within the category (Deckers 2005). These prototypes are

the average or typical meaning that all words in the emotion category have in common. They are:

- happiness/joy – ecstatic, euphoric, happy, carefree, light-hearted
- love - passion, attraction, liking, fondness, tenderness
- surprise - amazement, surprise, astonishment
- sadness – wretched, depressed, melancholic, gloomy, wistful
- fear – terror, panicky, fearful, anxious, timid
- anger – fury, irascible, irritable, touchy, grouchy
- disgust – queasy, nausea (Deckers 2005 p. 342)

Affect is the subjective tone of an emotion and can be positive and pleasant, or negative and unpleasant and can provide the motivation needed for personal accomplishment (Deckers 2005). Affect is also used as a generic label referring to both moods and emotions (Forgas *et al.* 2001), and is suggested to have a curvilinear relationship with outcomes, being helpful up to the point of inflection after which performance diminishes (Deckers 2005).

Passion is a word that is defined in many different ways, contexts and disciplines (De Cremer *et al.* 2009; Shrivastava 2010). Recently passion has been identified as the affective component of a newly conceptualised “megafactor” - the construct “work passion” (Zigarmi *et al.* 2009). It is also associated with the experience of entrepreneurship (Morris *et al.* 2010) and is used in this context without itself being examined (Amabile *et al.* 2005) until recently.

We know from past research and from the anecdotes of entrepreneurs that it is their passion that sustains them through the turbulent process of opportunity recognition and venture creation and exploitation – the fire in the belly that makes the improbable possible (Smilor 1997). Entrepreneurs are described as being passionately committed to their ventures (Bradley *et al.* 2008; Branzei *et al.* 2004) and metaphors used to describe the relationship between the entrepreneurs and their businesses include those of romance, love, and passion (Ashton *et al.* 1999; Cardon *et al.* 2005b; Dodd 2002).

In the English language, the word passion is used to mean:

- A strong feeling or emotion

- The trait of being intensely emotional
- An irrational but irresistible motive for a belief or action
- A feeling of strong sexual desire
- Any object of warm affection or devotion
- The suffering of Jesus at the Crucifixion (Miller *et al.* 2006b)

Cardon *et al.* (2005a), having undertaken an in-depth look at the literature, note that in conceptualising passion there are four common aspects. That is, passion:

- Is a wholly or partly a strong emotion that,
- Encapsulates a host of different and mixed emotions,
- Is directed toward or focused around a specific object, and
- Has motivation effect (Cardon *et al.* 2005a).

In a subsequent paper, Cardon *et al.* (2009) refined their conceptualisation of passion to provide a definition of entrepreneurial passion as:

A consciously accessible, intense positive feeling experienced by engagement in entrepreneurial activities associated with roles that are meaningful and salient to the self-identity of the entrepreneur.

Not inconsistent with this, Vallerand *et al.* (2008) conceptualise passion generally as:

A strong inclination towards a self-defining activity that one likes (or even loves) finds important, and in which one invests time and energy.

Chen (2009) defined entrepreneurial passion as an *entrepreneur's intense affective state that is accompanied by cognitive and behavioural manifestations of high personal value*. They further explain that the intense affective state (labelled as passion) is accompanied by cognitions (labelled as "preparedness") and behaviours. For example, the entrepreneur's mind is extremely active and they take action to address their passion. They observe that whilst the entrepreneur's passion is often positive it is not always so, and it includes affective negative states, anxiety even fear.

2.5.2. Emotion, affect and passion in the entrepreneurship literature

However emotion, affect or passion is experienced by the entrepreneur, or operationalised by the entrepreneurship scholar, there is no doubt that new venture

creation involves intensely emotional experiences (Bird 1989), with some researchers suggesting that entrepreneurs act on the basis of their emotions (Karp 2006).

The role of affect, emotion and passion has been theorised and explored through empirical research with varying results.

2.5.2.1. Emotion

Emotion has a clear place within entrepreneurship, with one of entrepreneurship's early theorists, Schumpeter, linked emotional rewards to part of the explanation of entrepreneurial behaviour (Casson *et al.* 2007). Researchers have continued to canvass and examine the impact of emotion on aspects of entrepreneurship such as opportunity recognition, venture creation, entrepreneurial behaviour, and entrepreneurial decision-making.

Emotions are suggested to have a role in opportunity identification (Baron 2008), and empirical evidence suggests that decreased systolic blood pressure is related to an increased ability to recognise better quality opportunities (Sundararajan 2007). In a series of recent controversial papers, focussed emotional attention directed towards a potential future business opportunity was found to enable the person to experience intuition about the future of that opportunity (Bradley 2006; Gillin *et al.* 2007; Tomasino 2007).

Vujinic *et al.* (2010) undertook qualitative research into how entrepreneurs experience emotions during the creation of their ventures. They find the emotions experienced by the four entrepreneur-participants were broad ranging, intense, and both positive and negative. They categorised the emotions into three overlapping stages of entrepreneurship particularly likely to evoke emotional responses: idea conception and venture initiation; start-up and growth; and exit. Passion was identified as a key emotional experience invoked in the idea conception and venture initiation stage, and captured by the encompassing emotion of "inspiration".

Foo (2009) examined how trait and state emotions may effect opportunity evaluation in two studies. The first study ($n=187$) used a population of undergraduate students to examine the effects of anger, happiness, fear and hope on risk evaluations. They find induced emotions lead to risk perceptions, specifically higher perceptions of risk for fear and hope, lower for happiness and anger. Study 2 used a sample of entrepreneurs ($n=66$) to examine the effect of the traits anger and happiness on risk

preferences. They find that trait happiness increased the likelihood of making a riskier investment decision. The authors conclude that emotions do play a significant role in opportunity evaluation as represented by risk perceptions and preferences.

Emotions shape the entrepreneurial motivations that lead to entrepreneurial behaviour (Goss 2008), particularly when the entrepreneurial process is a positive one (Schindehutte *et al.* 2006). However, emotions can also shape behaviour when the process is not a positive one. Shepherd (2003) observes that the emotion of grief is part of the process of business failure for entrepreneurs. He theorises that an entrepreneurs' grief arising from business failure can interfere with learning from business failure, and recommends grief recovery processes as an important aspect of entrepreneurship. Confidence has been described as an "emotion of assured expectation" that encourages action and may moderate the influence of other emotions (Brundin *et al.* 2008). Both positive and negative emotions can impact decision making; and baseless or well founded overconfidence can impact on venture failure or success (Sundararajan *et al.* 2006).

It is suggested that emotions reduce uncertainty and lead to action, substitute for analytical rigor and are therefore cognitively parsimonious, and form the basis of persistence (Goel *et al.* 2007). Emotional regulation is suggested as having an essential role in converting strong affective experiences into drivers of entrepreneurial effectiveness including persistence, problem solving and absorption (Cardon *et al.* 2005a).

2.5.2.2. Affect

Positive affect is known to influence cognition, behaviour and performance and high levels can be both beneficial and detrimental in the entrepreneurial context (Baron *et al.* 2010). It is also linked to cognitive errors such as discounting or glossing over negative information (Petty *et al.* 1996), can influence or undermine objective judgements and decision-making (Forgas *et al.* 2001), and result in a reduced emphasis on perceptions of need for innovation (McMullen *et al.* 2006).

In a study analysing the performance of student entrepreneurs in a "pitch" competition, positive affect and passion were shown to be highly correlated ($r=0.80$) and to not behave independently (Balachandra *et al.* 2010). Using a sample of 46 entrepreneurs over a 24 day period, Foo *et al.* (2009) found that affect has a significant role in the

new venture creation process. Specifically they find that negative affect predict effort on tasks required immediately and positive affect predicts effort beyond immediate needs.

2.5.2.3. Passion

Whilst emotions and affect are oft cited in the entrepreneurship literature, it is passion that now attracts most attention from theoreticians and researchers alike.

The passion shown by entrepreneurs for their ventures has been linked to success in gaining resources such as capital (Chen *et al.* 2009) and key personnel (Cardon 2008). In an empirical study that found that emotional elements play a prominent role in entrepreneurship, 'passion' was one of the criteria used by entrepreneurs to define their high performance (Schindehutte *et al.* 2006).

Passion may be linked to a model of opportunity recognition developed by McMullen *et al.* (2006) through its two key antecedents "knowledge" and "motivation". Knowledge is part of the pathway to entrepreneurial action taken in response to opportunity recognition. Passion has been shown to have a positive effect on self-efficacy (Baum *et al.* 2004; Brannback *et al.* 2006; Branzei *et al.* 2004) which itself is a component of knowledge in the McMullen *et al.* model. Thus, passion may have an indirect effect on entrepreneurial action through self-efficacy. Research clearly links passion to motivation, albeit with mixed results. It is the one variable that impacts positively on venture growth (Shane *et al.* 2003), and its impact is indirect through non-trait mechanisms such as goals, self-efficacy and vision (Baum *et al.* 2004). Vallerand *et al.* (2003) define passion as an important motivational construct (see more below) whilst passion is suggested to be a driver in the face of uncertainty (Baum *et al.* 2004).

Burke *et al.* (2009) explored passion's dark side in a study of 530 Canadian managers who were graduates of an MBA program. Passion was found to be significantly and positively correlated with addiction. Addiction is defined as being similar to a component of workaholism, defined as "feeling driven to work because of inner pressure". Both passion and addiction were significantly correlated to job and work investment, and to perfectionism. A distinction is drawn between the benefits of passion in the work place and addiction to work, with addiction being linked to obsessive behaviours (identified as persistence, rigidity, perfectionism) which themselves gave rise to lower work satisfaction and psychological well-being.

Morris (2010) conducted studies into the affective nature of the creation of family businesses. An exploratory factor analysis was conducted on 48 affect-laden adjectives drawn from the entrepreneurship literature and used to describe the venture creation experience. "Passionate" emerged as one of 11 factors experienced by both the founder and nonfamily manager samples, and spatial analysis revealed "Passionate" to be similarly located for both samples on a two dimensional valence/arousal scale. "Passionate" was significantly and positively correlated with "Satisfaction" for both samples, but founder entrepreneurs experienced greater intensity than did nonfamily managers.

The entrepreneurial pitch study described above resulted in the suggestion that *calmly conveyed* passion might be linked to the success of an entrepreneurs' "pitch" to venture financiers (Balachandra *et al.* 2010). However in this research it was an observer of the pitch who, using their own judgement, assessed each entrepreneur's passion and accordingly coded a passion scale. The competition judges who nominated the winning pitches (for a financial prize) did not judge the entrepreneur's passion and were not offering venture funds as a reward/prize.

In a similar vein, Simpson *et al.* (2010) conducted textual analysis of 20 applications by the founders of small-scale theatre companies for funding to perform their work. She found this application or "pitch" to be suffused with passion and that the founder's emotion was a means of conveying specific representations of their identity for the purpose of eliciting a positive response from the funding body representatives. Simpson also noted that passion is accompanied by elements of suffering, and observed the presence of loneliness, despair, insecurity and fear within the entrepreneurial identities embodied within the pitch.

In a study involving 90 employees from 75 German firms Klaukien *et al.* (2010) examine how employees' perceptions of their entrepreneur's passion enhance their commitment to the organisation. The employees were given 33 profiles describing typical behaviours of entrepreneurs displaying passion as conceptualised by Cardon *et al.* (2009) (see below) - a passion for inventing, founding, and developing – and a hypothetical work situation. The employees were asked to judge their commitment to the venture in the face of each type of passion. They found overall that employees' perception of their supervisor's passion for invention, founding and developing did influence their commitment to new ventures, and that this is moderated by the presence of similar nonfinancial goals. They further postulate that the presence of

entrepreneurial passion contributes indirectly to new venture success by triggering employee commitment.

Recently, Cardon *et al.* (2009) theorised that the entrepreneurs' passion comprises distinct components of intense positive feelings and self-identity importance, which can be experienced in particular roles inherent in the entrepreneurship process. The authors suggest that entrepreneurs can experience a passion for invention, a passion for founding ventures, or a passion for growing and developing fledgling firms and that these separate passions may contribute to the explanation of why entrepreneurs do not necessarily succeed at all phases in the entrepreneurship process.

A study of 235 Finnish students showed no significant link between either harmonious or obsessive passion and entrepreneurial intention or its antecedents (desirability and feasibility). However, there was an indirect link between items in the scale that could be identified as passionate and the construct of self-efficacy. Since self-efficacy is related to entrepreneurial intentions through desirability and feasibility, this suggests that passion may be indirectly linked to entrepreneurial intentions. The authors conclude that the study fails to demonstrate where passion fits into the entrepreneurial process, suggesting that the research design may have been inadequate to capture passion's contribution to entrepreneurship (Brannback *et al.* 2006).

Vallerand (2003) have suggested that passion is dualistic in nature, and is an important motivational construct explaining the willingness of an individual to engage in an activity. This dualistic model of passion has had limited use in entrepreneurship studies, nonetheless scholars have noted Vallerand's work on obsessive passion (Brannback *et al.* 2006; Cardon 2008), suggesting it may be interesting to examine it with respect to passion in entrepreneurship (Murnieks 2007).

2.5.3. Dualistic model of passion

Vallerand *et al.* (2003) propose a Dualistic Model of Passion that defines passion as a strong inclination or desire for a self-defining activity that one likes, even loves, and in which one invests significant amounts of time and energy. These passionate activities are highly valued and meaningful to the individual. The passionate activity becomes so self-defining that it represents a key feature of the individual's identity. For example, a passionate guitar player or writer of poetry would describe themselves in terms of their

passionate activity: “+am a guitar player” and “+am a poet” as distinct from “+play guitar”, “+write poetry”.

The authors propose that passion is dualistic in nature; it is either harmonious or obsessive, and each leads to different experiences and effect. Harmonious passion is expected to lead to adaptive outcomes, whilst obsessive passion is expected to predominantly lead to less adaptive and at times maladaptive outcomes. They propose that passion can be distinguished by how the passionate activity is internalised into the identity of the individual:

- Harmonious passion (HP) results from an autonomous internalisation of the passionate activity into the identity, leading to flexible persistence in the activity. It is an autonomous internalisation because the individual chooses to do this activity because they love it; they choose it of their own volition; and they are freely willing to do the activity. It is proposed that this passion arises from intrinsic and integrated tendencies of the self. Accordingly, the activity integrates with all other areas of the individual's life, it occupies a significant but not overpowering space in the person's identity, and the individual can choose to engage or disengage from the passionate activity at will. The individual remains in control of the passionate activity and as a consequence can engage fully in the activity, experiencing positive outcomes both during and after task engagement. When prevented from engaging in the passionate activity, the harmoniously passionate individual should be able to focus on other areas of their life. When conflict arises between the passionate activity and other activities, the harmoniously passionate individual should be able to successfully disengage from the passionate activity to concentrate on the other. Behavioural engagement in the passionate activity is flexible and it is this that characteristic of harmonious passion in particular that contributes to adaptive outcomes for the individual.
- Obsessive passion (OP) develops from a controlled internalisation of the passionate activity into the identity of the individual but outside the individual's integrating self, leading to a rigid form and conflicted form of persistence with the activity. This occurs because the activity is associated with inter- or intra-personal pressure to perform it. That is, the activity comes with contingencies attached to it, such as feelings of social acceptance or self-esteem, or uncontrollable feelings of excitement from doing the activity. Not only is the

activity internalised into the individual's identity, but so too are the values and regulations associated with that activity. This leads to rigid persistence towards the activity and a lack of volition during activity engagement. Thus, the passionate activity is not under the control of the individual, and they may describe themselves as being controlled by the activity, or as having to do the activity. Individuals with an obsessive passion feel an uncontrollable urge to engage in the activity which they like and enjoy; they must do it; and the passion *must* run its course. However, in so doing they experience conflict with other areas of their lives that gives rise to negative affective, cognitive, and behavioural consequences. Obsessively passionate individuals may experience frustration and rumination when they cannot engage in the activity; may persist in it to the detriment of themselves and close others; and may have sub optimal outcomes because of the lack of flexibility that obsessive passion entails (Vallerand 2008; Vallerand *et al.* 2003).

Empirical research studies by Vallerand and colleagues since 2000 have consistently demonstrated positive correlations between harmonious passion and adaptive outcomes, and obsessive passion and less adaptive outcomes (Vallerand 2008). Construct validity and reliability has been demonstrated (Vallerand *et al.* 2003), and both types of passion shown to correlate with measures of activity valuation, and perceptions of the activity as being a passionate one (time invested in the activity, passion for activity, and activity perseverance) (Vallerand *et al.* 2008a; Vallerand *et al.* 2007).

Obsessive passion entails a relative lack of control over the passionate activity and rigid persistence with the activity even in the face of important personal costs (Vallerand *et al.* 2008a). It leads to conflicts with other activities within one's life giving rise to negative affect, emotions and anxiety, rumination and shame, and is unrelated to positive emotions during activity engagement (Ratelle *et al.* 2004; Vallerand *et al.* 2003). Obsessive passion can lead to engagement in risky behaviours, such as cyclists riding on ice-covered roads the Canadian winter and dancers continuing to dance whilst injured despite the prospect of chronic injury (Vallerand 2008; Vallerand *et al.* 2003). Obsessive passion may also give rise to positive outcomes, since it promotes persistence and long-term commitment to the activity (Vallerand *et al.* 2003), and may facilitate psychological adjustment in competitive arenas and not facilitate it in less competitive arenas (Amiot *et al.* 2006). However, it is suggested that obsessive

passion is not an optimal motivational foundation because it evokes detrimental as well as beneficial processes (Vallerand *et al.* 2007).

Harmonious passion facilitates concentration, flow and positive emotions and affect during activity engagement (Vallerand *et al.* 2003; Vallerand *et al.* 2006). Positive emotions have been shown to broaden thought-action repertoires leading to the use of more adaptive behaviours and to facilitate subjective well-being (Philippe *et al.* 2009a). Harmonious passion has been found to be unrelated or negatively related to ill-advised activities (Vallerand 2008; Vallerand *et al.* 2003).

The dualistic model of passion has been tested in various arenas. Although developed on French Canadian student samples (undergraduate students and athletes), the scale has been tested in the work place, in on-line gamer environments, and has been modified for use with gamblers. This research also provides further empirical support for the two dimensions of passion. It makes suggestions as to the origins of each type of passion, and demonstrates that each type of passion is differently associated with a range of outcomes.

2.5.4. Harmonious and obsessive passion in the literature

Vallerand's Passion Scale has been adapted for use in exploring and testing passion for gambling (Rousseau *et al.* 2002). Ratelle *et al.* (2004) demonstrated in a study of 412 French-Canadian gamblers at a Montreal casino that obsessive passion for gambling predicted poor vitality and concentration in daily tasks, increased rumination, anxiety, negative mood, guilt and problem gambling.

A link between obsessive passion and the development of addiction for online games was proposed as a result of a study by Wang *et al.* (2007) of 404 Taiwanese members of a online game virtual community. The 10-item Gambling Passion Scale (Rousseau *et al.* 2002), derived from Vallerand's Passion Scale, supported the two dimensions of passion – obsessive and harmonious. The authors found a positive correlation between obsessive passion and online game addiction and concluded that this result confirms the theory that obsessive passion is associated with negative consequences.

On-line shopping dependency and passion was explored in a study of 513 Taiwanese on-line shoppers. The authors conclude that obsessive passion only exists when high harmonious passion is in evidence, and therefore harmonious passion is a requirement of obsessive passion, and harmonious and obsessive passion are a sequence of

different degrees of passion. They also found that shoppers with an obsessive passion shopped on line more often, and were more dependent on the online shopping activities, than were other shoppers (Wang *et al.* 2007).

An investigation of the relationship between personality traits, harmonious passion, obsessive passion, compulsive buying behaviour and online shopping dependency of 403 Taiwanese students was undertaken. The authors conclude that both harmonious and obsessive passion are positively related to compulsive buying, and that individuals with passion are dependent on online shopping activities. They also found that individuals with passion had significant differences in their levels of the personality traits agreeableness and conscientiousness than did those without (Wang *et al.* 2008).

Returning to their original work, Vallerand *et al.* (2008a) tested a performance-attainment model derived from the Dualistic Model of Passion in two studies using French-Canadian high school athletes ($n=184$ and $n=67$). They found that both harmonious and obsessive passion were positive predictors of deliberate practice, which predicted performance attainment. Furthermore, harmonious passion was related to mastery goal pursuit and subjective wellbeing. Obsessive passion was related to mastery, performance-approach and performance-avoidance goal pursuit, and unrelated to subjective well being. The authors conclude that whilst both forms of passion lead to high level performance attainment in sport, obsessive passion is related to less reliable performance attainment and unrelated to happiness.

The Dualistic Model of Passion has also been used to examine the passion of sports fans by Vallerand *et al.* (2008b) in three studies ($n=165$, and $n=242$, $n=144$). Harmonious passion was found to be related to adaptive behaviours (eg celebrating one's team's win) and obsessive with maladaptive behaviour (eg risking losing one's job by attending a game). Obsessive, not harmonious, passion was also shown to predict maladaptive affective life (eg hating the opposing teams' fans) and behaviours (eg mocking opposing teams' fans), and to be a predictor of a life partner's relationship conflict that in turn undermined the partner's relationships satisfaction.

Norwegian-speaking undergraduate psychology students ($n=198$) completed a web-based questionnaire to examine outcomes from leisure activity engagement arising from either a harmonious or obsessive passion for that activity (Stenseng 2008). They found that harmonious passion contributed to life satisfaction whereas obsessive passion was associated with discrepant self-guides and negative life domain outcomes. SEM modelling revealed that passion affects life domain outcomes directly and

indirectly through the presence of intrapersonal conflict. Harmonious passion had direct positive effects on all dependent variables, but obsessive passion's only direct effect was a negative one on the work/study domain (Stenseng 2008).

In a short term longitudinal study of 120 older adult French-Canadians engaged in a physical activity program, Rousseau *et al.* (2008) found harmonious and obsessive passion were both related to subjective well being. However, harmonious passion for the activity lead to increased levels of subjective well being, whereas obsessive passion leads to decreased levels of subjective well-being. The experience of harmonious passion lead to increased positive affect which mediated the relationship between harmonious passion and subjective well being. Obsessive passion was related to higher levels of negative affect, but negative affect was not significantly related to subjective well being at time 2 and time 3, suggesting negative affect does not explain the relationship between obsessive passion and subjective wellbeing .

Harmonious and not obsessive passion is found to be related to high-quality coach-athlete relationships in two studies of French-Canadian coaches ($n=106$) and athletes ($n=157$) by Lafreniere *et al.* (2010). Each study examined the relationship from the perspective of one (either coach or athlete) and obsessive passion was found to be positively related to commitment and negatively to meta-complementarity, the results of the two studies replicating each other. Interestingly, the results indicate that although obsessively passionate athletes are committed to their relationship with their coach, they find the coach uncooperative and consequently experience frustration or even low levels of subjective well-being. The authors suggest this persistence with a suboptimal relationship is a function of the rigid persistence to less adaptive situations that characterises obsessive passion.

Phillippe *et al.* (2009d) examined the role of passion in aggressive driving behaviour in French-Canadian samples of students (study 1 $n=1330$), members of the general community (study 2 $n=458$), and a driving laboratory session (study 3 $n=44$). Specifically, whether being prevented from engaging in driving (the passionate activity) leads to displays of aggressive driving behaviour towards other drivers seen as causing obstruction on the road. Obsessive passion for driving was found to be associated with three types of aggression (verbal, physical, and use of vehicle). Men were found to be more likely to display aggressive driving behaviour than women, and it was found that anger mediated obsessive passion and aggressive driving behaviour.

Bonneville-Roussy *et al.* (2009) explore the motivation mechanism that explains commitment towards attaining elite levels of performance, suggested as passion, in a sample of 187 classical musicians who attended one of two French-Canadian summer music academies. Harmonious passion was found to predict the use of mastery goals whereas obsessive passion predicted performance goals. This finding was suggested to be consistent with obsessive passion being a function of internal pressure to satisfy a contingency attached to the activity, and harmonious passion being a function of free choice to engage in the activity. The authors conclude the research supports the suggestion of two pathways linking passion and elite performance, with harmonious passion being the most adaptive of the two.

Mageau *et al.* (2009) conducted three research studies on 229 French Canadian athletes and musicians, 163 children in an activity-specialisation summer camp and 149 parents of these children, and a short-term longitudinal study of 196 junior high school students in the early stages of learning a musical instrument. Results distinguished between obsessive and harmonious passion on the basis of identification with activity, preference for activity specialisation and autonomy support, but not for time and energy investment in the activity. The researchers conclude that children develop an obsessive passion for their activity when key adults gave less autonomy support to the child and also highly valued specialisation in the activity, and that both types of passion increase as people become more heavily involved in their activity. The researchers conclude the suggestion that obsessive passion is necessary to reach levels of excellence is not supported as similar performance levels were found in both harmoniously and obsessively passionate expert performers.

Both harmonious and obsessive passion were found to be linked to perceptions of susceptibility to sports-related injury risk in a sample of 170 competitive French-Canadian runners by Stephan *et al.* (2009). Obsessive passion is positively related and harmonious, negatively related. It was suggested that awareness of their propensity to engage in risky behaviour alerted the obsessively passionate runner to potential risk from injury. Whereas, a tendency to adopt precautionary measures to reduce risk in the face of early warning signals explains the low presentation of perception of risk for harmoniously passionate runners.

Donahue *et al.* (2009) anticipated higher levels of aggressive behaviour in obsessively passionate basketball players, especially those under self-threat. In the first study of 189 French-Canadian high school and college basketball players the results showed

that those with a predominant obsessive passion were more likely to behave with reactive aggression, particularly the male players. The second study ($n=60$, average age 14.8 years) replicated the results of Study 1 indicating across the three hypothetical situations that obsessively passionate players displayed higher levels of situational aggressive behaviours when experiencing self-threat. No difference was found between obsessively and harmoniously passionate players when experiencing self-affirmation. The authors proposed that obsessively passionate athletes may display defensive modes of operating, perceiving their identity to be under threat even in benign situations. They suggest that the aggressive levels of behaviour that these athletes display may be reduced if they are exposed to self-affirmation procedures.

Philippe *et al.* (2009a) investigated whether passionate people differed from non-passionate people in terms of their subjective well-being, and if having a passionate activity makes a difference for everyone across all life stages. In a study of 782 French-Canadian citizens, general happiness and personal growth were examined in the light of the participant's passion type. Results indicated harmoniously passionate participants scored significantly higher on measures of well-being than both obsessively passionate and non-passionate participants. Study 2 sought to determine the direction of the relationship in a prospective study over a 12 month period involving 343 French-Canadians. Harmoniously passionate people showed a significant increase in vitality relative to obsessively passionate and non-passionate people between whom there were no significant differences. The authors suggest the results indicate that being harmoniously passionate about an activity does make a difference in people's lives and contributes to their well-being.

Przybylski *et al.* (2009) tested The Passion Scale with 1,324 predominantly male (88%) video game players, mean age of 24 years, recruited to their on-line survey via an on-line game discussion forum. Using an adaptation of the Passion for Gambling Scale, itself an adaptation of Vallerand's Passion Scale (Rousseau *et al.* 2002), they found that obsessive passion was associated with lower levels of trait need satisfaction, higher amounts of game playing, greater tensions following game playing and low game enjoyment.

Caudroit *et al.* (2010) tested the relationship between both types of passion and two psychological disengagement variables (devaluing achievement, discounting performance) used during competitive events in a sample of 108 French male athletes. They found that harmonious passion was unrelated to strategies of psychological

disengagement, and suggested this was due to an individual's global self-esteem being not dependent upon sport performance therefore not threatened by failure. Having hypothesised that obsessively passionate athletes would have difficulty disengaging from the activity in the face of failure, the authors found only devaluing to have a significant association with obsessive passion. They propose that obsessive passion hinders the use of devaluing when faced with self-threatening situations. They suggest that not using devaluing strategies may explain why such individuals seem to incur negative experiences and have an absence of positive emotions.

Philippe *et al.* (2009b) examined the implications for different types of passion in game related affective and cognitive functioning experienced by national and international level French referees. In the first study ($n=90$) harmonious passion was found to be related to flow and positive emotions during a game, and unrelated to negative, whilst obsessive passion was related to negative emotional experiences during the game and unrelated to a state of flow. In the second study ($n=148$) the impact of an important bad judgement call made by the referee on affect and cognitive functioning was examined. Harmonious passion was shown to be negatively related to negative self-related emotions, stress, concentration problems and rumination consequent to a referee's error, and obsessive passion positively related to all except concentration problems. The authors conclude that the type of passion has important consequences for affective functioning during task engagement. Furthermore, each type of passion leads to different cognitive functioning after an important error, with harmonious passion acting to protect from and obsessive passion leading to important negative consequences. This in turn has implications for decision making with obsessive passion potentially giving rise to post error poor decision making because of an inability to control the affect arising from the experience of the error and rumination on the error.

Philippe *et al.* (2007) tested the role of passion for an activity on interpersonal relationships experienced in the context of that activity, and examined psychological processes involved in the relationship between passion and interpersonal relationships across four studies, using 4 different populations, and various passionate activities. They found that the type of passion experienced for an activity does matter, that it predicts the quality of interpersonal relationships experienced within the context of that activity. Harmonious passion is conducive to positive interpersonal relationships through positive emotions, and obsessive passion to negative interpersonal relationships through negative emotions. Depending on the type of passion an

individual has for an activity, they will experience very different types of emotional experiences and consequent interpersonal relationships. This result highlights the implications that type of passion has for oneself and for others, and by extension for other aspects of life such as team activities, productivity, and performance. Arising from this study, the authors suggest that obsessive and harmonious passion trigger broadening or narrowing thought processes, that emotion type might possess a social function, and others perceive the consequences of narrowing/broadening processes and react to that individual on the basis of this emotional information.

Vallerand *et al.* (2010) extend the model, examining the role of passion for work in burnout. In samples of experienced 97 French and Canadian nurses they found that obsessive passion predicted an increase in conflict between work and other life activities, which in turn predicted increases in burnout over time. Harmonious passion was related to work satisfaction, which prevents the occurrence of burnout.

Ho *et al.* (2011) administered Vallerand's Passion Scale to 557 employees of an insurance firm to explore their passion for their job. Following the work of Vallerand *et al.* (2003), they conceptualise the construct *passion for one's job* as being either harmonious or obsessive in nature, and using structural equation modelling, confirm construct reliability and validity. Their results show that the passion employees experience for their job is either harmonious (80.9 of respondents) or obsessive in nature (38.0 of respondents). In addition, their results indicate that each type of passion differentially impacts work performance. Employees with a harmonious job passion perform better at work, through the impact of cognitive absorption and attention to work performance, whilst obsessive passion is negatively related to cognitive attention but has no significant relationship to work performance. The authors suggest that passion is not unquestionably a positive characteristic at work, and that employee enjoyment of benefits from work performance is linked to type of passion. The authors speculate that prospective employees who profess an obsession for their jobs may not be the best performers, because obsessive passion has no significant impact on work performance whilst harmonious passion does. However, this overlooks the small size of the effect of each passion on work performance (0.12 for harmonious, and -.004 for obsessive passion) suggesting other unknown variables have had a greater impact on the work performance of this sample than either harmonious or obsessive passion.

The question of whether an activity, assumed to have widespread benefits, can be associated with more or less positive outcomes as a function of the type of passion an individual experiences for the activity was examined by Carbonneau *et al.* (forthcoming). The first study, an on-line study of 75 French-Canadian yoga participants, indicated harmonious passion to be significantly related to psychological well-being, positively related to adaptive outcomes and negatively to non-adaptive outcomes. Obsessive passion showed no significant relationship with the same outcome variables, the authors suggesting that the practice of yoga is accompanied by experiences of psychological well-being, but only to the extent that the passion for yoga is harmonious in nature. The second study of 89 yoga practicing Canadians was conducted over a three month period and gave support to the findings from Study 1. Obsessive passion for yoga was shown to be associated with an increase in negative emotions whilst harmonious passion for yoga predicted more adaptive changes in psychological and health outcomes over time.

2.5.5. Obsessive passion's upside

Whilst the literature does not suggest a downside for harmonious passion and demonstrates the positive benefits of harmonious passion, there is also evidence that obsessive passion is not always a problematic phenomenon.

Amoiti *et al.* (2006) explored person-environment fit in a short-term longitudinal study (3 questionnaires) of French-Canadian hockey players. They were examining the possibility that one's passion for an activity would interact with the type of environment in which it was performed, thereby influencing psychological adjustment over time. Psychological adjustment was assessed by computing an index from three separate scales: a positive/negative affect scale; a life satisfaction scale; a depressive symptoms scale. They hypothesised that an obsessive passion would suit a highly competitive environment requiring over-involvement in the passionate activity at the expense of other life domains, whilst less competitive environments would fit better with harmoniously passionate individuals with more diversified interests. Their study comprised 233 male hockey players, aged 13 to 20 years, belonging to three of the most competitive non-professional hockey teams in Québec. They found that obsessively passionate athletes playing in the highly competitive leagues reported higher levels of psychological adjustment than did harmoniously passionate athletes

playing in those leagues. The converse was found for the less competitive leagues suggesting the importance of the match between the individual and their environment.

Amiot (2006) suggest that obsessive passion is not always linked to poor outcomes and harmonious to good. They observe that in a highly competitive environment a harmoniously passionate person may experience feelings of conflict between the activity and other life goals, whereas neglect of other life domains may fit the objectives sought by an obsessively passionate person explaining a lack of conflict. As a limitation to the study, the authors note the short time frame of the study may impact the results, and question if those with a harmonious passion competing in the highest leagues needed more time to adjust to that highly competitive environment. Harmoniously passionate players might show good psychological adjustment once they had rearranged their lives to accommodate the increase in the activity and learned to mentally disengage from it when not engaged in it, thus experiencing positive affect.

In a 2007 paper, Vallerand *et al.* demonstrated that obsessive passion was a mixed source of activity investment and that the dualistic model of passion was applicable to performance attainment. In a study of 143 French-Canadian dramatic arts students, they found both types of passion predicted deliberate practice and performance. A second study of 130 undergraduate French-Canadian psychology students replicated these results and further showed that obsessive passion also predicted mastery goals, performance-avoidance (facilitating performance indirectly) and performance-approach goals (negatively impacting on performance attainment). They also demonstrated that obsessive passion, not harmonious passion, was negatively related to subjective well-being. (Vallerand *et al.* 2007).

Following on from the work of Amiot *et al.* (2006), Sheard *et al.* (2009) examined the nature of the passion exhibited by 78 English professional footballers from three different teams across three different playing standards (international ($n=33$), club ($n=25$), and academy ($n=20$)). Partial evidence for Amiot *et al.*'s "rigid persistence paradox" was evident in the significantly higher levels of obsessive passion displayed by the international and academy players, compared to the club players. The pressuring contingencies attached to performing at, or aspiring to perform at, these levels (national representative roles and potential/actual lucrative salaries) were suggested to make these players more vulnerable to higher levels of obsessive passion. Other unexpected and significant results were the lack of relationship between obsessive passion and negative emotional experience, and the positive

correlation between positive affect and obsessive passion. For these players, football is a career choice not a hobby or leisure activity. The career distinction was offered as the explanation for these results, suggesting that cognitive interpretation may mitigate or filter the effects of negative emotional experiences.

2.5.6. Which is the “right” passion?

It is feasible to suggest that obsessive passion may be the source of both positive and negative outcomes for entrepreneurs and their ventures. These negative outcomes might include poor, less effective personal relationships; engaging in risky/ineffectual business decisions through narrower thought/action repertoires; poor health; business failure and the subsequent problems and issues arising from business failures. However, obsessive passion may also be a requirement for success in business environments because such environment are highly competitive and entrepreneurs will continue to pursue their goals in the face of the stress, uncertainty, challenges, unexpected outcomes and other negative features that characterise the venture process.

It is suggested that obsessive passion is the “right” passion for a successful entrepreneur, because it is obsessive passion that will enable an entrepreneur to sustain action in the face of competition, uncertainty, and less adaptive or maladaptive outcomes that characterise entrepreneurship. By contrast, a harmoniously passionate person might disengage from the passionate activity in the face of negative or maladaptive outcomes. Given that the process of entrepreneurship is fraught with negative and maladaptive outcomes in the form of stresses, uncertainty, challenges and unexpected results it seems feasible that sustained entrepreneurial action requires an obsessive passion if it is to be ongoing and therefore lead potentially to entrepreneurial success.

This is not to suggest that harmonious passion has no role in entrepreneurship. However, it is likely that obsessive passion may be important to entrepreneurial action to the extent that individuals without an obsessive passion for their venture may create smaller ventures or withdraw from the venturing process. An entrepreneur’s harmonious passion is likely to be unrelated to their capacity to sustain entrepreneurial action, and only related to perceptions of entrepreneurial success.

That entrepreneur's experience passion is not disputed. What is of interest is the nature of that passion. Is it harmonious or is it obsessive in nature? In addition, if it is both how does either or both harmonious and obsessive passion contribute to entrepreneurial action, and subsequent entrepreneurial success?

2.5.7. Passion – final comments

This section reviewed the current literature on passion, in particular within the domain of entrepreneurship. Entrepreneurial passion is experienced as motivating, energising, enabling, positive emotions that are both derived from and stimulated by engagement in the venture (Cardon *et al.* 2009). The presence of passion enables entrepreneurs to view the ventures as not “work” or “task” but something that they “love” (Baum *et al.* 2004; Vallerand 2008). This implies that engagement in venture activities produces pleasurable sentience, and serves to facilitate the entrepreneur in the face of difficulties, stresses and challenges that characterise entrepreneurship. The venture itself becomes a self-defining activity for the entrepreneur (Cardon *et al.* 2009).

Thus, it is suggested that passion provides the energy or fuel to persevere in the industrious and ambitious activity that constitutes entrepreneurial action. However, passion is dualistic in nature and it is suggested that harmonious and obsessive passion may contribute to entrepreneurial action and consequent entrepreneurial success differently.

2.6. Resilience

Resilience is where it's at. Being an entrepreneur really can suck! You're about to run out of money, your customers are pissed off at you, lawyers are chasing you, employees are scared shit they won't get paid, your wife or husband want to divorce (if not kill) you. Your kids don't see you as anything more than a source of cash. I could go on! There are so many things which can and will go wrong and you will constantly be tested.

Paul Jozefak, Entrepreneur and Venture Capitalist (Jozefak, 2011)

Use of the term the dark side of entrepreneurship serves to focus attention on the fact that the process of entrepreneurship is difficult, challenging and not for the faint hearted. It is suggested that, given entrepreneurship's dark side, the capacity of an individual for sustained entrepreneurial action may be a function of early life formative

experiences of deprivation and disadvantage that result in the development and practice of resilience from an early age.

2.6.1. Deprivation and disadvantage

The idea that some form of deprivation or disadvantage experienced in the childhood of entrepreneurs contributed in some way to entrepreneurial success, has been supported (Collins *et al.* 1964; Kets de Vries 1985; Madlin 1985) and disputed (Bird 1989) in the literature.

In a 1960-62 study of 150 small business manufacturing entrepreneurs in Michigan, childhood patterns of security and insecurity, love and hate, support and its lack were found to provide the modes of coping on which the subsequent act of entrepreneurship was modelled (Collins *et al.* 1964). Kets de Vries found that the relationship with fathers, or lack thereof, impacted on the child and the resulting feelings of rage, insecurity and low self-esteem defined the entrepreneur (Kets de Vries 1996; Kets de Vries 1985). Venture Magazine reported on a survey of its 1,934 readers in which 55% of business founders described their fathers in negative terms (Madlin 1985). Venture Magazine's findings were suggested to support the view of Eva Thompson, from the University of Massachusetts' Small Business Development Centre who, with respect to what was known of entrepreneurs was quoted as saying "...there's usually some kind of deprivation - financial, physical, or emotional - in their childhood relationship with their father..." (Madlin 1985).

Bird (1989) has reviewed the literature and found no overwhelming support for this view, instead noting that entrepreneurs did not universally experience such a pattern in family dynamics, and patterns of deprivation and disadvantage were to be found in the backgrounds of non-entrepreneurs. Furthermore, Bird notes a preponderance of entrepreneurs whose early family life was characterised by balanced, nurturing and supportive family backgrounds. Indeed, Kets de Vries' seminal work on the dark side of entrepreneurship, which contributed to the suggestion that entrepreneurial success has its genesis in the deprivation and disadvantage of the early life of the entrepreneur, was based largely on an in-depth psychoanalysis of only one entrepreneur (Kets de Vries 1996).

Anecdotes about the childhoods of well-known entrepreneurs come readily to mind giving support to the suggestion that successful entrepreneurs did have childhoods

characterised by deprivation or disadvantage and that somehow these childhood experiences drove or shaped their ambitions. For example: Lindsay Fox (Australian “rucking magnate”) came from an impoverished background (*Lindsay Fox* in George Negus Tonight 2004); Richard Pratt (Australian “cardboard king”) fled Nazi persecution as a child and had a humble background (Stewart 2007); Sidney Myer (founded an Australian “retail giant”) was an immigrant Jew who fled poverty in Russia to come to Australia (*Sidney Myer Fund and the Myer Foundation History* 2009); Bob Ansett (founded Budget RentaCar and other transport companies) had a relatively poor childhood living for a while in an American trailer park (Ansett *et al.* 1986).

At the heart of this discussion and these observations is the implication that experiences of deprivation and disadvantage somehow motivate certain individuals and thereby contribute to the attainment of entrepreneurial success. There may be some truth in this observed connection between deprivation and disadvantage and entrepreneurial success, although perhaps it is indirect. That is, deprivation and disadvantage may contribute to entrepreneurial success through their role in developing resilience. The development of resilience in childhood provides explanatory link between the observations of deprivation or disadvantage in childhood and the evidence that many entrepreneurs have childhoods characterised by balanced, nurturing, supportive family backgrounds. That is, the development of resilience requires the combination and interaction of both risk factors and protective factors in the early years of an entrepreneur.

2.6.2. Adaptation

Charles Darwin’s ideas on natural selection and survival of the fittest resulted in the development of ecology, the study of the relationship of organisms with and between their environments (Moos *et al.* 1976). Human ecology is mainly concerned with the study of communal adaptation, but recognises the integral role of individual adaptation in successful species survival (Moos *et al.* 1976). Adaptation is what individuals do when striving towards an acceptable compromise by using a range of coping, defence and mastery behavioural strategies involving the simultaneous management of three variables: securing adequate information, maintaining satisfactory internal conditions; and keeping up a degree of autonomy (White 1975). White comments that when an individual engages in adaptive behaviour designed to suit their own purposes, this can be interpreted by others as signs of maladjustment or worse:

...in the psychological and psychiatric literature there lies a concealed assumption that dangers must be faced because they are not really there, that any delay, avoidance, retreat, or cognitive distortion of reality is in the end a reprehensible piece of cowardice...

....Tactics of delay and refusals to participate, frustrating as they may be to the psychologist and thus all too readily given a derogatory tag like "anxious avoidance" and "withdrawal", may actually in the highest tradition of adaptive behaviour ...(White 1975)

Longitudinal studies have been published which report on the successful adaptation to their circumstances by children who experienced forms of deprivation and disadvantage in their early years, and of whom a large proportion went on to have successful adult lives (Kadushin 1975; Schoon 2006; Werner *et al.* 2001). So it appears that whether or not experiences of deprivation and disadvantage overwhelm a child might be related to each individual child's capacity to adapt, and behaviour that is adaptive for one individual may be viewed as something undesirable by an observer of that behaviour.

2.6.3. Resilience defined

Norman Garmezy is generally credited as being the founder of the contemporary research into resilience (Rolf 1999). In an interview, Garmezy defined resilience as manifest competence despite exposure to significant stressors; it is the combination of psychosocial elements and biological predispositions, that is resilience is what results from an aggregation of protective factors (Rolf 1999).

The existence of resilience is not readily evident. The various definitions of resilience are derived from differing sources of information about the presence of resilience. Resilience is recognised as being present when there is evidence of: a benign or less malignant outcome in the face of life stress; forestalled adverse developmental outcomes that would otherwise arise because of personal or environmental characteristics; the factors that protect from and therefore forestall adverse outcomes; the factors that promote stress or risk (Kaplan 1999).

Accordingly, resilience is variously defined as that ability to adapt in the face of trauma, adversity, tragedy or even significant ongoing stressors (Newman 2002). It embodies personal qualities that enable one to thrive in the face of adversity (Connor *et al.*

2003), and is often considered a personality characteristic that moderates the negative effects of stress and promotes adaptation (Ahern *et al.* 2006). Frequently the quality of resilience is attributed to individuals who, in the face of overwhelming adversity, are able to adapt and restore equilibrium to their lives and avoid the potentially deleterious effects of stress (Wagnild *et al.* 1993). Resilience may be viewed as a measure of successful stress coping (Connor *et al.* 2003). Resilience is also used to describe good developmental outcomes despite high risk status, sustained competence under stress, and recovery from trauma (Werner 1995).

Kaplan (1999) offers a model to understand resilience that encapsulates key constructs inherent in the various definitions of resilience:

... the components should include, as a minimum, constructs representing outcomes and those reflecting the “causes” of such outcomes. These variables as they have appeared in the literature may be considered parsimoniously under three rubrics: outcomes, risk factors (and their complements), and protective factors (and their complements)....(Kaplan 1999).

2.6.4. Outcomes

Resilience derives its meaning from its relationship to more or less desirable outcomes, and these outcomes are typically defined using normative judgements about the appropriate responses given the culture, environmental circumstances and stages of development (Kaplan 1999). Outcomes are subjectively defined as desirable, and can be a positive or negative range of states including: physical health, substance abuse, psychopathology, maladaptive behaviour, competence, self-actualisation, and reality-oriented self-acceptance (Kaplan 1999).

Masten (2001) uses lists of developmental tasks for judging appropriate adaptation and therefore inferring resilience. For example school adjustment (attendance, appropriate behaviour), academic achievement, peer acceptance, having at least one friend, moral conduct (following school, family, community rules) are indicative of good outcomes in childhood. In teenage years tasks such as adjustment to pubertal change, romantic relationships, and coherent identity are used. In adulthood indicators are related to earning a living, establishing a family and performing community service (Masten *et al.* 1988). Successful outcomes for at risk children can be recognised as

having been achieved where the adult conforms to the descriptors “competent, confident, and caring” (Werner 1995).

2.6.5. Risk factors

In order for a person to be considered resilient, they must have had a significant threat or risk to their development that had the potential to derail normative development, and have an observable track record of meeting major expectations of a given society or culture in the context of behaviour of children of that age and situation (Masten 2001). Risks are actuarially based predictors of undesirable outcomes, risk factors have been operationally defined both as individual events and as accumulations of individual events, and have been used to create indicators of development with a view to predicting the risk that children will experience poor outcomes in adulthood (Masten 2001).

Accepted high risk factors in childhood for maladaptive outcomes in adulthood include family social and economic disadvantage, parent-child interaction, family violence, death, illness, divorce, parental deviance or mental illness, abuse, family conflict and family change (Fergusson *et al.* 1996; Masten 2001; Masten *et al.* 1988).

2.6.6. Protective factors

Several studies have looked at protective factors that are present in the characters and environments of at risk children who display successful outcomes. Protective factors are resources that can moderate the person's reaction to risk exposure so that adaptation is more successful than would otherwise be (Werner 1995). A broad range of protective factors can be grouped into *individual characteristics* (eg. positive temperament, internal locus of control, high self-esteem, positive emotions, moderate to high intelligence), *family factors* (eg emotionally supportive and warm relationships with at least one parent, effective parenting styles), *school factors* (eg access to quality schools, feeling a sense of belonging, good peer relationships) and *community factors* (eg social support from adults, involvement in other prosocial organizations) (Cohn *et al.* 2009; Murray 2003). Frequently cited factors include connections to competent and caring adults within or outside of the family, cognitive and self-regulation skills, positive views of self, motivation to be effective in the environment, spirituality and temperament, problem solving abilities, attractiveness to peers and adults, manifest

competence and perceived efficacy; planfulness and aspiration (Fergusson *et al.* 1996; Garmezy 1996; Masten 2001; Richardson 2002).

Protective factors are interactive with each other and with the child's developmental processes and experiences, and can also be indirect in their protection of the child (Murray 2003; Rutter 1990). There is evidence that children with a coping pattern that combines autonomy with a successful ability to recruit competent adult caregivers, or who have temperamental characteristics that elicit positive responses from a wide range of caregivers, are more likely to develop resilience in later life (Werner 1995). Protective factors could be viewed as a continuum in that at one end the factor represents a risk to the child (eg ineffective parenting) and at the other a protective factor (eg effective parenting) (Murray 2003).

2.6.7. Resilience disputed

The contribution of risk and resilience factors to positive outcomes in adulthood has been well documented through empirical longitudinal studies (Fergusson *et al.* 1996; Kadushin 1975; Schoon 2006; Werner *et al.* 2001). Other studies of children in particular risk situations such as family breakdown, chronic poverty, parental psychopathology and war (Werner 1995) have also provided rich information on the concept of risk and adaptation. The risk and resilience framework resonates so well with practitioners and theoreticians that interventions are suggested as being applicable to enhance adult outcomes for children in other situations, such as children with disabilities (Murray 2003), immigrant children (Yeh *et al.* 2008), and children who have or have had chronic physical illness (Pless *et al.* 1996).

However the construct of resilience is not without its critics. It is neither clearly a psychological trait nor a label for a category of events and as such its face, content and construct validity are questionable (Bartelt 1994). To some resilience represents an incomplete theory which makes subjective value judgements about outcomes, risks and assets, and assumptions about the cause of adaptations that may not have been explicitly described or consciously examined (Rigsby 1994).

The identification of factors as risks is contentious (Rutter 1990). For example the presence of these factors may be temporary, they may impact differently on those exposed to them, their presence may not be indicative of the presence of a risk, and people experiencing such factors may not perceive themselves to be –at risk” (Schoon

2006). The traditional approaches to stress research – family background or social structure, cumulative stressful events, and singular stressors – all share limitations involving conceptualisation of risk, and do not provide an explanatory solution to the highly differentiated arena of stressful experiences and the variables that are associated with adjustment (Gore *et al.* 1996). Yet others see a practice of automatically invoking resilience as a quasi explanation for virtually any factor associated with reduced rates of negative outcomes among high-risk children (Richters *et al.* 1990).

2.6.8. Resilience and entrepreneurs

Resilience is a construct suggested to be important in the context of entrepreneurship. It appears in academic writings, hardcopy and online business press, and business blogosphere; is linked to the desirable characteristics of both entrepreneurs and their organisations; and offered as partial explanation for success (Ahangar 2010; DeAngelis 2011; Featherstone 2009; Kuemmerle 2002; McKaskill 2007; Wee 2008). Research has been conducted examining resilience as a feature of the entrepreneurial organisation (Gittell *et al.* 2005; Sutcliffe *et al.* 2003), the entrepreneurial team (Blatt 2009) and, as the following section demonstrates, a characteristic or trait of the individual entrepreneur.

In an article proposing a new perspective on entrepreneurship curriculum design, Duening (2010) proposes the *resilient mind* as a meta category representing a host of cognitive sub-skills identified through research to be unique to successful entrepreneurs. He suggests that teaching resilience in a classroom setting, although difficult, might be feasible and good preparation for coping with entrepreneurship downsides such as real-world failure experience.

Hayward *et al.* (2010) conceptualise emotional, cognitive, social and financial resilience as forms of resilience. Resilience is understood as the ability to bounce back from entrepreneurial failure. Since roughly half of all ventures fail within five years of their inception, most serial entrepreneurs will have experienced venture failure and therefore the ability to bounce back is argued as a crucial dynamic in new venture formation. The authors argue that resilience informs confidence, and confidence facilitates the capacity of the individual to broaden and build their thought repertoires resulting in access to additional or improved resources for their ventures, and facilitates their likelihood of forming subsequent ventures.

Blatt (2009) argues that resilience is as important for entrepreneurial teams as it is for individuals. The uncertainty, ambiguity or novelty inherent in the entrepreneurship process is coupled with the emotionally intense experiences tending to generate a less flexible and schema-driven behaviour in the face of changing unscripted environments. In a survey of 122 knowledge-based new ventures founded by teams Blatt tested the suggestion that teams, too, could be resilient by including items from the Brief Resilient Coping Scale. The results of the study were hampered by the data being collected from only one member of each team, raising questions about how the resilience factor was constructed.

The resilient responses to simultaneous perceived threat and opportunity by 126 managers of small incumbent firms were examined in a study by Dewald *et al.* (2010). The authors developed a framework of cognitive resilience to inform organisational resilience. A combination of cognitive resilience (the ability to notice, interpret, analyse, and formulate responses) and behavioural resilience (the action of implementing the formulated response or intention developed through cognitive resilience), this framework does not test the construct of resilience directly. By testing variables proposed to capture the framework and derived specifically for this study, the authors find that the 126 managers showed cognitive resilience when they formed intentions in response to simultaneous high threat and opportunity situations.

Hmieleski *et al.* (2008) in a sample of 116 founders and top managers of USA new venture firms found that psychological capital aides entrepreneurs to build resistance to the wide range of psychological stressors inherent in leading new ventures. Psychological capital is conceptualised as comprising four distinct components: self-efficacy, optimism, hope, and resilience. Together these components were found to provide the entrepreneur with a basis for achieving job satisfaction, reduced the effects of work tension on job satisfaction and provided a pathway to further develop their psychological capital. They suggest that psychological capital is important in explaining why entrepreneurs are able to persist over time, and within their data demonstrate higher mean scores for psychological capital in serial entrepreneurs than novices, suggesting that it can be learned. To capture the construct psychological capital four measures were used, including a resilience scale, which were summed together to generate an index. Therefore the results for the individual scales were not reported.

Resilience is identified as one of the three hallmarks of the entrepreneur, the other two being perseverance and permanent self-motivation. In a review of the entrepreneurship literature published in four journals between 2000 and 2008, resilience was identified as an important attitude for the entrepreneur operating in the category of “business development”, and best taught in entrepreneurship courses using developmental nurturing teaching strategies (Albornoz 2008).

A quasi-ethnographic approach was used by Amanjee *et al.* (2006) to examine the presence and type impact of schemata inherent in seven successful South African entrepreneurs. Using Bennett-Goleman’s 2001 maladaptive schemata model, 10 maladaptive characteristics⁵ were renamed and adaptive characteristics formulated to reflect the realm of entrepreneurship, one being *resilience*. However, the description does not accord with usual definitions/descriptions of resilience, being more statements of familiar descriptions of the stereotype of the entrepreneur (belief in competence, mindful of setbacks, remains positive, works harder and is more resilient in overcoming obstacles and setbacks). In analysing the interview data, a theme of being able to bounce back, live through problems and learn from them emerged. This supported the suggestion of a resilience schema as it emerged from the data of all participants.

Despite the criticisms of the complex non-linear causes and the incomplete understanding of its components, resilience is widely accepted in the literature as a phenomenon that exists when functional outcomes are perceived in the context of risk and life stressors, or adaptation to a risk situation as a consequence of the interaction of a range of risk and protective factors (Olsson *et al.* 2003). See in particular Richardson (2002) and Masten (2001) for in depth reviews of the resilience literature including empirical studies.

Maslow provides an explicit place for experiences of deprivation as a precursor to success, because of the motivating effect such experiences can have. Maslow suggests that experiences of *threatening*⁵ deprivation of basic needs can (consciously or unconsciously) motivate an individual to take adaptive action to avoid threats to survival (Maslow 1970). The resilience framework presents us with risk factors interacting with protective factors to lead to successful outcomes. It is suggested that the extent of an individual’s ability to take adaptive action in entrepreneurship is contingent upon their development of resilience.

⁵ *My italics for emphasis*

2.6.9. Resilience – final comments

In this section resilience, its antecedents and consequences have been reviewed. The resilience framework offers an opportunity to attempt to explain the apparent capacity for entrepreneurs to continue in the face of the stressors and uncertainty that characterise entrepreneurship. Adaptation leads to the development of resilience, and thus the construct of resilience may provide an explanatory linkage between the entrepreneurs' early family life and their capacity for sustained entrepreneurial action. That is, it is possible that entrepreneurs' childhood experiences of deprivation and/or disadvantage motivated them to take action to overcome stress and adversity and, concomitant with the active presence of protective factors, they were able to do so, thus developing resilience.

It is suggested that it is resilience developed in childhood that contributes to the entrepreneur's ability to sustain entrepreneurial action in the face of stress and adversity, which in turn contributes to entrepreneurial success.

2.7. Obsession

You have to be obsessive to grow a business
Bruce Gray, founder Sirtex Medical (Gome et al. 2003)

Abraham Maslow (1970, p. 33) cautions that to understand something one should look at it not only from the perspective of those made sick by it, but also at it from the perspective of the healthy. Obsession in the academic literature is researched from the perspective of those made ill by it. Furthermore, it seems that research into obsession focuses on extreme presentations of it. Nonetheless, in so doing light is shed on how obsession is experienced by those not troubled by it.

Given the evidence that obsessions exist in healthy populations, it is possible that obsession is under-researched and under-described in the literature. Therefore, the consequences of obsession, other than its capacity to generate illness, are not well known. The use of the word "obsession" in connection with entrepreneurs, and the potentially productive aspects of the phenomenon, lead to the suggestion that obsession may have a place in the entrepreneurship literature.

2.7.1. Obsession – a word of many meanings

The word “obsession” is believed to have come from the Latin word for besiege: “obsess”. Roman Commanders would obsess a citadel prior to storming it (Davis 2008). “Obsessive” is a term well suited to describing the entrepreneur – that Schumpeterian heroic figure with the will to found a private kingdom, captain industry, destroy old patterns of thought and action in order to create new ones (Schumpeter 2004).

Today, in the English language the verb “obsess” retains its Roman connotation, meaning to be preoccupied with something (Miller *et al.* 2006a). In non-clinical definitions, the word “obsessive” means a person who has obsessions, or to be characterised by an obsession (Miller *et al.* 2006b), it is also recognised as both a term of abuse and of approbation (Sandler *et al.* 1960). Common dictionary definitions for “obsession” include “an unhealthy and compulsive preoccupation with something or someone” (Miller *et al.* 2006b) and the “domination of one's thoughts or feelings by a persistent idea, image, desire, etc” (Random House 2006). These two dictionary definitions show the generally accepted understandings of the word – one having to do with something undesirable, the other having to do with something that preoccupies thoughts and feelings but is not necessarily undesirable.

In clinical psychological literature the term “obsession” is recognised as having a meaning in a number of contexts: a well-recognised clinical condition; a descriptive label applied to a single symptom; or an indication of a type of character (Sandler *et al.* 1960). “Obsession” is said to be a word that has been appropriated from the psychoanalytic literature into everyday usage and denotes a propensity to carry out an activity with particular care, or to be excessively concerned with some idea or activity (Rachman *et al.* 1980).

However, Davis (2008) traces the evolution of the word ‘obsession’ describing how it came to be claimed as a secular medical phenomenon. He reviews historical usage of the word identifying a split in the 1800's, between the desirable culture goals that could be achieved through obsessive behaviour and the undesirable disease called obsession. The split occurred when psychiatry and neurology came into their own and established taxonomies and categories whose effect it was to separate out varieties of behaviour into the pathological and the heuristic (Davis 2008).

2.7.2. Obsession and entrepreneurs

The word obsession is also to be found in the popular literature that reports the experiences of entrepreneurs and entrepreneurship. For example, food entrepreneur Maggie Beer describes herself as having an “at times obsessive” approach to quality control (McUtchen 2010), and gardening entrepreneur Jamie Drury reportedly talked about how it “doesn’t hurt to be a bit obsessive” and being up all night because he “can’t stop my brain” (Cadzow 2010). A passion verging on obsession is credited with being pivotal in the success of a young entrepreneur (Sloan undated), and an online forum discusses whether it is obsession or genius that is behind the huge success of online internet forum Gaia Online (Strategy 2007). Hornik (2008) blogs that obsession fuels Silicon Valley (Hornik 2008), Anita Roddick is quoted as saying “mean, how do you teach obsession? Because it is obsession that drives the entrepreneur's commitment to a vision of something new.” (Allen 2008).

The examples above raise an interesting question about what is meant when the words “obsession” or “obsessive” are linked to entrepreneurs. All cultures describe how a person behaves in terms of a consistent “personality” - that is we describe people through their behaviours, characteristics or traits which are grouped together to form personality descriptions and this is a common feature of humanity (Burger 2008). Thus within each culture it is commonly understood what is generally meant when a personality type is described, and research has demonstrated similar personality dimensions are found across and between different countries (Barrett *et al.* 1984; Burger 2008; Eysenck *et al.* 1984).

However, to have what the psychological fraternity describe as an obsession or an obsessive personality may be something quite distinct from how the non-clinical world may use the term. The examples above give adequate evidence of this in that the terms as they are used seem to imply continued on-going focus or drive towards a particular goal, or a character trait, or an amorphous indefinable “something”. None of them implies an intrusive thought or range of traits that *impair* the individual's capacity to function effectively.

Furthermore, entrepreneurs report having persistent thoughts about their ventures that intrude into all other aspects of their lives, consume an excessive amount of their time, are highly disruptive of any other routine, interfere with relationships with others and non-venture related tasks, replace other satisfying and useful behaviours, and distract

from any other activity (Cardon *et al.* 2005b; O'Toole *et al.* 2005). Furthermore, their relationship with their venture is often described in a similar manner (Kraar *et al.* 1985) and entrepreneurs talk of there being no distinction between work and non-work times (Kraar *et al.* 1985; Strickland 2005). There is also evidence in the literature that individuals may find their obsession useful. Anecdotal evidence from entrepreneurs suggests that their persistent and all pervasive thoughts about their ventures can be enjoyably challenging, the source of positive stimulation and energising forces (Ansett *et al.* 1986; Baum *et al.* 2004; O'Toole *et al.* 2005; Schindehutte *et al.* 2006). So described the nature of these thoughts seems to be consistent with some if not all elements of an obsession.

It is likely that the clinical literature does not fully describe obsession, that it circumscribes obsession to its extreme form as typified in clinical populations whose levels of distress have lead them to seek help from the psycho-medical fraternity. When researchers have looked for examples of obsession in non-clinical populations, they have sought out these as exemplars of obsession and obsessive personality. It is possible that the entrepreneur's intrusive thoughts are responsible for stimulating the positive passionate feelings that entrepreneurs report they have for their ventures, rather than causing the feelings of distress and discomfort more typically associated with the illness obsession. In addition, it is likely that entrepreneurs are alert to the need to manage these intrusive thoughts, to corral them so that they can turn their attention to other areas of their lives.

There is evidence that obsessive personality traits like self-control, perseverance, dependability, orderliness, and rationality are strongly encouraged, and serve to enhance self-esteem, facilitate resistance to stressors, and work in the service of reducing anxiety allowing the individual a sense of mastery, control and meaning thereby helping to facilitate construct action in the world (Pollak 1987). Thus, the pejorative value associated with the word "obsessive" may well be misplaced. For not only would it appear that obsessive-compulsions are normal behaviours and traits, but also these traits may well be particularly valuable to certain endeavours. In our society we are alert to the link between genius and obsession (Davis 2008). Many individuals display to varying extents obsessive behaviour without being obsessive to the point of having a personality disorder or clinical symptoms (Rachman 2003), and disorders are themselves suggested to be representations of extreme or pathological forms of normal personality traits (McCrae *et al.* 1990; Ryder 2007; Warner *et al.* 2004). It has been

observed that society benefits when people with obsessional personality traits manage to harness them and put them to good use (Rachman *et al.* 1980).

2.7.2.1. Obsessive personality

The traits that characterise obsessive personality are orderliness, parsimony, rejection of others, emotional constriction, obstinacy, severe superego, rigidity and perseverance (Pollak 1979), or alternatively perseverance, industriousness, thriftiness, ambition, self-control (Paykel *et al.* 1973), or alternatively again inertia, inconclusiveness, orderliness, mood changes (Ingram 1961). Being possessed of the personality traits may not be a precursor to the disorder, that is the traits and symptoms may not be related (Carr 1974; Pollak 1979).

There is disagreement as to whether or not the premorbid personality of the obsessive compulsive disorder (OCD) patient is the obsessive type and if obsessive type personality traits increase the risk of developing obsessive-compulsive disorder. Some researchers support this suggestion (Bannon *et al.* 2006; Durdle *et al.* 2008), and others are firm in their view that the evidence does not satisfactorily support this view (De Silva *et al.* 2004; Joffe *et al.* 1988; Rasmussen *et al.* 1998). It has been suggested that use of the term “obsessional personality” to describe a particular personality type may be misleading because the traits do not occur against the will of the person, or compel the person to act, nor cause detriment to the person’s everyday existence (Carr 1974). Despite this persuasive argument against the use of the term for a personality type, the term seems to be widely accepted in the psychology literature to describe an individual whose personality consists of particular constellations or traits, defences and life-style without having psychiatric symptoms (Pollak 1979).

Pollack reviews the literature on obsessive-compulsive personality in 1979 and again in 1987. He finds that there is considerable consensus in the descriptions that emerge from the literature and provides a broad composite of the obsessive-compulsive personality type, whilst warning that no pure embodiment exists of a particular personality type (Pollak 1979, 1987).

Whilst the aetiology of, and boundaries around, obsessive personality and obsessive-compulsive personality are not comprehensively agreed (Jenike 1998), the dominant psychological perspectives explaining the origin of the personality type or pattern all

have in common an emphasis on the critical influence of early childhood experience (Pollak 1987). Recent empirical evidence is that childhood trauma is moderately but significantly linked to obsessive-compulsive symptoms in adults (Mathews *et al.* 2008). Interestingly in each perspective on obsessive-compulsive personality, common themes of the child seeking dominance and control in order to achieve safety or autonomy, or experiencing their opposites, vulnerability and powerlessness (Pollak 1987), are evident. There is slight evidence to suggest a comparable obsessive-compulsive orientation in parents of obsessive-compulsive children (Jacobi *et al.* 2006), and an emerging indication of genetic basis to obsessive-compulsive disorders (Arnold *et al.* 2006; Pollak 1987). It had been suggested that the interaction of genetic factors with a childhood family environment characterized by authoritarianism, rigidity, and high expectations contribute to the development of the obsessive-compulsive personality (Bartz *et al.* 2007; Pollak 1987).

2.7.2.2. The upside of an obsessive personality

In reviewing the obsessive-compulsive literature Pollack (1987) identifies the obsessive-compulsive personality described in the psychoanalytic literature as Freud's "anal character type". Sigmund Freud is attributed with having coined the term "anal" to describe a group of mainly adaptive character traits, experienced as ego-syntonic by the person and therefore highly valued, and a source of pride and self esteem reflecting self-confidence (in the extreme complacency and pedantry) and self-willedness (Trijsburg *et al.* 1987). Freud's "anal" adaptive behaviours were understood in contrast to the term "obsessional", which described maladaptive behaviours, yet many psychometric questionnaires measure not only adaptive (anal) traits but also maladaptive (obsessional) traits – notably uncertainty and doubt, thus confounding the meaning of both anal and obsessional (Trijsburg *et al.* 1987). Over time, the anal and obsessive personality types both came to be described as "obsessive", and in so doing, the desirable and useful adaptive anal traits were definitely associated with maladaptive obsessional character traits (Trijsburg *et al.* 1987).

Ingram (1961) used the technique of comparative matching to examine the descriptions of obsessional personality in the psychiatric literature and the anal-erotic character in psychoanalytic literature and concluded that the two descriptions differ only in emphasis. Much of the difference in the traits described is explained in terms of the success or failure of each trait in personal adjustment and the degree of insight

possessed by the person. Empirical research yielded two vectors (reactive narcissistic and obsessional) from a factor analysis conducted on a obsessiveness measure, and supports the idea that obsessiveness is dichotomous, being either successful or unsuccessful (Sandler *et al.* 1960).

There is strong suggestion that the cluster of obsessive personality traits appear to have considerable empirical validity, fairly closely adhere to clinical descriptions and predictions, and are normally distributed in the population (Pollak 1979; Rachman 1997; Rassin *et al.* 2007; Scarrabelotti *et al.* 1995). Some researchers are firm in their view that the obsessive personality type should not be confused with obsessive-compulsive disorder described in the clinical literature (Jenike 1998), in which the behaviours are symptoms, treatable, and not stable over time (De Silva *et al.* 2004).

The process of entrepreneurship is fraught with uncertainty, is unpredictable in nature, and as such could stimulate feelings of helplessness and vulnerability accompanied by immobilizing anxiety. Since obsessive-compulsive traits and defences can work in the service of reducing anxiety, and enable a sense of mastery and control they thereby help to facilitate constructive action (Pollak 1987). Therefore, it is credible to suggest that an individual with an obsessive personality is suited to entrepreneurship. However, as this research is primarily concerned with the phenomenon of *obsession* as it emerged from the data in Study 1 this literature review, having taken a brief look at obsessive personality and other non-clinical understandings of the word “obsession” in the context of entrepreneurship to distinguish them from *obsession*, will now concentrate on *obsession*.

2.7.3. Obsession - a clinical phenomenon

The French psychiatrist Esquirol is attributed with having been the first clinician to describe an obsession-related disorder in 1838 (Burgoyne 2005), and Sigmund Freud is well known for his descriptions of the obsessions of his patients written in the early 1900s (Pollak 1979). Today the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) defines obsessions as “persistent ideas, thoughts, impulses, or images that are experienced as intrusive and inappropriate and that cause marked anxiety or distress” (DSM-IV 2000). Psychology researchers and clinicians dealing with obsessive disorders are careful to distinguish the meaning of the word “obsession” from its meaning in everyday usage (De Silva *et al.* 2004). In its strict

psychological/psychiatric sense “obsession” is recognised as the formal and nosologically specific core symptoms of obsessive compulsive disorder (Burgoyne 2005).

Nonetheless, within the psychological clinical literature that claims obsession as a disease, understanding the meaning and consequences of “obsession” is subject to continual discussion, revision and rethinking, including attempts to distinguish: the trait of obsessionality from the state of obsessionality (Macdonald *et al.* 1999); normal obsession from abnormal obsessions (Rassin *et al.* 2007); primary obsessions from secondary obsessions (Burgoyne 2005; Schneider 1950); and classical obsessions (repugnant and unacceptable thoughts) from other clinical obsessions (recurrent, preoccupying thoughts) (Rachman 2003).

Research data usually focuses on obsession that generates psychological/psychiatric distress. It also reveals that obsession is prevalent in society (Rassin *et al.* 2007), and can be the source of both subjective acceptance and beneficial outcomes (Rachman 2003; Rassin *et al.* 2007). The research into intrusive thoughts (IT) demonstrates that ITs are both an ordinary experience for the most people and characteristic of several clinical disorders such as generalised anxiety disorder, depression, post-traumatic stress disorder and OCD (Berry *et al.* 2010). ITs are recognised as being an important aspect of both addiction and motivated behaviour (Kavanagh *et al.* 2005).

We speculate that obsession might be under-described and under-addressed in scholarship and literature, in that its observed productive aspects may be worthy of further examination. As Maslow argued in relation to motivation theory, a thorough understanding of any theory requires investigating not only “sick people alone” but also “the highest capacities of the healthy and strong man” (Maslow 1970, p. 33). In researching and describing only the debilitating aspects of the extreme experience of disordered obsession, might we be overlooking and therefore not understanding the useful aspects of the phenomenon when experienced by Maslow’s “healthy and strong man”?

2.7.3.1. Obsessive compulsive disorder

Examining OCD can shed light on the nature of obsession since it is the psychological/psychiatric field that has researched and examined obsession in detail. However, the description of obsession as a disorder or illness is not limited to psychology or psychiatry as evidenced by Bowel Obsession Syndrome in

gastroenterological literature (Porcelli *et al.* 2007). OCD is characterised by obsessions and/or compulsions that are found to be intrusive, excessive, and unmanageable and that lead can to impaired functioning (Bartz *et al.* 2007).

OCD is thought to be ego-dystonic, that is a symptom and unwanted (Macdonald *et al.* 1999). Clinical presentations and research show typical content areas for obsessions include thoughts of contamination, thoughts of harming oneself or others, impulses to harm one or others, impulses to perform embarrassing behaviours, images of sexual activity, and a need for order (Burns *et al.* 1996). In OCD the obsessions increase the distress experienced by the individual, and the compulsions serve to the neutralize anxiety generated (Calamari *et al.* 2006; Jenike *et al.* 1998).

There seems to be general agreement in the definition of OCD (Rachman *et al.* 1980), that OCD symptoms are heterogeneous (Calamari *et al.*, 2006; Mataix-Cols *et al.* 2004) but also well-recognised (Mathew 2004; Rassin *et al.* 2007; Wu *et al.* 2007); can occur concomitantly with another disorder (Jenike *et al.* 1998); and can comprise either obsessions or compulsions or both (Rachman *et al.* 1980). OCD is characterised by the high degree of significance attached to the obsession by the individual (Jenike *et al.* 1998); thoughts interpreted as being of minimal significance will not feature as obsessions (Rachman 1997). It has been suggested that catastrophic misinterpretation of intrusive thoughts maybe the trigger that causes the thoughts to become obsessional (Salkovskis *et al.* 1998).

The cognitive model of obsession used to inform research into smoking cessation found a similar result. Individuals who appraised their nicotine cravings as more catastrophic and personally significant experienced more severe craving-related thoughts and were more likely to resume smoking within a month of cessation than those who did not (Nosen *et al.* 2009).

OCD is thought to be more common than clinical presentations suggest, possibly because of the propensity for sufferers to not seek treatment (De Silva *et al.* 2004; Rasmussen *et al.* 1998). In one study the prevalence of OCD amongst psychiatric outpatients was 17% (Rasmussen *et al.* 1998), and lifetime prevalence in the general population has been estimated as between 2% and 3% (Jenike *et al.* 1998). It has been suggested that OCD is the fourth most common psychiatric disorder (Rasmussen *et al.* 1998).

There is empirical evidence that obsessionality and obsessive-compulsive disorder might exist along a continuum (Mathew 2004). Furthermore, that normal and clinical

subjects may differ only in quantity, frequency, duration, intensity, consequences of their experience of obsessions and compulsions (De Silva *et al.* 2004; Rachman, 1978), or the adaptiveness of the obsessions and compulsions (Macdonald *et al.* 1999), or the degree of distress or impairment experienced (Jenike *et al.* 1998). Obsessions in non-clinical populations can differ in content from those in clinical populations (Rassin *et al.* 2007). Moreover obsessions similar in content to those of clinical populations do not cause distress in non-clinical populations (Rachman 1978). The frequency, duration and discomfort caused by OCD appears to diminish with habituation (Rachman 1978), giving implied support to the notion that people can learn to live with their obsessions.

The basic features of OCD have been found to be common across diverse cultures (Rasmussen *et al.* 1998) and time periods (De Silva *et al.* 2004). Epidemiological analysis is complicated (Davis 2008) because a reliable optimal threshold or diagnostic criterion for use in distinguishing clinical from subthreshold OCD has not been identified (Rasmussen *et al.* 1998). Uninvited thoughts are commonly found in the population (Rachman 2007), but when these thoughts become a disorder the resulting behaviour can significantly incapacitate or undermine the quality of life (Moritz 2008).

Thus obsessions are recognised as being either normal or abnormal (Rachman 1997; Rassin *et al.* 2007). Clinical obsessions are suggested to evolve from "...normal obsessional thoughts ... experienced by the vast majority of individuals..." (Purdon *et al.* 1999, p. 102). An obsession, in and of itself, may not necessarily be a bad thing, hence in the literature we read of *subclinical level* obsessive-compulsive symptoms (Corcoran *et al.* 2008). It is suggested that it is the level of distress people experience that prompts them to engage in help-seeking behaviour (Lenzenweger *et al.* 2007), and it is the discomfort or distress associated with the thought that leads the obsession to be categorised as a *disorder* (DSM-IV 2000).

2.7.4. Symptoms of an obsession

The lack of a systematic statement of the necessary and sufficient conditions for deciding when and whether a reported experience is an obsession was a difficulty that Rachman *et al.* addressed in their seminal work on OCD. They caution that the obsession must be insinuating, cannot be enjoyable, and must be difficult to banish from the mind otherwise the thought falls short of an obsession. They explain that the *"...necessary and sufficient conditions for defining an idea, impulse, or image as*

obsessional are intrusiveness, internal attribution, unwantedness and difficulty of control..." (Rachman *et al.* 1980, p. 21).

It is accepted that in common usage "obsession" means to have "an unusually great interest in something or someone, so that everything else pales into insignificance" (De Silva *et al.* 2004). However, De Silva *et al.* are careful to distinguish obsession in this context from "obsession" in obsessive-compulsive *disorders*, saying these obsessions are not unwanted or unacceptable, there is no attempt to dismiss or resist them, and they do not keep intruding periodically into the mind of the person.

The Diagnostic and Statistical Manual of Mental Disorders (DSM) (2000) requires the addition of marked anxiety or distress as part of the definition of obsession. However, sub-clinical or normal obsessions are widely acknowledged to exist (Corcoran *et al.* 2008; Mathew 2004; Purdon *et al.* 1993; Serpell *et al.* 2006; Van Oppen *et al.* 1995). They are so termed because they do not cause distress, and therefore anxiety or distress are not necessarily requirements for distinguishing the presence of an obsession, but do serve to highlight the existence of a *disordered* obsession.

2.7.5. Intrusive thoughts

The presence of an intrusive thought (IT) or impulse or image forms the basis of obsession. For the purposes of this research, an obsession is an intrusive thought that is unwanted, difficult to control and internally attributed (Rachman *et al.* 1980, p. 21). Rachman *et al.* distinguish the intrusive thoughts of an obsession from broader definitions of "intrusive thoughts" by requiring obsessional intrusive thoughts be characterised by personal significance and a quality of repugnance (Rachman *et al.* 1980, p. 261).

In the clinical literature some authors use the term obsession to denote a cognitive intrusion that has developed into a pathology such as OCD, and otherwise speak of nonclinical obsessions as cognitive intrusions or intrusive thoughts (ITs) (Julien *et al.* 2009). As this research is concerned with potentially intrusive thoughts of entrepreneurs, recent literature on IT in nonclinical populations has been reviewed.

For use in exploring the differences in reactions to IT in both clinical and nonclinical populations Berry (2010) developed a 7-item self-report measure of the emotional and behavioural reactions to intrusive thoughts (IT) as these thoughts related to craved substances. Developed on a UK population of 1,147 university students and staff,

confirmatory factor analysis of the scale was conducted on a second separate sample of 224 staff and students, and its reliability was confirmed by retesting 132 of the original 1,147 participants. The results indicated that individuals with greater frequency of intense craving episodes experienced greater emotional reactions to their ITs, and that being mindful of them (accepting, being non judgemental of or not evaluating ITs, acting in awareness of one's behaviour) could be particularly useful in reducing negative reactions to ITs.

Morsella *et al.* (2010) suggest that experiences of intrusive thoughts reflect the prospective nature of the brain and are not indeterminate in nature. They proposed that the presence of future tasks that could benefit from forethought are a major determinant of ITs. Furthermore, these cognitions act to counter one's current goals, that is they interfere with current activities. A meditation-like exercise involving 103 university students required the clearing of the mind to concentrate on breathing prior to undertaking a specified future task. Participants reported experiencing more intrusive cognitions when faced with a task that could benefit from forethought than they did when faced with a task that would not benefit from forethought or when they did not have a future task. The authors conclude their findings support the literature demonstrating that goal-related effects are mediated unconsciously, that well-established goals once activated can influence behaviour unconsciously and determine that which enters the consciousness.

Negative appraisal of intrusive cognitions was found to have a significant role in the psychological distress experienced in a study of 139 anxious cancer patients. This finding supported other research conducted with samples of ambulance workers, victims of sexual assault, and motor accident survivors demonstrating a link between negative appraisal of intrusive cognitions and anxiety, depression and intrusion-specific distress (Whitaker *et al.* 2009).

Clark *et al.* (2009) undertook a phenomenological study of nonclinical individuals to examine how they control unwanted distressing cognitions, reasoning that normative data is essential to understanding pathological processes. After interviewing 102 undergraduate students and contrasting the data with known research from clinical populations they concluded that clinical and nonclinical populations have similar types of unwanted thoughts, respond similarly to these thoughts, and have similar results when using thought suppression as a management technique.

Najmi *et al.* (2009) examined the relative effectiveness of focused distraction and acceptance on the frequency of intrusions and associated distress in a study of 20 OCD patients and 20 healthy control subjects. They find that both categories of participants had reduced levels of distress both during and after tasks when using focussed distraction and acceptance techniques to manage their unwanted ITs, but not reduced frequency of intrusions.

Using the scenario of an escaped snake, Fritzler *et al.* (2008) examined the triggers (salience, responsibility, neutralising) hypothesised to turn an IT into an obsession in a sample of 100 undergraduate psychology students. They found that, in line with Salkovskis's (1985) hypothesis, those participants for whom the snake was salient and who felt a sense of responsibility for the escape of the snake experienced the highest frequency of snake thoughts and anxiety about the snake. They conclude their findings support the suggestion that a person's feelings of responsibility for an event that is judged by that person to be personally relevant will lead to increases in intrusive thoughts about that stimulus.

Kavanagh *et al.* (2005) argue for an elaborated intrusion (EI) theory that is applied to addiction and motivated behaviour. They suggest that where intrusive thoughts trigger significant affective reactions or a keen sense of deficit (such as desire), cognitive elaboration usually ensues. The affective impact of the desire can result in highly motivated behaviour aimed at achieving the desired target, and the elaborated cognitions ensure that the IT and other associated cognitions about the desired target remain in working memory until resolution, making it difficult to concentrate on other subjects. They distinguish between IT and EI, suggesting that IT leads to very simple absentminded behaviour whereas EI maintains the temporal behaviour goal and facilitates planned responses to assist in target acquisition. The affective tone of the EI tends to be negative and is both a precursor to and consequence of the EI.

2.7.6. Content of obsessions

The literature describes the typical content areas of an obsession, but an obsession is not defined by particular content. Nonetheless, it is interesting to reflect on the content of obsessions, as it is pertinent to this research.

The content of obsessions has changed over the centuries with religious themes reported as being the dominant content for obsessions before the 20th century (Davis

2008; Rachman *et al.* 1980). In the 20th century the dominant obsessional content themes are of dirt and contamination, aggression, inanimate-impersonal/orderliness, religion and sex (Akhtar *et al.* 1975; Rachman *et al.* 1980).

To examine the obsessional content of normal populations, eight clinical patients experiencing obsessions were asked to describe the content of their obsessions, and it was this content that was sought in non-clinical populations (Rachman 1978). Results showed that 80% of non-clinical participants experience intrusive thoughts similar in content to those experienced by clinical patients, and these results were supported in subsequent studies (Morillo *et al.* 2007; Purdon *et al.* 1993; Rachman 1978; Salkovskis *et al.* 1984).

These are the areas that: tend to comprise the content area specified in measures of OCD such as the Padua Inventory, The Maudsley Obsessive-Compulsive Inventory and Leyton Obsessional Inventory (Van Oppen *et al.* 1995); are articulated in the DSM-IV as typical content area for an obsession (DSM-IV 2000); and therefore are tested when examining the existence of obsessions in normal population samples (Mathew 2004; Rassin *et al.* 2007; Van Oppen *et al.* 1995). Yet, it is also acknowledged that obsessions can be trivial and senseless (De Silva *et al.* 2004), and idiosyncratic in content (Purdon *et al.* 1994).

It has been suggested that the initial small sample used by Rachman in 1978 to identify typical obsessional content may have lead to the over-valuing of only these areas as obsessional content areas by subsequent researchers of normal samples, and this implication is compounded by arguments regarding construct validity of the measures used to identify OCD (Morillo *et al.* 2007). Akhtar *et al.* (1975) caution that a cultural basis affects the frequencies of content theme in their predominantly Indian Hindu sample. Finally, it has been argued that it is the interpretation of obsessions, and not their content, that is fundamental to obsessional problems (Salkovskis *et al.* 1998).

Given the diversity of content for both clinical and non-clinical populations, this research suggests that venture specific content could be the subject of obsessional content.

2.7.7. Living with obsession

Research has shown that it is possible for an obsession to not cause distress (Rachman 1978), and it may be possible for the content area of an obsession to

comprise something other than these typically described thoughts about contamination, doubts, need for particular order, aggressive or horrific impulses and sexual imagery (De Silva *et al.* 2004). We see that habituation can lessen the distress of a disordered obsession (Rachman 1978). This gives rise to the suggestion that if clinical obsessions can start out as unwanted and become normalised over time, so too might the experience of sub-clinical obsessions become habituated and normalised over time.

2.7.8. Other features of obsession

Descriptions of pathological obsessions demonstrate that the obsession acts as a subjectively experienced stimuli (Rachman 1978) that invokes an affective reaction (Burgoyne 2005); and the person closely identifies with the obsessional content (Jenike *et al.* 1998).

2.7.8.1. Evoking affective reaction

Emotions are a unique source of motivation that activate and guide behaviour (Deckers 2005). Emotions have a definite cause, clear cognitive content and are experienced as subjective negative or positive affect (Forgas *et al.* 2001), and that affect influences many aspects of cognition and behaviour (Baron 2008). Obsessions are recognised as contributing to or causing affect (such as dysphoria) and emotional responses (Rachman *et al.* 1980, pp. 269, 273).

In clinical obsessions, the obsession is a stimulus that compels the individual to act and is the cause of experiences of negative affect (DSM-IV 2000; Rachman *et al.* 1980). The level of emotional disturbance caused by an obsession is thought to be linked to amount of control over the obsession (Rachman *et al.* 1980, p. 269), and the emotional impact of obsessions is suggested as a worthy area of future research (Corcoran *et al.* 2008).

In motivation and goal theory, cognitions generate strong emotions that alert the individual to act but are not necessarily negative (Locke 2000a; Locke *et al.* 2002; Maslow 1970). Thus, having strong emotions capable of motivating purposeful behaviour (consciously or unconsciously) is recognised beyond the clinical literature on OCD. Indeed, strong emotions that motivate behaviour are part of the description of entrepreneurial passion (Cardon *et al.* 2009). The affect individuals experience is understood to influence many aspects of cognition and behaviour (Baron 2008), and a

link has been found between entrepreneurs' dispositional positive affect and their firms' performance (Baron *et al.* 2010).

Therefore, this research suggests that obsessive intrusive thoughts may evoke both positive and negative motivating affective reactions, such as anxiety or perhaps even passion.

2.7.8.2. Great personal significance

The attachment of great personal significance to the thought is considered to be an important component of the obsession (Jenike *et al.* 1998). It is suggested that dysfunctional appraisal of the significance of the thought is the critical link in transforming normal intrusive, unwanted thoughts into a clinical obsession (Corcoran *et al.* 2008).

In the goal seeking literature, the extent to which individuals value something regulates the direction, intensity and persistence of their actions (Locke 2000a). In the entrepreneurship literature, the importance of the domains of entrepreneurship (inventing, founding, developing) to the identity of the entrepreneur is well accepted and the subject of newly emerging research (Cardon *et al.* 2010).

Therefore, this research suggests that entrepreneurs attach great personal significance to their ventures and this great personal significance is reflected in the development of obsessive intrusive thoughts about their ventures.

2.7.9. Obsession – final comments

This section examined thoughts that are described as obsessions, and developed an understanding of what an obsession is, how it is recognised, and the impact it has on the person experiencing the obsession.

For an obsession to become disordered requires the generation of strong feelings of *distress or discomfort* leading to functional impairment (DSM-IV 2000). But an for an obsession to be present requires only that a thought or thoughts be intrusive, unwanted, difficult to control and internally attributed (Rachman *et al.* 1980, p. 251).

Further confirmation that the intrusive thoughts are an obsession is obtained when these thoughts:

- Stimulate a subjective affectively imbued resistance (Rachman *et al.* 1980, p. 251), and
- Are imbued with great personal significance (Salkovskis 1985).

Abnormal, classical or clinical obsessions may exist at one end of the obsession continuum (Rassin *et al.* 2007). They cause distress, can lead to compulsive behaviour, and diminish the quality of the individual's life (DSM-IV 2000). However, normal obsessions do not have this maladaptive impact on the lives of the individuals experiencing them (Rachman 2003). For this reason, it is suggested that a large proportion of obsessions go unreported and untreated (De Silva *et al.* 2004; Rasmussen *et al.* 1998).

Thus, this research suggests that normal obsessions, too, may affect the individual's life because of the importance attached to, and strength of the feelings associated with, the obsession. We see that being mindful of, or accepting of, the IT facilitates a reduction in negative reactions associated with experiencing it (Berry *et al.* 2010; Najmi *et al.* 2009). Thus obsessions are not necessarily pathological in nature, and do not necessarily lead to the individual seeking assistance to deal with the maladaptive outcomes of the obsession.

Additionally, the capacity of the obsession to stimulate a response, that is to motivate action, leaves open the possibility of a productive outcome from the obsession despite potential for the experience of negative affect or feelings of distress. We see that elaborated intrusions can maintain goal related behaviour over time and facilitate planned responses designed to assist in acquiring the desired target (Kavanagh *et al.* 2005). Moreover, the strength of the sense of responsibility and personal significance associated with the thought increases the frequency of intrusiveness (Fritzler *et al.* 2008) and therefore the IT may become an obsession (Salkovskis 1985). If so, this motivating obsession may ultimately be the cause of productive outcomes.

Thus, the presence of an obsession associated with an entrepreneur's venture may be part of the explanation as to why some, and not others, will continue practising entrepreneurship. When we read in the popular and academic press how thoughts of the venture affect the entrepreneur, we see what may be indications of the presence of ITs, perhaps even obsessional thinking. We know that ITs can comprise any content, and therefore venture-specific content could form the basis of ITs. We hear entrepreneurs speak of highly motivating affect which is cognitive in content, and we

know that entrepreneurs do attach great personal significance to their ventures to the extent that it is suggested the venture is important to their self-identity (Cardon *et al.* 2010). This in turn could tip ITs about the venture into an obsession, potentially leaving the entrepreneur vulnerable to the dark side of obsession, that is, feelings of distress and anxiety which may be sub-clinical or undiagnosed.

Therefore, this research proposes that entrepreneurs may experience intrusive thoughts that are venture related obsessions. Furthermore, the presence of obsession for a venture may contribute to the entrepreneur's ability to sustain entrepreneurial action, because these intrusive thoughts are imbued with great personal significance, generate anxiety and motivate action in response to the obsession. These continual actions in response to the intrusive thoughts might contribute towards an explanation as to why entrepreneurs characteristically continue to work in and on their ventures in the face of stress and challenges of entrepreneurship. If so, obsession may have a productive aspect, in that the sustained entrepreneurial actions arising from obsession leads potentially to entrepreneurial success (Fisher *et al.* 2010).

2.8. Chapter summary

This chapter reviewed the literature that informs the key constructs underpinning the final model tested in Study 2: entrepreneurship, entrepreneurs, entrepreneurial action, entrepreneurial success, passion, resilience and entrepreneurial obsession. Although a literature review was undertaken to develop the conceptual framework for the qualitative exploratory Study 1, the literature review was significantly expanded because of the results of that study. The literature review that informed Study 1 does not stand alone in this chapter, but is consumed into the wider literature review undertaken in preparation for Study 2. The next chapter reports on the first study of this research, a qualitative study that explored the nature of passion and how successful entrepreneurs experience it. Study 1 was guided by research questions and a conceptual framework explored through qualitative analysis techniques, and resulted in a revised conceptual model and hypotheses for testing in Study 2.

3. Study One

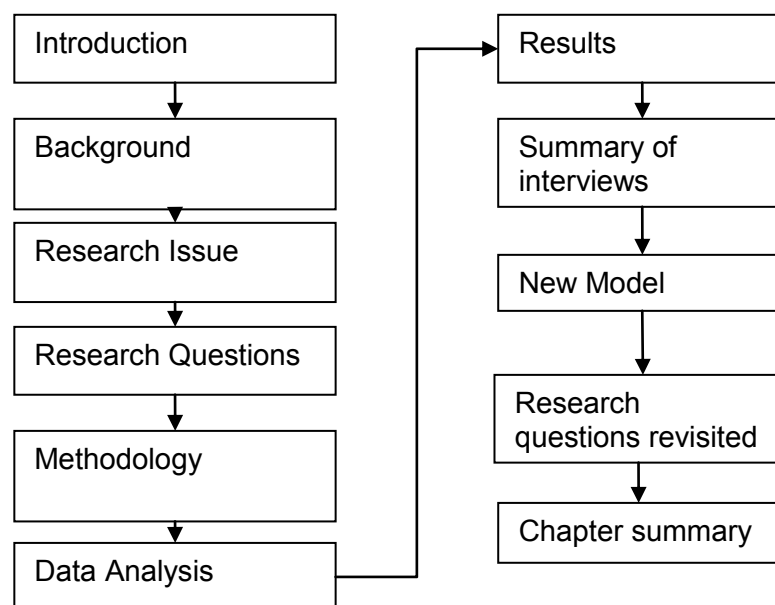
3.1. Chapter introduction

This chapter presents the first study in this mixed methods research. In this study, a research issue was explored using qualitative methodology. The data emerging from the interviews was analysed, and conclusions were used to inform hypotheses tested in Study 2.

The background to the research problem is explained, and the research aims and questions articulated. The methodology chosen to explore the problem is justified, and leads into a presentation of the conceptual framework used to guide the qualitative research. The detail of the research design is provided, and its execution documented. The analysis of the data is provided and the results presented.

Emerging from the data is a new understanding of the importance of certain constructs and their relationships in explaining entrepreneurial success. These constructs are then described and their relationships and contribution to entrepreneurial success hypothesised. A theoretical model is developed for testing in subsequent quantitative research (Study 2). Figure 3-1 outlines the chapter.

Figure 3-1 Chapter 3 overview



Adapted from Perry (1998)

3.2. Background

Researchers could assume that having entrepreneurial passion would be good for a business venture, and entrepreneurs report that it is their passion that drives them in their ventures. An examination of autobiographies, scholarly articles, interviews with entrepreneurs, and popular press reports reveals passion to be a frequently cited and intrinsic element of entrepreneurial action (Baron 2002; Baum *et al.* 2004; Bird 1989; Graham 2006; Locke 2000b; McClune 2000; O'Toole *et al.* 2005; Shane *et al.* 2003; Torres 2003; Zeitsma 2005).

However, in fields in which it has been studied, passion has been observed to be dualistic in nature – either obsessive or harmonious (Vallerand 2008); and obsessive passion can lead to less adaptive and maladaptive outcomes (Mageau *et al.* 2007; Philippe *et al.* 2007; Vallerand 2008). That passion contributes to entrepreneurial success is not disputed, but obsessive passion is described as having features that suggest it may be an unhelpful if not debilitating form of passion (Philippe *et al.* 2007; Ratelle *et al.* 2004; Vallerand 1987; Vallerand *et al.* 2003; Vallerand *et al.* 2007).

3.2.1. A model of opportunity recognition

McMullen *et al.* (2006) have developed a model of entrepreneurial action that accommodates the wisdom, opinions and judgments of a range of theorists from two distinct streams of research. It has been used in one empirical test examining the relationship between entrepreneurial action and perceptions of uncertainties (Meijer, *et al.* 2007).

The McMullen *et al.* framework describes the role of uncertainty in the recognition and evaluation of entrepreneurial opportunities, i.e. the prerequisites to taking entrepreneurial action. Their framework suggests how the entrepreneur comes to form the intention to take entrepreneurial action by specifying the antecedents to action. The specify the elements of decision-making (ie knowledge/feasibility and motivation/desirability), and invite further examination of the components of knowledge and motivation, seeking to explain how these components form/interact to contribute to the decision to engage in entrepreneurial action. McMullen *et al.* suggest that motivation is particularly important to entrepreneurial decision-making, and explicitly invite researchers to explore motivation, bringing it back into the discussion of the entrepreneur (McMullen *et al.* 2006).

3.2.2. Passion in entrepreneurship

Passion has been recognised as part of the experience of entrepreneurship. Entrepreneurial passion is experienced as motivating, energising, enabling, positive emotions that are both derived from and stimulated by engagement in the venture (Cardon *et al.* 2009).

In a different field of research, that of sports psychology, Vallerand *et al.* (2007) suggest that sustained involvement in an activity over time is linked to high performance attainment and conclude that passion for the activity is implicated in the performance-attainment process. Specifically, Vallerand *et al.* (2007) posit that passion is the motivation responsible for individuals engaging in sustained practice leading to high performance attainment.

Vallerand's model has been used in a number of empirical tests (see Chapter 2 for further detail) but has had few tests in the domain of entrepreneurship. Entrepreneurship scholars have noted the work of Vallerand *et al.* (2003) on the dualistic nature of passion (Brannback *et al.* 2006; Cardon 2008; Murnieks 2007). At the Academy of Management Conference on 8 August 2010, Vallerand and Cardon discussed the potential value of examining Vallerand's passion construct in the context of entrepreneurship.

3.2.3. Passion, uncertainty, entrepreneurial action

It has been suggested that passion is the tipping point for deciding whether an opportunity is acted upon (Brannback *et al.* 2006), and thus whether or not entrepreneurial action takes place. Furthermore, passion is suggested to be a driver in the face of uncertainty (Baum *et al.* 2004). By examining the literature, one can find support for evidence of emotion and passion in the antecedents of the constructs in the McMullen *et al.* (2006) model (knowledge/feasibility and motivation/desirability). Much of the literature is theoretical in nature, yet there is a limited amount of empirical research that identifies a place of emotion or passion within the constructs of this model (Brannback *et al.* 2006; Fitzsimmons *et al.* 2007; Goss 2008).

Thus, it is passion that is the focus of this research – passion in entrepreneurs and how passion contributes to uncertainty, entrepreneurial action and ultimately entrepreneurial success.

3.3. Research issue

It is suggested that it is the entrepreneurs' passion for their venture that reduces the degree to which they perceive uncertainty, thereby increasing the probability of opportunity exploitation leading to entrepreneurial action. Therefore, we suggest that passion, uncertainty and entrepreneurial action are antecedents to entrepreneurial success and seek to understand how passion contributes to entrepreneurial success despite uncertainty.

3.4. Research questions

The research questions examined in Study 1 are:

- What is the nature of the entrepreneur's passion?
- How does passion affect motivation, uncertainty, entrepreneurial action, and ultimately entrepreneurial success?

3.5. Methodology

This study used key aspects of case study methodology (Huberman *et al.* 2002a; Saunders *et al.* 2007; Yin 2003) to explore the constructs. To demonstrate credibility of results and minimise researcher bias the data has been treated methodically, transparently, and the evidence of informants has been adhered to (Yin, 2011). Propositions were not provided as the relationships between the constructs was not known and the aim of this study was to explore the constructs and explain these relationships and, in so doing, develop testable hypotheses (Eisenhardt 1989).

3.5.1. Justification

The purpose of this study was to develop a model that might explain the relationship between passion, uncertainty and entrepreneurial action for testing in a subsequent study.

Although we see discussion in the literature about entrepreneurs' and their passion, how that passion contributes to entrepreneurial success is still a matter for conjecture. At the time of constructing this research, there was little empirical research into entrepreneurs' and their passion, and the link between passion and entrepreneurial

action or passion and entrepreneurial success. Additionally, despite the negative implications of obsessive passion, entrepreneurs are noticeably passionate, and continue to take successful entrepreneurial action.

This research takes as its starting point the suggestion that passion can overcome uncertainty, that overcoming uncertainty is critical to entrepreneurial action, and extends that by suggesting engagement in entrepreneurial action is a precursor to entrepreneurial success. It recognises that passion has been found to be dualistic in nature and, given this feature of passion, explores how passion can affect the entrepreneurs' capacity to take entrepreneurial action. It is suggested that the capacity for self-reflection and insight may moderate the downside of obsessive passion and explain how entrepreneurs continue despite the presence of obsessive passion.

Case study using in-depth interviewing is an ideal research method for this study because the relationships between the constructs is not well known. Individually these phenomena are complex; and the potential exists for other constructs to emerge as key to the explanatory process (Huberman *et al.* 2002a; Yin 2003). In-depth interviewing using open-ended questions provides the opportunity to capture the "thoughts, feelings, beliefs, values and assumptive worlds" of the lived experiences of the individual entrepreneurs (Marshall *et al.* 2006).

This research seeks to understand certain constructs, and their relationships, because these constructs have been identified as important in entrepreneurial action and entrepreneurial action is of benefit to society. In understanding their relationships we may gain insight into what helps or hinders entrepreneurial action and entrepreneurial success, and this in turn can inform entrepreneurship's stakeholders.

3.5.2. Conceptual framework

Theory, discussions with colleagues, anecdotes and information in the public arena about the life and business experiences of entrepreneurs were examined and used to develop the conceptual framework for this study (see Figure 3-2). Taken together they form the initial conceptual framework explored in this study that:

- a. Deprivation and Disadvantage: Childhood experiences of deprivation and disadvantage provide strong motivation towards achieving success in difficult endeavours (Kets de Vries 1996), and there is a relationship between entrepreneurship and particular personality traits (Shane 2008; Zhao *et al.* 2006).

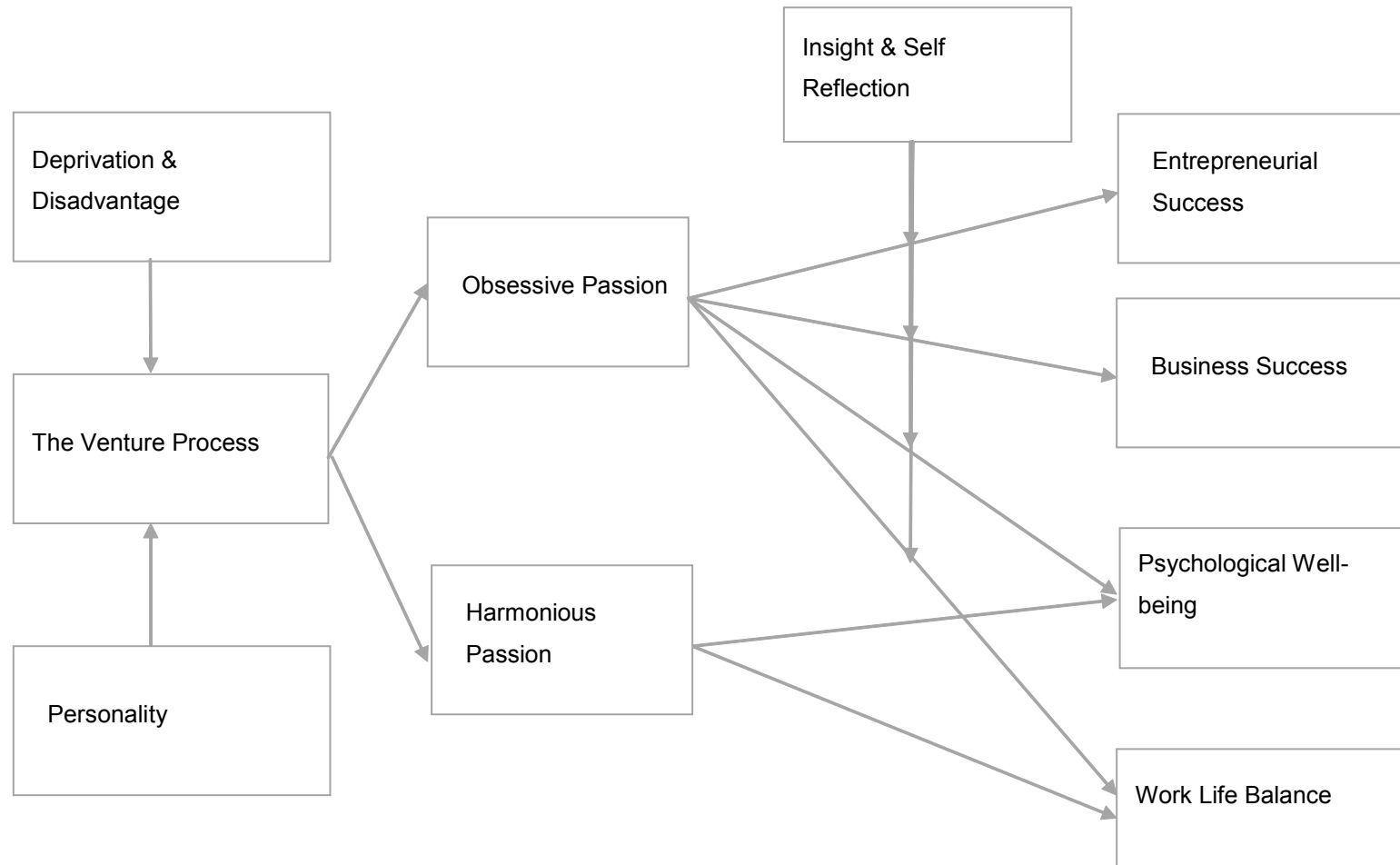
Therefore, childhood experiences of deprivation and disadvantage, combined with particular personality traits, are suggested to contribute a person's willingness to keep at entrepreneurial action.

- b. Passion: Passion is experienced as motivating, enabling and energising emotions that are both derived from and stimulated by engagement in the venture (Cardon *et al.* 2009). Passion is either harmonious or obsessive in nature (Vallerand *et al.* 2003), and a harmonious passion for an activity leads to disengagement from the passionate activity in the face of less adaptive and maladaptive outcomes (Vallerand *et al.* 2003). Therefore:
- Entrepreneurs with an harmonious passion are likely to experience work-life balance and good psychological outcomes (Rousseau *et al.* 2008; Stenseng 2008).
 - Entrepreneurs with an obsessive passion are likely to achieve entrepreneurial and business success because they are unlikely to disengage from the venture process in the face of less adaptive or maladaptive outcomes (Vallerand *et al.* 2003).
- c. Self-reflection and insight enable obsessively passionate entrepreneurs to notice and manage their obsessive passion (Grant *et al.* 2002). Thus, it is suggested a capacity for self-reflection explains how entrepreneurs are able to manage the tensions created by obsessive passion. In so doing, they are able to work to good effect with successful business and personal outcomes.

3.5.3. Design

A deductive approach, utilising basic hermeneutic examination of case data, was used to explore the relationships between the exogenous constructs (deprivation and disadvantage, personality, obsessive passion, harmonious passion, insight and self-reflection) and the endogenous constructs (psychological well-being, work-life balance, business success and entrepreneurial success). An example of a critical decision made by the entrepreneur was used as a means of exploring the entrepreneur's passion and experiences of uncertainty.

Figure 3-2 Initial Conceptual Framework



Consequently, a model proposing an explanation of the relationship between these constructs was developed and tested in Study 2.

An application for ethics approval was submitted to Swinburne University's Ethics Committee; minor clarifications were included at the suggestion of the Committee; and the final approval was received after inclusion of these modifications (see Appendix 1).

3.5.4. Interview protocol

A series of open-ended questions was used to explore the constructs in an interview with entrepreneurs (see Appendix 2). A review of the entrepreneurship literature including scholarly articles, press articles, biographies and autobiographies about entrepreneurs, ('Man in the Mirrors' 2006; Alstete 2008; Ansett *et al.* 1986; Ashton *et al.* 1999; Baum *et al.* 2004; Bird 1989; Kets de Vries 1996; King 2008; Kisfalvi 2002; Preston 2007; Schindehutte *et al.* 2006; Smith 2004; Wudunn 1990) and discussions with academic colleagues informed the questions.

Key areas explored through the questions were:

- what the entrepreneur was like as a person;
- how passion came into their life and business;
- the critical decision, uncertainty and how the entrepreneur's decision was viewed by the entrepreneur and by others;
- the role of passion and emotion in that critical decision;
- passion in the work and personal life of the entrepreneur;
- the early childhood of the entrepreneur; how the entrepreneur was as a child in comparison to other children, parental behaviour and beliefs;
- money making activities undertaken by the entrepreneur as a child; and
- work-life balance, entrepreneurial and business success.

Open-ended questions were considered optimal because of the exploratory nature of the study (Saunders *et al.* 2007). Although particular constructs were perceived to be important to entrepreneurial success, there was a high degree of uncertainty about how the constructs related to one another. Open-ended interviews offered the opportunity to collect rich data on what might be happening from the perspective of each entrepreneur (Eisenhardt 1989; Marshall *et al.* 2006).

Data were collected through an hour-long interview with each entrepreneur. A 30-minute interview with a key referent (either spouse or business partner) was used to triangulate the information for five participating entrepreneurs. The questions used for the discussion with referents were a direct subset of the questions put to the entrepreneur; with the focus changed suitably such to elicit responses about the entrepreneur (see Appendix 3).

All entrepreneurs and referents were provided with a copy of the interview questions prior to the interview. In all cases this was at least 3 days prior to the interview, in most cases longer. All entrepreneurs and referents were asked the same questions, with some variation where circumstances required it. For example: if a question had been answered as a consequence of addressing an earlier question it was left out; if the response lead to a deviation in the discussion as part of maintaining the relaxed atmosphere, it was taken. Where participants did not like the use of a particular word, analogous words were chosen, the question was rephrased to take into account the objection, or a discussion was held around how the word came to be chosen. For example, in a number of cases the conceptualisation of obsessive passion was described by the researcher as part of explaining why the question was being asked, or as a lead into asking the question.

During the interview period, data emerging from early interviews guided the researcher into sensitivities around meaning and differing understanding of words such as “entrepreneur”, “obsession” and “passion”. Consequently, later interviews showed evidence of discursive preambles leading into these question areas, and the last two interviews probed the theme of “intrusive thoughts” an interesting theme that emerged from the ninth interview.

3.5.5. Sampling

Purposive sampling was used to identify entrepreneurs invited to participate in Study 1 because the results from purposively selected cases are likely to be relevant in explaining more typical cases (Patton 2002). Additionally it is a valuable sampling technique to identify potential cases whose status as entrepreneurs would be unequivocal in the eyes of the discipline of entrepreneurship (Neuman 2000). The sample was heterogeneous and comprised 10 founding entrepreneurs and 5 referents. Table 3-1 characterises the entrepreneurs, their entrepreneurship type, and other information. In the interviews, three of the entrepreneurs discussed ventures they

Table 3-1 Characteristics of interviewees

	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
Gender	Female	Male	Male	Male	Female	Female	Female	Male	Male	Female
Entrepreneurship origin	New product from idea	Core skills	Established manufacturing operation & market where none existed	Filled identified gap in market	Filled identified gap in market	Core skills	Core skills & technical innovation	Core skills	Filled identified gap in market	Core skills
Ownership % at time of critical decision	100%	Majority	Shared Majority	Majority	Majority	Majority	100%	Majority	Majority	50%
Length of ownership of venture discussed	12 yrs, current	12 yrs, sold	25 yrs, sold portion, 16% shareholding	5 yrs, current	10 yrs, failed	15 yrs, current	25 yrs, current now reduced shareholding	15 yrs, current	12 yrs, sold	8 yrs, current
Type of Entrepreneurship	Natural Health Product	IT Services	Defence Technology	Food & Beverage	Health & Beauty Product	Furniture Manufacturing and Retail	Agricultural Products	Food & Beverage	Leisure & Tourism	Professional Services
Estimated Revenue PA	>\$10M	>\$355m	>\$25m	>\$15M	<\$10M	>\$25m	>\$25m	>\$10m	>\$69m	>\$8m
Estimate Total Employees	8	2500	180	200			200	220	400	62
Publicly Listed	In progress	Yes	Planned	No	No	No	No	No	Yes	No
Product Reach	Major Retailers in Aust, UK, USA	Aust	Aust, latterly global	Chain of stores in Melbourne	Retail outlets Aust, USA, NZ	Chain of stores in Victoria, Sydney, Brisbane	Global	Chain of stores in Victoria	Aust	Aust
Geographic Base of Entrepreneur	Perth	Sydney	Canberra	Melbourne	Melbourne	Ballarat	Regional QLD	Regional VIC	Gold Coast	Melbourne
Referent	Business & Life Partner (R1)		Life & Informal Business Partner (R3)				Business Mentor (R7)	Life & Business Partner (R8)	Childhood Friend & Work Colleague (R9)	

founded and with which they were no longer actively associated, or which no longer existed.

3.5.6. Recruitment procedures

The research plan sought five entrepreneurs who were high profile and recognised as such by the wider community, and five entrepreneurs who were described colloquially as “business park entrepreneurs”. “Business park entrepreneurs” is a catchall for characteristics such as being geographically local to the researcher, known to the researcher through their advertised business operations, and not displaying obvious levels of extreme business success such as personal wealth, prestige or public profile.

3.5.6.1. Criteria determining an entrepreneur

The criteria used to define an entrepreneur for the purposes of this study were that the person:

- Had founded a for-profit business,
- In which he or she holds (or held) a majority shareholding,
- From an opportunity that he or she identified.

That for profit-business must:

- Generate/have generated sustainable income streams for more than five years,
- Employed more than three full time employees in addition to the entrepreneur, and
- Enabled the entrepreneur to be financially self-sufficient through the profits generated by the activities of that for-profit business.

Indicators were used as proxies for the criteria, given the absence of publically available confirmatory data. Indicators used as proxies for the above criteria are:

- an existing business or business exit through successful sale of business (proxy for criteria 1 and/or 2 and 6);
- more than five consecutive operating years for the business (proxy for criterion 4 and 6);

- evidence of business growth through media reports or physical evidence of geographic spread of business locations or listing on a stock exchange (proxy for criteria 2, 4 and 6);
- business award or government accolade for contribution to business (proxy for all criteria).

3.5.6.2. Identifying prospective entrepreneurs

Two methods were used to identify prospective entrepreneurs for the study. The first was using personal recommendation from colleagues. The second was approaching winners of high profile entrepreneurship awards.

A list of entrepreneurs, either known to the researcher or suggested to her by colleagues, was developed for prospecting purposes. Generally, these were the “business park entrepreneurs” who were currently active in their entrepreneurship. It transpired that some had also been the recipients of government or business awards. In some cases, a colleague of the researcher contacted the entrepreneur to establish willingness to receive an approach from the researcher. Personal knowledge of the entrepreneur facilitated comparison with the indicators above.

Entrepreneurial competitions or business awards, conducted or awarded by high profile Australian businesses and Government agencies, were also used to identify prospective participants. Business competitions invite entries from entrepreneurs, and subject both the entrepreneurs and their businesses to rigorous review by panels of experts. State and Federal Government accolades are awarded to recipients after a screening process, which includes a review by a committee comprising often high profile business and other professionals’ expert in their field. The publicity surrounding the awards allows comparison with the indicators above.

3.5.6.3. Setting up the interviews

The researcher is an experienced business manager whose employment roles have provided interview training and experience for a range of purposes. Additionally, in anticipation of conducting this qualitative study, the researcher undertook a qualitative research methods course.

In framing and conducting the interviews, the researcher considered: how to open the interview; appropriate choice of language; how to phrase the questions in an

unprovocative manner; how to use listening skills including prompting and pausing; how to test and summarise that understanding was clear; and how to record data.

One mock interview was conducted to test the recording equipment and telephone and interview pace including the flow of the questions. It was also used to practise introductions and linkages between questions, and generally to get a feel for how the interview might proceed. Feedback was received from the “subject” who was himself an experienced interviewer. Changes and alterations were made as necessary.

As the interviews were audio recorded it was possible for the researcher to self-critique the interview. These self-critiques made it possible to identify problems or shortcomings that emerged or became apparent within each interview, and to adapt interviewing technique or questions and explanations as necessary.

Entrepreneur Selection Process. Prospective entrepreneurs were canvassed for participation in the research over the period 27 March to 27 April 2009, and interviews were conducted over the period 1 April to 15 June 2009.

Twenty-three entrepreneurs were contacted in total. The attempt was made to gain equal numbers of award winning entrepreneurs and “business park entrepreneurs”, and equal numbers of men and women.

Prior to the interviews, 13 entrepreneurs were thought to be award winners and 10 to be “business park entrepreneurs”. However, in two cases it became apparent the latter were past recipients of business or entrepreneurship awards, thus changing the mix to 15 award winners and 8 business park entrepreneurs respectively.

Of the 23 contacted, 12 agreed to participate in the research, 6 declined, and 5 did not respond. Of the 12 who agreed to participate, one entrepreneur did not offer an appointment time despite a subsequent prompt and this was interpreted as a decision to withdraw from participation. A second entrepreneur was unable to participate in the interview within the timeframe allocated to this part of the research project.

Ten entrepreneurs were interviewed, of whom eight were recipients of business or entrepreneurship awards or accolades. The proportion of award winners agreeing to participate was high (75%), despite known award winners comprising 13/23 of those approached (ie 57%).

Entrepreneur’s Referents. Each participating entrepreneur was invited to suggest a referent who knew the entrepreneur very well and might be willing to participate in the project. A copy of the questions to be put to the referent was forwarded to the

entrepreneurs so they could consider this request further. Five entrepreneurs provided contact details for a referent.

The referents nominated were spouse/life partners who also worked in the business (4), close friend and business colleague (1), and a close business advisor (1). Of the nominated referents, one did not respond to the invitation from the researcher to participate. This was interpreted as a lack of willingness to participate in the research and no further attempt was made to engage this person in the process.

Interview Contact Process - Entrepreneurs. Contact processes varied (see Table 3-2 for a summary of contact processes and hit/miss rates).

- Where the initial contact was by made by telephone, directly with the entrepreneur, and the entrepreneur agreed to consider the request, the Research Proposal Materials (see Appendix 4) were sent via email to the entrepreneur. The entrepreneur considered the materials and returned the signed consent form as an indication that the interview could go ahead. Where a signed consent form was received further telephone and/or email contact was made to schedule a time and date for the interview.
- Where initial contact with the entrepreneur was made via written communication (either email or letter) the Research Proposal Materials were forwarded without a prior telephone call. Such approaches resulted from either the entrepreneur being a personal contact of the researcher, or there being no known telephone number for the entrepreneur, or the entrepreneur's business office advised the researcher to contact the entrepreneur directly via personal email and provided the address to the researcher.

In general, it was more difficult to recruit female entrepreneurs than male entrepreneurs. To address this, after receiving several rejections from female entrepreneurs, the researcher included an appeal in the email communication to prospective interviewee's staff. The appeal went to 6 prospects, of which 3 resulted in an interview. This generally took the following form:

~~In~~ truth it is easier to attract male than female entrepreneurs - by virtue of the relative numbers of each - and the inclusion of [entrepreneur's name] in this study is high on my "wish list".

Interview Contact Process - Referents. In all cases, the entrepreneurs contacted their referents to obtain their verbal agreement to participate. The researcher made subsequent email contact with the referents citing the entrepreneur's advice that they

welcomed contact about the project. The contact email to the referents was an invitation to participate in the research and a copy of the Referent Interview Schedule (see Appendix 5).

In the two cases, where the referent was not the life partner of the entrepreneur, a slightly modified version of the Research Proposal Materials was sent. The researcher rationalised that a more formal approach was warranted with these referents as they neither lived near the entrepreneur, nor were in daily contact. Furthermore, they were offered as referents in a business context rather than personal context, and so the more formal approach was deemed appropriate.

Table 3-2 Summary of Contact Processes and Hit/Miss Rates

	Total	Accept	Decline	No Response	Withdrew	Participated	Referent	
Telephone contact with E	4	4			1	3		
Telephone contact with E's assistant/staff	9	2	6	1		2		
Email/letter contact with E	8	6		2	1	5	5	
Email/letter contact with E's office	2			2				
Total	23	12	6	5	2	10	5	
	N=	/23	/23	/23	/12	/23	/10	
		52%	26%	22%	17%	43%	50%	Award Winners
Males	12	7	3	2	2	5	2	7
Females	11	5	3	3		5	3	8
Award Winners	15	9	5	1	1	7	4	15

3.5.6.4. Interview with the entrepreneur

Interview administration. Each entrepreneur was emailed a copy of the Extract of the interview schedule prior to the interview, and asked to have in mind a critical decision they had made in their business. The entrepreneurs were advised that several questions would be asked that would relate to this critical decision. The entrepreneurs were invited to review the questions prior to the interview, but advised there was no requirement to do so. The Extract contained the majority of questions, but left out the questions around obsession and childhood anxieties, the researcher concluding that

such questions might be intrusive or impertinent if seen cold and without an introductory preamble.

Nine out of ten interviews took place over the telephone. Nine entrepreneurs were located within Australia and opted for a telephone interview rather than a visit from the researcher at their place of business. Of the two entrepreneurs based in the same geographic region as the researcher, one preferred a telephone call, the other a face-to-face meeting.

Most interviews were taped using a digital voice recorder via a telephone line tap to avoid the attenuation and noise often associated with acoustic coupling; one interview was conducted in person with the digital voice recorder on the interview table. Each interview took between 36 minutes and 64 minutes, the average duration of the calls was 61 minutes. The majority of interviews took place at the appointed time. In one case, a follow up telephone call of approximately 10 minutes duration was undertaken to clarify some information that had been provided. In another case it took several attempts to identify a mutually suitable time to call, and two interviews could not progress at the agreed time but were rescheduled to a later date.

Conducting the Interview. The researcher constructed preambles to introduce the research and to lead into the questions modifying the preambles depending on how the interview with the entrepreneur was progressing.

One interview was constrained by the interviewee's time. Two interviewees were particularly interested in engaging more with the researcher offering access to networks, suggesting explanatory themes, and inviting the researcher to stay in contact.

It was particularly noticeable that some of the male interview subjects were not comfortable describing concepts such as passion, or how they viewed themselves. In these cases the researcher probed more in an attempt to draw out the subject.

Four of the entrepreneurs did not like the word "obsession", one suggesting the alternative "immersion", the others rejecting it as a description that might apply to them. In all instances, the association with illness and compulsions were given as the reason for their objection to the word. In these instances, a discussion about what the word obsession meant to them was undertaken. The objective was to probe to see if their work habits, patterns and experiences were similar to those of the entrepreneurs who did apply a variant of the word "obsession" to themselves. It is interesting to note that only one of these entrepreneurs liked the word "harmonious" as a description of their

passion – the others expressing a preference to lie somewhere between “harmonious” and “obsessive” on a passion continuum.

One entrepreneur did not like the word “entrepreneur” as a description of himself, as he believed it had connotations of short-term business strategies designed to generate quick returns for the owner of a business. Another entrepreneur did not like the word “passion” thinking it was too “fluffy” to describe her and preferring to think instead of “survival” as a substitute word for “passion”.

The question schedule was followed with practical variation as necessary. For example where common sense dictated that a question had already been answered during an earlier question, it was not asked when it appeared on the schedule. In some cases additional probing was required in order to get the entrepreneur to speak to the question rather than around it, or to follow up a comment that was particularly interesting. As the process of interviewing people progressed certain things became evident and affected the interview procedure:

- In recognition of the aversion some have to the word “obsession”, these questions were introduced with a preamble about Vallerand and his conceptualisation of passion as either harmonious or obsessive. The entrepreneur was then invited to comment as to whether either adjective (harmonious or obsessive) applied to them. The nature of obsessive passion was then explored, consistent with the interview schedule.
- Some entrepreneurs revealed stories of personal loss or great sadness. In such cases the researcher made an effort to be supportive in listening and responding. The importance of the revelation was acknowledged to the entrepreneur at the conclusion of the segment.
- Where entrepreneurs objected to a word choice used by the researcher, attempts were made to accommodate the entrepreneur’s adjectival preferences, whilst probing to see if descriptions were consistent with other entrepreneurs.

3.5.6.5. Interview with the referent

Five referents participated in the study, all by telephone interview. Each referent was emailed a copy of the Referent Interview Schedule prior to the interview. The referents were advised that other questions might be asked as the interview progressed. The

referents were invited to review the questions prior to the interview, but advised there was no requirement to do so.

Each interview took between 27 minutes and 43 minutes, with the average duration being 32.6 minutes. The majority of interviews took place at the appointed time, with only one case where the call was made and rescheduled several times.

The researcher constructed preambles to introduce the research and to lead into the questions based on how the interview with the referent was progressing. The two non-family referents particularly enjoyed the process and asked to be kept informed of progress of the research.

3.6. Data analysis

The questions were analysed for themes and patterns which were used to shape hypotheses (Eisenhardt 1989). Explanation building (Yin 2003) was undertaken iteratively and the framework, constructs and hypothesis amended as necessary in the light of the findings until a satisfactory explanation for the constructs, and the relationships between constructs emerged.

The framework and the extant literature suggested initial categories for analysis (Miles *et al.* 1994), and others were added and amended as the analysis process proceeded. Units of data were examined for emergent patterns, similarities and differences, and coded to categories and subcategories. As a consequence of unexpected emergent patterns in the categories of “obsession” and “deprivation and disadvantage”, additional literature was reviewed that contributed an explanation to these findings.

The explanatory emergent patterns and themes that emerged from the data were used to formulate testable hypotheses that are the subject of Study 2.

3.6.1. Transcripts

The taped interviews were transcribed using Dragon Speaking Naturally voice recognition software. The software program NVIVO was used to facilitate sorting, coding, storing and retrieving the data.

Each interview was transcribed within three days of the interview, generally the next day. It took approximately 3-6 elapsed hours to transcribe the entrepreneur interviews; and 2-4 hours to transcribe the referent interviews. Entrepreneur interview transcripts

averaged 13 pages or 7,260 words, and referent interview transcripts averaged 7 pages or 3,800 words.

Transcripts were reviewed iteratively during data analysis and to a lesser extent during the writing-up phases for this study. Some were re-examined as academic conference papers were developed from the data in the 12 months following data collection.

3.6.2. Categories and coding

Coding the data into categories commenced after the first interview was transcribed in April 2009. The process was repeated as each interview was transcribed; and categories were revised and expanded throughout the data analysis phase, which finished in July 2009.

NVIVO Software was used to store the categories. NVIVO facilitated a drag and drop technique in which sections of text were examined, compared, contrasted and coded to one or several nodes serving as categories and sub categories.

Two initial categories (~~Entrepreneurs~~ and ~~Referents~~) were created, and contained each main question asked in the interview (see Table 3-3 and Table 3-4).

Major categories were suggested by the literature and conceptual framework. The initial categories (above) were searched for units of data to code into the major categories of:

Deprivation and Disadvantage, Obsession, Passion, Decision Making, Work-life Balance, Success

A fresh examination of the data, undertaken as part of developing a conference paper in September 2009, revealed some new patterns, themes and ideas and resulted in additional new categories.

Table 3-3 Initial Category – Entrepreneur

Question	Sources [*]	References ^{**}
Q 1* How would you describe yourself?	10	40
Q 2 How would you describe passion?	10	48
Q 3 Are you a passionate person in general?	10	17
Q 4 Describe a critical decision you had to make in your business?	9	19

^{*} A "source" in this context is an interview transcript. A total of 15 interviews were conducted; resulting in 10 possible sources for entrepreneurs and 5 for referents.

^{**} Refers to the total number of times data derived from sources was coded to the category.

^{*} The number system used for each question, and the ordering of the questions, has no bearing on the research. They were used for ease of sorting within the coding software.

Question	Sources*	References**
Q 5 On a scale of 1-5 how critical was the decision?	6	7
Q 6 To what extent did you experience uncertainty and risk surrounding that decision?	10	23
Q 7 What do you think others thought about the decision – did their view differ from yours?	10	33
Q 8 Was the decision you made successful or not?	9	16
Q 9 Please describe the role you think passion played in that critical decision?	10	19
Q X10 How emotional was the critical decision-making process for you?	9	31
Q X11 How did you feel when you were in the process of making that decision	8	14
Q X12 What did you do to facilitate coping with the decision making process?	10	21
Q X13 Do you have a passion for your business?	8	16
Q X14 How do you think passion comes into the day-to-day aspects of your business?	8	19
Q X15 Would you describe your passion for your business as obsessive?	9	31
Q X16 Does being obsessively passionate benefit you?	9	31
Q X17 Do you think there is a downside to your feelings of passion?	10	24
Q X18 What was your early childhood like?	10	63
Q X19 What were your parents' predominant attitudes?	7	23
Q Y20 Did you feel different to other children?	11	31
Q Y21 Feel about being different to other children in the area or went to school with?	6	14
Q Y22 How did you feel or think about things that other children had, that you didn't have?	8	18
Q Y23 Did you experience any anxiety as a child?	7	16
Q Y24 Did you undertake moneymaking activities as a child?	10	39
Q Y25 Have the experiences of your childhood contributed to your feelings of passion?	8	16
Q Y26 Do you think you have achieved business success?	10	16
Q Y27 How would you define success?	11	26
Q Y28 Does work-life balance apply to you in running your business?	10	40
Q Y29 What advice would you give about the downside of entrepreneurship?	8	18
Q Z30 Do you have any comments you would like to make about this research?	4	5
Q Z31 Is there anything else you would like to say?	6	9
Q Z32 How would you define entrepreneurial success?	7	11
Q Z33 Are you a successful entrepreneur?	6	10
Q Z34 Do you think about your business?	4	8

Table 3-4 Initial Category – Referent

Question	Sources	References
Q1 Can you tell me about that decision, the period surrounding that decision, and how it impacted E?	5	14
Q2 Can you tell me what it is about your relationship with E that results in you being a key person to him (or her)?	4	9
Q3 Do you think E is an obsessive person?	5	22
Q4 Do you think E's business is a successful one?	5	9
Q5 Do you think E is someone who in general self reflects?	4	7
Q6 Does being obsessive/not obsessive help or hinder E as an entrepreneur?	5	11
Q7 Does E's passion help or hinder him/her in the business?	5	9
Q8 How would you describe E as a person?	5	42
Q9 In your view is E a passionate person?	6	15
Q10 Is E a successful entrepreneur?	5	6
Q11 Is there anything else you would like to say?	4	9
Q12 Was the decision a successful one for E and/or the business? Why?	6	10
Q13 Where do you think E's passion come from?	5	15

All the categories and subcategories together were examined and formed a list of thematic categories into which data was coded (see Table 3-5).

Table 3-5 Thematic Coding Categories

Category Label	Sources	References
Anxiety	6	16
Work-Life balance	9	48
Child work	9	35
Deprivation & disadvantage, self reliance, control	10	104
Decision making	11	120
Describe self	11	76
Difference	10	70
Emotion	9	27
Entrepreneurial success	6	11
External admiration	6	13
Identity	1	2
Learning	6	19
Normalising experiences	1	2
Passion descriptions	12	119
Passion comes from.....	7	24
Referent descriptors	5	49
Resilience	2	4
Self-identity and the business	6	10
Success	11	28
Vision	8	17

Obsession was examined as a separate category comprising three subcategories (see Table 3-6).

Table 3-6 Obsession Categories

Category Label	Sources	References
An obsession	11	54
Obsessive personality	13	32
Persistence	2	2

The coded categories were used as the basis of the analysis. They and the data they contained were compared, contrasted, developed into matrices, and examined for patterns, similarities and differences in an attempt to suggest theoretical explanations and linkages between the data and the framework. As such the coded categories provided a useful structure to capture and tease out the words, thoughts and observations of the interview subjects, which in turn were interpreted by the researcher.

3.6.3. Memos

Memos were used to record thoughts and insights as they occurred during the research process, to note observations on the interviews and interview subject, and to maintain a journal of Study 1 as it evolved.

Memos were also used to store definitions, demographic data and articles on the entrepreneurs participating in the study, note “housekeeping” comments about the Study, and record requests by the entrepreneurs or referents such as those to be kept informed of the study’s progress.

In particular, memos were used to note down thoughts and ideas on emergent patterns and changes in the researcher’s thinking which were driven by the process of data analysis and the passage of reflective time. A memo “Themes” was used to note which entrepreneurs matched to anticipated and emergent categories within the data, and to help devise categories (see Table 3-7).

Table 3-7 Themes arising from interview data

Themes	Frequency
Industrious Parents	10
Felt loved by at least 1 parent	10
Thoughts of business always on mind	10
Expressed happy childhood	9
Felt different to other children	9
Actively manage how much they work on/in ventures	9
Salaried child (not pocket money from parents)	8
Felt different from other children on personal level	8
Believes in/evidence of working at good relations with others	8
Engages in continual self-learning practices - especially business books	8
Expressed feeling close to father	7
Independent children, left alone by parents, few rules	7
Excelled at school	7
Expressed anxiety/fear as child	6
Excelled at sport	6
Describes self as competitive child	6
Wouldn't want own children to have similar childhood experiences	6
Venture enjoyably consumes them	6
Experienced poor personal/health outcomes through work related behaviour and corrected behaviour to manage same	6
Entrepreneurial parent	5
Used childhood income to purchase items for self, no other source of money for item	5
Felt sense of destiny as child	5
Expressed some difficulty/diffidence with mother	5
No dissenting voices because others agreed with me	5
Would not have noticed dissenting voices	5
Has Board and/or advisors	5
Used own money to buy treats/items for family/household	4
Expressed feeling close to Mother	4
Referent (n=5) describes entrepreneur as competitive	4
Felt different from other children on material level	4
Has intrusive thoughts of business	4
No such thing and work-life balance	4
Others "buy into" my passion	4
Excludes dissenters, keeps supporters close	4

3.7. Results

This section describes and gives examples of the data that informs the conceptual framework. Data is not reported verbatim but has been edited to improve readability.

3.7.1. Childhood experiences of deprivation and disadvantage

Each of the entrepreneurs interviewed described one or several childhood experiences that could be described as experiences of deprivation or disadvantage, yet all spoke of very positive factors in their childhoods. This pattern was not anticipated at the time the conceptual framework was developed. Subsequent discussions with colleagues prompted an examination of the education literature, known to have explicitly addressed matters of deprivation and disadvantage. The emergent patterns in the data fitted the risk and protective factors (see Table 3-8) described in the resilience literature.

The evidence for deprivation or disadvantage in the backgrounds of all the entrepreneurs come from explicit statements made by the entrepreneur, or from recognition by the entrepreneur of some deep level of dissatisfaction within their childhood, or is suggested by the researcher based on comments made by the entrepreneur. Some entrepreneurs commented that as children they did not recognise their situation as one of deprivation or disadvantage but as adults now understood the difficult nature of their experiences.

E 6 I look back on that and it must be horrific but I don't remember it as being horrific. Well, if I look at it I would not like to think that my children would have to survive what I did.

It appears that even as adults some of the entrepreneurs do not recognise their circumstances as having disadvantaged or deprived them of anything. Yet in relating the anecdote or history to the researcher they have highlighted something that to the researcher is indicative of being deprived of key inputs or disadvantaged by key circumstances. That the entrepreneur recalls the fact as part of their history suggests that they may well feel the experience is somehow crucial to them whilst not articulating or recognising its contribution to their development in the interview.

E 3 ...I just thought it was the luck of the draw... I just thought that was life.

Other entrepreneurs felt their deprivation or disadvantage keenly as children and recognised that it has had a motivational effect on them.

E1 ... And that did have a huge impact on my life....on the positive side it made me very independent. I had to look after myself a very very early age...

Table 3-8 Risk and protective factors

Who	Experience of Deprivation or Disadvantage (Risk)	Childhood - Cheerfulness (Protective)	Spiritual (Protective)	Intelligence & Effective Learning (Protective)	Proactive Action – 1st paid work & purpose (Protective)	Connection to Caring Adult (Protective)
E1	Sexual abuse age 8 Left behind age 15 – family moved away; Denied education opportunity	Yes	Organised religion & sense of destiny	Sport & Academic success, School leadership roles; Continual learning practices	Age 15 – lived independently of family; fully self supporting	Father
E2	Death of parent age 3 Economic struggle Non-English speaking parent			Academic success, Continual learning practices	Age 11 - family business Contributed to family income.	Mother
E3	Indications - Parent with mental health issues Alcohol indications	Yes	Sense of destiny	Academic success, School leadership roles; Continual learning practices	Age 10 - local butcher shop, Own choice	Father & Mother
E4	Low socio economic status Unable to access desired education; Alcohol indications	Yes	Sense of destiny	Sport & Academic success, School leadership roles; Continual learning practices	Age 10 – daily paper run, Own choice	Father, Grandfather
E5	Death of parent age 7 Subsequent economic struggle		Organised religion & sense of destiny	Continual learning practices	Age 11 – friend's café Strong desire to work	
E6	Chronic illness both parents age 11; Death of both parents age 14		Organised religion & sense of destiny	Sport & Academic success; School leadership roles	Age 11 – family business Family need.	Father, Mother
E7	Chronic economic struggle Unable to access desired education	Yes		Sport & Academic success, School leadership roles, Continual learning practices	Age 8 – family farm Contributed to family income.	Mother, Father
E8	Poverty	Yes	Organised religion & sense of destiny	Continual learning practices	Age 8 – sold catch from rabbiting, fishing. Contributed to family income.	Father
E9	Poverty	Yes	Sense of destiny	Sport success, School leadership roles, Continual learning practices	Age 11 – gardening enterprise	Father
E10	Poor peer relations and sense of belonging at primary school			Sport & Academic success		Father

Anxiety and fear – Six entrepreneurs gave examples of experiencing fear or anxiety in childhood or during their early teens. In some cases the cause of the fear was recognised once they became adults, in others the cause was not identified. Four entrepreneurs expressed fear as a motivator in their entrepreneurship. Two referents suggested fear as a driver for their behaviour, without naming the origin of that fear or its nature.

E1 I had a lot of anxiety as a child I went into panic attacks.

[In the interview this entrepreneur did not name the source of her fear (sexual abuse at age 8), instead directing the researcher to her biography "You are definitely going to have to read my book because I go into quite a lot of detail about that [ie her childhood experiences]".]

E9the anxiety was probably there you know from the get go I don't really know life without it, I can't remember not thinking about it.

R7 ...I think a lot of it started out as fear. ... in some point in her life she made a decision not to be something ,.... and she does talk about that at times, to be something other than that which she grew up with...

3.7.1.1. Protective factors

To be successfully competitive can be indicative of both intelligence and an ability to be proactive, which in turn can provide positive consequences. Success in competitive activities can also be in part both the consequence of supportive external environments, and to serve to attract the support of external environments such as key adults, schools, sporting or cultural groups and wider communities.

Being naturally competitive, seeking control, and engaging in self-directed activities that generate positive outcomes are themes evident in the data.

Competitive behaviour: Seven entrepreneurs reported that they excelled at schoolwork and five reported that they excelled at sports. Seven entrepreneurs offered unprompted comments indicating a competitive nature and four out of five referents also pointed unprompted to this characteristic in the entrepreneur.

Control: There was evidence in the data that having control or being in control is important to the entrepreneurs:

E7 ...it's a reality that I wanted to own my own [names business type] that the bank can't take...

E8 Control ... probably the biggest driver that drives me today to be probably in control ... to be able to live the life I choose...

Proactive Action that provides positive consequences: All entrepreneurs gave examples of self directed, proactive action such as seeking out or developing money-generating opportunities from an early age; undertaking leadership activities with friends and at school; and taking responsibility for contributing to the financial well being of the family.

As a consequence of parental work habits or circumstances, 7 of the entrepreneurs experienced a high degree of independence, reporting either minimal rules, or being aware of the boundaries and being left to their own devices, and having had the freedom to roam.

All except one entrepreneur undertook, from a very early age, paid work or in kind work that differed in nature from childhood jobs in the home for pocket money rewards. Their first work activities commenced in childhood, and most described work as something that was a continual part of their lives into adulthood.

Connection to caring adults: all entrepreneurs felt loved as children by at least one parent, 7 felt loved by their father, 4 felt loved by their mother. Eight described their home environment in terms similar to loving, suggesting they typically had a connection to a caring adult in their childhoods. As adults, all expressed the importance of family support and/or gave clear indications of the importance of family to them through the close involvement of family members in their businesses and lives.

Optimism – entrepreneurs and their referents most commonly described themselves in terms consistent with factors located within the extraversion domain for personality (Johnson 2007) (see also Table 3-9). Nine of the entrepreneurs commented on having had happy childhoods, expressing them in terms such as “exciting” and “adventurous” suggesting that, as children the entrepreneurs were cheerful children, and thus experienced positive emotions including optimism, happiness, enthusiasm and joy.

Spiritual Belief – Seven of the entrepreneurs mentioned a sense of destiny in their childhood, four indicated that they willingly participated in organised religion as children. Four had both a sense of destiny and a spiritual belief. A sense of destiny is included as part of spiritual belief because of the common underlying “belief” in something intangible that can act as a help to a person in difficult times.

3.7.2. Personality characteristics

There is support for the suggestion that entrepreneurs differ from others in terms of their basic personality as measured by the Big Five Personality Dimensions (Zhao *et al.* 2006). Table 3-9 lists descriptions of the entrepreneur matched to the 30 factors of the Five Factor Model of Personality (Costa *et al.* 1995), and summarises the frequency of responses for each factor.

Table 3-9 Descriptions by Gender

Five Factor Traits	Entrepreneur self describes		Referent describes	
	F	M	F	M
	N=5	N=5	N=2	N=3
Extraversion	7	8	1	8
Conscientiousness	6	4	1	3
Openness	1	5	1	
Agreeableness	3	2	2	
Neuroticism	0	0	-1	-3

The trend in the data suggests that entrepreneurs describe themselves in terms that are consistent with the Extraversion and Conscientiousness domains. Referents describe the entrepreneurs predominantly in terms of the Extraversion domain, and then equally in the domains of Neuroticism (negative indicates low in domain) and Conscientiousness. This data suggests referents are as impressed by the entrepreneur's capacity to withstand emotional stress as with the entrepreneur's conscientiousness.

Referents more frequently described their male entrepreneurs consistent with the Extraversion domain. The two referents of female entrepreneurs both made comments that were consistent with the agreeableness domain. Referents noted a lack of emotionality (i.e. neuroticism) in their entrepreneurs, particularly for male entrepreneurs (see Table 3-10).

Examining the data by gender, we see that male and female entrepreneurs described themselves in terms consistent with the traits from the Extraversion domain. Female entrepreneurs used more descriptors from the Conscientiousness domain and male entrepreneurs more descriptors from the Openness to Experience domain (see Table 3-10).

Table 3-10 Entrepreneur and Referent Descriptions Matched to Big Five Factors

Extraversion			Agreeableness			Conscientiousness			Neuroticism			Openness		
	Ent ⁶	Ref		Ent	Ref		Ent	Ref		Ent	Ref		Ent	Ref
Friendliness	1,7	3,9,8	Trust			Self-efficacy	1, 9		Anxiety		-4,-6,-9	Imagination	8	
Gregariousness	9		Morality	1,4		Orderliness	4,7		Anger			Artistic interests	3, 8	
Assertiveness	3,1,4	1,3	Altruism	1, 9	1	Dutifulness	1		Depression			Emotionality		
Activity level	4,1, 8, 7, 9	8,9	Cooperation			Achievement-striving	1,3,6,7,9	3, 7,8,9	Self-consciousness			Adventurous	2	
Excitement seeking	6, 8		Modesty	1		Self discipline			Immoderation			Intellect	5,2	7
Cheerfulness	1, 9	7,8	Sympathy		1	Cautiousness			Vulnerability		-1	Liberalism		
Frequency	15	9		5	2		10	4		0	4		6	1

Summary		
	Entrepreneur	Referent
Extraversion	15	9
Agreeableness	5	2
Conscientiousness	10	4
Neuroticism	0	-4 ⁷
Openness	6	1

⁶ *The columns (Ent) and (Ref) indicate when the Entrepreneur or Referent (coded to that number) described behaviour consistent with this domain, i.e. Ent 1,7 indicates a comment by Entrepreneur 1 and Entrepreneur 7; Ref 3,9,8 indicates a comment by Referent 3, Referent 9, and Referent 8.

⁷ Negative sign indicates the number of references suggesting the entrepreneur was **not** neurotic

3.7.3. Passion

Although entrepreneurs described their passion variously, all saw passion as important in the success of their ventures (see Table 3-11). Entrepreneurs spoke in terms of passion being something tangible, being consequential, having a distinct feeling, and enabling them to take action in their ventures.

Table 3-11 Passion described

Who	Passion is	Passion comes from	Passion feels like	Passion does	Passion's value
E1	.... almost like a physical force ... a powerful compelling emotion	it is an outside force almost	...makes you feel good	..brings out an intensity... it drives you and	... it can achieve great results
E2	enjoyment	...enjoying what you are doing...	..enthusiasm and drive ..	...if I didn't enjoy what I was doing I wouldn't be doing it.	...you actually have the enjoyment of whatever job you're doing...if not it's more a task.
E3	To feel and need to do... a will to make a difference in the world itself..	..you believe strongly in something...		...arms you with that perseverance and determination...	I didn't not want to go to work ever.....
E5	It's what you need to stay persistent		...feels like a burden because it is hard to walk away from something.. it's hard not to care..	...feels very much like a fuel... actually gives me the energy to do what I have to do... it's what you need to stay persistent	... allows me to do the part of each of day that is disappointing... or frustrating or whatever...
E8	I think passion is a feeling. You feel it live it breathe it. It's a feeling not a thought. A thought you can't live and breathe, but passion you live it.		...it consumes you... Passion...makes me feel alive, makes me feel in love with life. Raring to go.	...passion fuels the hole in the soul.....takes away all these doubts and insecurities.	Passion gives you a reason for living.
E9	...it's energy...		...sort of an exciting stress...an underlying anxiety...	There's never a day that you're not excited about it even when things go not as planned...	It just pushes everybody over the line...
E10	...being excited about something, really believing in something, being committed to something.			being self driven to go out there and talk about it or promote whatever it is that you're passionate about	I could keep persisting and focusing on this tool for four years

3.7.4. Passion and decision making

The nature of the entrepreneur's decision making was examined, particularly with a view to determining the impact that passion had on uncertainty in the context of decision-making. Entrepreneurs were asked to describe a critical decision they made that had a 'make or break' effect on the business. McMullen *et al.* define uncertainty in the context of action, as a sense of doubt that blocks or delays action:

- uncertainty is subjectively experienced
- uncertainty is inclusive – no particular form of doubt is specified
- uncertainty has an effect – hesitancy, indecisiveness, procrastination (McMullen *et al.* 2006).

All of the entrepreneurs spoke in terms of either not experiencing uncertainty in the context of their critical decision, or if they did, they described a research process that resolved any feelings of uncertainty. They did not feel that uncertainty impacted on their decision making; some seeing themselves as not prone to uncertainty because of how they were as people, because of the availability of confirming information, or because they "just knew" it was the right decision. They described their decision making as being informed by the views of key others, satisfactorily researched, unrushed (even where time critical) and only delayed by prudent search for relevant information.

E1 Procrastination definitely not.... I immediately started work on - like how can I turn this around... It just became my focus then... I actually carefully plan and calculate what those risks are and weigh it up and decide which option I will take... I gathered around me experts in the fields of finance and law and all those sorts of things... got their opinions as well. I didn't just go off by myself...

Passion was present in the context of making this critical decision. In many cases it was the passion of the entrepreneur that brought others on board, and perhaps even silenced dissenters or led to them being ignored or overlooked by the entrepreneur. There was no suggestion that passion overrode feelings of uncertainty. Passion's role in decision-making appears to be more in providing energy to sustain the entrepreneur throughout the process.

E9 I thought it was necessary to take it to the next stage and the next stage was floating it on the stock exchange... I was 100% in my mind it was the

right thing to do ... (I) just assumed that everyone thought it was the right thing to do because I was so passionate about... I knew it was the right decision I just did not know how to do it ... when one person who is the leader is so definite, it's very hard for people to even question that decision... Procrastinates the wrong word... it's probably just that I took time to actually complete the task ... it's not a matter for procrastination but more a uncertainty of actually how to proceed ... I'm not really a procrastinator... I think everyone thought it was, you know, it seemed like a sensible thing to do...

One entrepreneur spoke of the undermining role that emotion, as distinct from passion, played in a critical decision making process that ultimately lead to the business going into receivership.

E5 ... (I) made the decision along with my brother... certainly I didn't have any procrastination or delay.... I was really convinced it was the right thing to do... I was doing it for the right reasons ... people around me kind of really were looking to me as a leader to sort of help set their views ... I can be pretty convincing... If you believe in it is kind of.... whether it's right or wrong... essentially I can be very convincing... Passion kind of strengthens you ... emotion can be really weakening and really toxic and really exhausting you know... I don't think passion played enough of a role in that decision. I think had I been operating from passion more so than emotion I would have not have been so scared into thinking that I wasn't going to get funding without having the right talent on board. I would have realised that I was the right talent and the other parts could be found you know.. ... I think the emotion or the insecurity, the feeling of “I-knew I was going to need funding but I’m not enough” was what fuelled that decision rather than the passion that “I-am enough I know what I'm doing and I can get funding” ...

3.7.5. Obsession

In clinical populations, obsessions are intrusive thoughts that are unwanted and cause distress (DSM-IV 2000). In normal populations, these intrusive thoughts exist and cause no distress (Rassin *et al.* 2007). The necessary and sufficient conditions for an obsession are: intrusiveness, internal attribution, unwantedness and difficulty of control (Rachman *et al.* 1980), and for confirmation of the presence of a non-clinical obsession we suggest that the literature implies that:

- the individual attaches great personal significance to the thought/s (Salkovskis 1985), and
- the thought/s stimulate strong affective feelings (Burgoyne 2005), often described as anxiety or feelings of distress (DSM-IV 2000)
- the person feels compelled to react to manage the intrusive thought (DSM-IV 2000; Rachman 2003).

There emerged from the data a suggestion that the way entrepreneurs think about their businesses may be consistent with the presence of an obsession (see Table 3-12).

That is, entrepreneurs:

- do appear to experience intrusive thoughts about their businesses and perhaps their continual thinking about their businesses masks or actually shows the extent to which this happens;
- their thoughts are internally attributed, that is they know where these thoughts come from and why they have them;
- do not always want these thoughts, they seem to have these thoughts without seeking them;
- have difficulty controlling thoughts about their business, or actively work to, or attempt to, manage the time they allow thoughts about their business to occupy their minds, the thoughts are an unwelcome presence that they learn to live with.

In addition, to confirm the presence of an obsession:

- their businesses do have extreme significance in their lives, and it is plausible to suggest that their thoughts about their businesses will be infused with personal, perhaps overwhelming, significance;
- the thoughts about their businesses seem to generate very strong feelings in the entrepreneur, there are indications that continual thinking about the business generates anxiety and also passion;
- the strong feelings appear to motivate purposive action, that is in response to these feelings the entrepreneurs take action or feel they have the capacity to take and continue action in the face of difficulties and stresses.

Table 3-12 Obsessional Thoughts

Who	Intrusive Thought/s	Unwanted	Difficult to Control	Internal Attribution	Strong Feeling	Motivates action	Personal Significance
E9	...you could be reading a child a book at night... a story about a mouse for instance...and the next thing in the middle of it you've read six pages and you haven't even heard a word that you said ... you're actually thinking about your business ...and that's so very intrusive... and that's where it comes down to missing the moment you know...you're there physically, you're not there mentally.	Because it borders on you know...insanity. You know, it's like one of those things you can't turn it off. ... it's like any addiction... you wish you could stop thinking but you can't ...like there's no choice ...	...there's no on and off button... it's on and at times in your life when you wish you could turn it off but you can't. So then you've gotta learn to live with it and how to manage it... accept what you are and go with it rather than fight it ...otherwise then you start drinking excessively to try and dull your brain (laughs).	I don't wake up in the morning and decided that's what I'm going to be (an entrepreneur) I wake up in the morning and that's what I am.	...the anxiety was probably there you know from the get go the lack of sleep ... your drive's like an underlying anxiety within you.	Yeah that was really the emotion of feeling like we needed to do it otherwise you know the fear of failure...like I could see the opportunity made sense... I thought was a great idea but then what drove me to do it was ... that we must do it to avoid failure.	..when you start a company from nothing as a 22-year-old which I did and it lists publicly as a 36-year-old ...it's something that without it you actually have a sense of loss.. you know and that's something that you know it's probably just me dealing with the fact of you know not having something that's been near most of your adult life.
E5	all the time 24 hours really	...there is absolutely that risk of like... de-humanising yourself...	... it's managing those thoughts ... allowing it to be there but putting it into perspective.		... it makes me feel very scared and it makes me way too emotional about what I'm doing..		...it's understanding that whatever I create in business is really just an extension of me.
E7	Yeah. never free yep.. I used to go to bed with the notebook beside the bed because I'd start dreaming of sequences and systems and designing software and I'd wake up and write it down.					Look I'm so driven you know. ....	..it's a reality that I wanted to own my [names business] that the bank can't take...

3.7.6. Work-life balance

All entrepreneurs interviewed reported that they actively sought to manage themselves in relation to their involvement in their ventures. Six did so as a consequence of having experienced the negative outcomes of not managing their involvement in their businesses. Eight entrepreneurs instituted boundaries around their work and non-work lives. Three entrepreneurs did not believe in the feasibility of such boundaries, or perceived them to be luxuries of a First World mindset, but were mindful of the value of ensuring they participated in non-work activities.

- E1 ...combines that whole personal life in the business life because I don't believe in separation of the two...it's always difficult to achieve and I don't know that you always get it right.
- E6 Other people would say I don't have balance. I have an enormous level of energy and I can go forever....But I have a seven-day business... you know like if I was growing rice in Indonesia or India you can't say I'm working 9-to-5 five days a week. It's very fabricated, I think, work-life balance...You know I'm also lucky that I love my work I love my business I love the people in it I love doing it you know I love all the shops I love you know it's great I'm lucky. So that's... I also do other things than work.. if work is my life then that's the strongest part of my life.
- E8 I think balance is bullshit.... I can work 7 days a week because ... it's not work. ... it's your life and your living and I love the life I've never had a sick day in my life... I read a page every day for the first 15 minutes I read a page every day out of [name of book] ...how to have a positive day every day before the shit comes in ...

3.7.7. Criteria for success

The data suggests entrepreneurs define success broadly. The traditional business measures of success such as profits, turnover, growth rates, return on investment and growth in these metrics (Achtenhagen *et al.* 2010) were recognised as indicators of having achieved business success. However, entrepreneurs also valued other non-financial indicators of success (see Table 3-13) and preferred to talk about “success” in these terms.

Table 3-13 Business Success Indicators:

Indicator	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	Sum
Create brand or business that –ives” beyond own involvement			X	X	X	X			X	X	6
Other’s approval, admiration, recognition	X	X	X	X		X					5
Continuous business growth		X	X				X			X	4
Freedom to choose roles & lifestyle	X	X			X			X			4
Business sustainable beyond own involvement							X	X	X	X	4
Achieving socially desirable and responsible outcomes	X			X		X	X				4
Globally competitive			X	X						X	3
Quality & size of customer base		X	X								2
Make others wealthy/successful			X				X				2

3.7.8. What else emerged?

Patterns of experience, thoughts, or responses are evident in the data. These include:

1. **Industrious parents** – all entrepreneurs believed that their parents were hardworking and industrious. Many had examples of parents who worked more than one job to provide for the family, or turned the back yard into a productive resource for the family’s consumption.
2. **Feeling different** – eight entrepreneurs indicated they felt different on a personal level from other children, although only four of these indicated that they recognised this feeling of difference as children. Four of the entrepreneurs noticed material differences between themselves and other children. The remainder indicated points of difference with other children namely: feeling highly responsible, having a strong self-belief, and feeling like an outcast or alien.
3. **Relationships** – Eight expressed a strong belief in the importance of developing and maintaining good relationships with others, expressing the belief that they knew they –couldn’t do it by themselves”. All 5 referents commented on the entrepreneur’s capacity for building and maintaining relationships. Indications are that other people like to be around the adult entrepreneur and that the entrepreneur values and builds relationships.
4. **Passion’s triumph over doubters and dissenters** – it is clear that the entrepreneurs develop a firm belief in the rightness of an idea, and that, when expressed, their passion for their idea is strong enough to override dissenters and detractors and sweep along others in their view.

Four entrepreneurs exclude people who disagree with them from their inner circle; 4 believe that others buy into their passion and ideas; and 3 cited examples of ignoring dissent from key others. Essentially, the entrepreneurs did not notice or

simply ignored people who did not agree with them. They displayed an unequivocal belief in their own rightness in terms of decision-making. However, this was because they could see or feel the outcome and knew it to be right – even in the face of dissent from key others.

The results suggest that entrepreneurs typically surround themselves with like-minded people or personal supporters. If necessary, they exclude or discount the views of those personal supporters who may not agree with them. Their belief in their vision gives them the strength to continue in the face of dissent. Their ability to form strong personal relationships enables them to select and surround themselves with people who are supportive of them while not necessarily agreeing with them at all times. Thus, it appears they do not surround themselves with “yes” people and nor do they resile in the face of non-confirming opinions.

5. **Effective learners** – all entrepreneurs interviewed demonstrated a capacity for, and enjoyment of, on-going learning. They learn from books on business and related topics (5), seek out and draw on the advice of highly experienced others (6), and participate in business and related courses (4).
6. **Sustained entrepreneurial action.** This study commenced with the understanding that entrepreneurs continue in the face of adversity, overcome uncertainty and, in so doing, achieve success. The evidence is that the entrepreneurs “kept going” with their business no matter what, as exemplified by the stories of their critical decision.

This capacity for continuance is a key, but perhaps subtle, component of the research. It emerged very clearly in the data that sustaining entrepreneurial action (that is action associated with continued exploitation of their opportunity/opportunities *in the face of uncertainty and/or challenges*) is a precursor to attaining success, as they understand success to be defined.

In listening to the entrepreneurs, it became clear that sustaining entrepreneurial action is more than something we simply acknowledge as a feature of entrepreneurship. It is of such importance to entrepreneurial outcomes that it deserves to be an explanatory construct in its own right. Without this construct there is unlikely to be entrepreneurial success – however entrepreneurial success is defined. Perhaps that success is all the more “sweet” because it is achieved in the face of such personally challenging experiences.

3.8. Summary of interviews

The purpose of Study 1 was to develop and inform a model for testing in Study 2. Accordingly, this section draws conclusions from the results of Study 1, and develops the hypotheses and model to be tested in Study 2.

Because of Study 1 there are significant changes to the constructs to be tested in a theoretical model proposed to explain the relationships. In particular:

- the information elicited to examine psychological well-being and work-life balance constructs gave informative insights into passion and perhaps to obsession in the context of entrepreneurship;
- the concept of resilience emerged more clearly than did insight and self-reflection; and
- sustained entrepreneurial action is introduced as an explanatory construct.

To aid reading, this section will be written in sequence. However the actual process of analysing and reviewing the data, and drawing out the conclusions was an iterative non-linear process that emerged over a six-month period. It involved a return to the literature that in turn lead to the introduction of different constructs as part of the explanatory path to entrepreneurial action and entrepreneurial success. This additional literature does not stand alone in this thesis, but is incorporated into the literature review in Chapter 2.

The original proposed explanatory framework suggested interaction between the exogenous constructs (childhood experiences of deprivation and/or disadvantage, passion, personality, self-reflection and insight) and endogenous constructs (psychological well-being, work-life balance, firm success and entrepreneurial success).

Before the data collection phase, it was suggested that a combination of particular personality characteristics and childhood experiences of deprivation and disadvantage stimulated obsessive passion, thus enabling entrepreneurial and business success. When obsessive passion was moderated by insight and self-reflection the entrepreneur experienced psychological well being and work-life balance, without which the entrepreneur experiences the “dark side” of entrepreneurship. The presence of harmonious passion was hypothesised to lead to psychological well-being and work-life balance, but to preclude entrepreneurial and business success because of the likelihood that the entrepreneur would disengage from the entrepreneurial action in the

face of maladaptive and less adaptive outcomes generated by the stresses, challenges and uncertainties of entrepreneurship.

Consistent with the value of qualitative methodology (Eisenhardt 1989; Huberman *et al.* 2002b; Marshall *et al.* 2006) the results of the data analysis in Study 1 lead to a shift in understanding of the relationships and importance of the constructs. In particular there emerged from the data two interesting patterns that were not expected (those indicating resilience and obsession), and this in turn lead to a substantial redevelopment of remaining and revised constructs and their proposed explanations.

3.8.1. Additional construct - resilience

The results of Study 1 suggest that deprivation and disadvantage may have some impact on entrepreneurial success. The entrepreneurs may have developed resilience at a young age because of experiences of deprivation or disadvantage. That is, as children they developed the capacity to function effectively in the face of adversity or under stress.

Resilience is a result of the successful operation of basic human adaptational systems enhanced by factors including: connections to competent and caring adults in family; cognitive and self-regulation skills; positive views of self; and motivation to be effective in the environment (Masten 2001). Resilience is described as that ability to adapt in the face of trauma, adversity, tragedy or even significant ongoing stressors (Newman 2002), and it embodies personal qualities that enable one to thrive in the face of adversity (Connor *et al.* 2003). The construct of resilience relies on the presence of risk factors in childhood (Masten 2001) and the interaction of a range of risk and protective factors (Olsson *et al.* 2003).

In the childhood and pubescent years of the entrepreneurs interviewed were one or more examples of the entrepreneur experiencing a situation or event that is recognised as a risk factor (or in terms of my original model an experience of deprivation and/or disadvantage) recognised as contributing to poor or maladaptive outcomes in adulthood (Fergusson *et al.* 1996; Masten 2001; Masten *et al.* 1988).

The entrepreneurs interviewed indicated feeling loved in their families, being successful at school or sports, having paid employment as children, setting and achieving goals, having a spiritual aspect, being competitive and largely independent as children. The entrepreneurs, and their close referents, describe themselves most frequently in terms consistent with the extraversion dimension of personality,

particularly their levels of activity, friendliness and cheerfulness. As adults, they appear to value highly and build close personal relationships with people who support them in their endeavours, and exclude those who do not. These are all indicators of protective factors (Cohn *et al.* 2009; Murray 2003; Werner 1995) (see Table 3-8).

The result suggests a common feature of successful entrepreneurs may be that they faced difficult challenges in childhood, and *because* they had access to resources and protective systems that nurtured the development of their own adaptive systems, they developed resilience. Furthermore, many of them did not see their challenges as such, rather as “just the way things were”; that is their adaptation was so successful that they normalised their experiences.

Perhaps these entrepreneurs developed the resilience in childhood and this may be a key-contributing factor to their entrepreneurial success. That is, as a consequence of experiencing the risk factors in combination with the protective they developed and practised at a young age the capacity to function effectively in the face of adversity or under stress. Thus as adults they are able to sustain entrepreneurial action which in turn directly contributes to entrepreneurial success.

3.8.2. New construct - entrepreneurial obsession

The researcher's initial expectations were that the association of the words of “obsession” and “obsessive behaviour” would be found to be an appropriation of these clinical words into everyday life. That is, there was no expectation that intrusive thoughts, clinical obsessions or obsessive-compulsive personalities, as described in the clinical literature, would be found in this population.

As the interviews progressed, and as the transcripts were analysed, there emerged patterns of words that were suggestive of the presence of “obsession” as described in the clinical literature, leading to the conceptualisation of *entrepreneurial obsession*. The construct of “obsession” was preferred to the construct of “intrusive thoughts” because these thoughts appear to be linked to other features that are used to confirm the presence of obsession, particularly the thoughts that were imbued with personal significance (Rachman *et al.* 1980). Emerging from the data is the suggestion that entrepreneurs experience anxiety or perhaps passion as a consequence of these thoughts. Thus, the possibility of the presence of obsession was explored in Study 2. (Chapter 2 reviews obsession and intrusive thoughts in the literature.)

During the data collection phase, it became apparent that entrepreneurs experience thoughts of their business that might be intrusive in nature, difficult to control, internally attributed and unwanted. The possibility exists that “entrepreneurial obsession” mirrors the definition for clinical obsession, as is evidenced by the presence of intrusive thoughts that are internally attributed, unwanted and difficult to control. Furthermore, these thoughts generate strong feelings, suggested as both anxiety and the emotion passion, and entrepreneurs react to those feelings, some reporting that they feel compelled to work.

One entrepreneur in particular described thoughts that seemed to match the descriptions of an obsession as defined by Rachman *et al.*: an intrusive thought, that is unwanted, difficult to control and internally attributed (Rachman *et al.* 1980). Disordered obsessions are confirmed by the presence of feelings of anxiety or distress (DSM-IV 2000) (ie a strong feelings in response to the thoughts), that compel action (Rachman 2003) (ie motivate the individual to take action in response to the feelings). There is a suggestion that an intrusive thought becomes obsessive when the person identifies closely with the content of the obsessive thoughts (Salkovskis 1985).

Comments by several entrepreneurs could be consistent with the presence of symptoms of an obsession in that they describe thoughts that are variously intrusive, unwelcome and unwanted, and difficult to control. These thoughts stimulate strong feelings that motivate and sustain action, and the entrepreneur identifies very closely with the content of the thought - that is, the venture.

The overall impression from the data is that entrepreneurs are aware of a need to actively manage their desire to work on their businesses in order to incorporate other activities into their lives. Their approach to work, and the requirement to manage their approach to work, supports the suggestion that entrepreneurs may be experiencing an obsession because of the difficulty they experience in controlling their thoughts about their ventures or in not acting on those thoughts.

There may be support for the suggestion that entrepreneurs do experience an obsession for their business. If so, the definition of “obsession” could be expanded to include an entrepreneurial obsession that would be evidenced through the presence of intrusive thoughts that are internally attributed, unwanted and difficult to control. Entrepreneurial obsession would be further confirmed if the thoughts generated strong feelings and made the entrepreneur feel compelled to action. That is, these thoughts stimulate anxiety and motivate purposive action. Thus entrepreneurial obsession, like clinical obsession, would be evidenced by the presence of symptoms.

Symptoms of entrepreneurial obsession evident from the descriptions provided by entrepreneurs include: intrusive thoughts of the business venture, consistent with the entrepreneur's idea of self; that have to be managed and controlled; and that they either do not want or grudgingly learn to live with. This research suggests that the entrepreneurs' thoughts about their ventures are imbued with great personal significance and it is this personal significance that is the emotional trigger that transforms thoughts of the venture into an obsession.

3.8.3. Passion

Entrepreneurial passion as described by the entrepreneurs is experienced as motivating, energising, enabling, positive emotions that are both derived from, and stimulated by, engagement in the venture (Cardon *et al.* 2009).

The results suggest that the presence of passion enables the entrepreneur to view the venture as something that is not *–work*” or *–task*”. This implies that engagement in venture activities produces pleasurable feelings, and serves to facilitate the entrepreneur in the face of difficulties or unenjoyable activities. There is evidence that the entrepreneur's capacity for passionate feelings is not limited to their venture (E5 *“...[my passion] doesn't go across the board ... it has to somehow be attached to my bigger sense of meaning..”*); that passion may come from a wellspring that precedes the establishment of the venture (E8 *“yes I'd say I'm a passionate person”*); but that passion takes a tangible form through the existence of, and settles into a symbiotic relationship with, the venture (E8 *There are so many dream takers, so many energy suckers so many brick walls out there. If I didn't have the passion, I can guarantee I would not be in business today*). Entrepreneurs seem to experience feelings of passion for their businesses that motivate and reinforce their engagement in the work of their business (E6 *“It enables you to do more and if you weren't passionate you couldn't do it”*).

Although the entrepreneurs describe passion differently, they tend to see it as arising from intrinsic forces (such a belief in or enjoyment of something). They experience their passion physiologically or as *–feelings*”, which motivate action in response to these feelings, and contribute to the continuance of entrepreneurial actions. Thus, the presence of passion seems to be a key element in their capacity to sustain entrepreneurial action, particularly in the face of the challenges, difficulties and stresses of entrepreneurship.

3.8.4. Uncertainty

The data suggests that entrepreneurs put thought and planning into their venture activities, and do not experience a sense of uncertainty beyond that which appears to be normal, prudent business intelligence gathering work. The decisions that they make as a consequence of this process seem to be robust and, although they may be aware of others disagreeing with their decision, their confidence in a decision is not undermined by the disagreement of others.

There is no support for the suggestion that passion for their venture enables the entrepreneurs to *overcome* any feelings of uncertainty. There is a suggestion that the entrepreneurs interviewed are capable decision makers, good and willing learners whose ability to identify and come quickly to grips with relevant information for the purposes of decision making reinforces their belief in the rightness of their decisions. This experience of successful decision-making might reinforce feelings of passion for the venture, but feelings of passion for their business do not override or overcome any feelings of uncertainty. Research, contribution from others, and information overcame uncertainty.

The entrepreneurs did not speak as though passion and uncertainty were related. Rather decision-making and any attendant uncertainty were dealt with independent of the influence of emotion or passion except in the example of the flawed decision where the presence of emotion was cited as a causal contributor to failed decision-making. Passion was linked to decision-making only in the context of the process of decision-making being an exciting motivating time, bringing others on board with the decision, or the possibilities arising from a successful decision. Passion was stimulated by the decision; it did not drive or contribute to the decision but may have impacted the decision process. Thus, passion's role does not appear to be to overcome uncertainty.

3.8.5. Sustained entrepreneurial action and success

Beyond indicating that creating something from -scratch" or creating something new indicated the presence of entrepreneurial activity, entrepreneurs did not distinguish actively between business and entrepreneurial success. They seemed to see success as achievement in a number of domains: entrepreneurial, business, personal, and altruistic. Success involved a range of indicators that included typical business metrics, achieving personal goals and being economically and environmentally altruistic within their community.

The most frequently mentioned measures of success were creating a brand or business sustainable beyond their direct involvement; which generates the approval/recognition of others and enables the entrepreneur to choose the role or lifestyle they want. In discussions, it was clear that to the entrepreneur success includes continuing to benefit financially from the existence of that business, either through a shareholding, or by being able to choose to do something else while others profitably run the business.

Three entrepreneurs articulated entrepreneurial success as involving the creation of a business or product, or something new. Because all these entrepreneurs had either won a high profile business competition and/or were avid readers of business texts, autobiographies and advisory sources it is not surprising that their understanding of “entrepreneurial success” sounded well schooled. Nonetheless, one entrepreneur did not like the term (E4 *“I’m a bit negative on the word entrepreneur. ...Entrepreneur I think these days is short-term thinking..”*). Others did not see themselves as entrepreneurs, it was a label applied to them (E7 *“we never thought so until we started being nominated for some awards..”*). E6 *“..then people started coming saying that you’re an entrepreneur and I go “what?””*). Another believed that he had achieved entrepreneurial success because he had started a business from the ground up, but not business success because he had not achieved his business goals.

It seems that the entrepreneurs themselves are less concerned about whether their success is business or entrepreneurial. Similar to the results of research into what entrepreneurs perceive to be useful indicators of growth (Delmar *et al.* 2003), these entrepreneurs subjectively perceive success using an array of indicators from several domains.

However it became evident from the data that continuing with their business, in the face of difficulties, personal challenges, business challenges, and the disbelief of others was something quite significant – almost an achievement in itself. Accordingly, the construct of *sustained entrepreneurial action* is used to capture the importance of entrepreneurial action to success. That is, if you do not stay at the business of your venture your ability to achieve success, no matter how defined, is compromised.

Sustained entrepreneurial action (SEA) is conceived as a two-factor construct. It is evidenced by the ongoing presence of the venture over time, and the entrepreneur’s personal input to the venture.

Business measures are used as proxies for entrepreneurial action that continues over time: number of staff, growth in staff numbers, average turnover in a three-year period,

growth in average turnover in this three-year period, return on investment, and growth in return on investment. Use of business metrics to examine venture performance is both consistent with typical measures found in the entrepreneurship literature (Achtenhagen *et al.* 2010), and good business management practice (Wilson *et al.* 2009). Performance measures are used as proxies because a business that is shown to be performing according to accepted indices must by inference be engaging in entrepreneurial action. Growth measures and multi year performance indicators infer the presence of *sustained* entrepreneurial business action.

Time on task is used as a proxy for the entrepreneurs' sustained input to the venture. The amount of hours that an entrepreneur self-reports as the normal or typical work load associated with the venture is used as a proxy for the *sustained* entrepreneurial time commitment in the face of the challenges etc of entrepreneurship.

In examining the data, the explanation for the success of the entrepreneurs is linked to their capacity to sustain entrepreneurial business action (SEABusiness) and sustain entrepreneurial personal action (SEATime). Thus, these are endogenous constructs, the attainment of which depends on the contribution of the exogenous constructs.

3.9. Revised model

Consistent with the experience of qualitative research, as a consequence of Study 1 there were several changes to the initial conceptual framework. Several constructs proposed as explaining relationships were replaced because of the way in which the data emerged.

Specifically, work-life balance and psychological health were removed because they did not emerge clearly as endogenous constructs. It was clear that most entrepreneurs had experienced poor outcomes, possibly but not necessarily as a result of obsessive passion, but all had recovered from the experience and were active in managing their behaviour to avoid repeat experiences.

Insight and self-reflection did not emerge as moderating obsessive passion, and success was achieved despite experiences of poor psychological health and work-life balance. The questions designed to probe work-life balance and psychological health provided data that proved more useful in illuminating the nature of passion and obsession than the constructs they were designed to inform. This may have been a consequence of natural reticence on the part of the entrepreneurs to be seen as

experiencing maladaptive outcomes. Nonetheless, the information has been useful in reframing the explanatory path to be tested.

The participating entrepreneurs did not distinguish strongly between business and entrepreneurial success, and their indicators of success incorporate elements of altruism. Therefore, business success has been removed as an endogenous construct and a revised construct of entrepreneurial success replaces it. The construct of *entrepreneurial success* (ES) is derived from the most frequently occurring themes emerging from the data and incorporates business, entrepreneurial and self-actualisation elements.

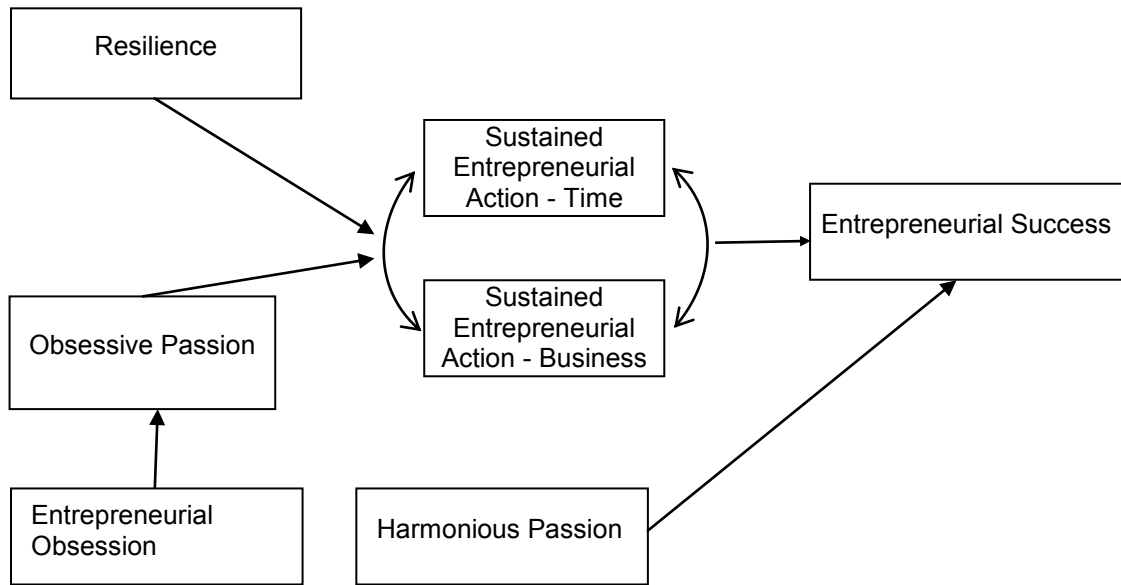
Similarly, in listening to the entrepreneurs' the construct SEA emerged. It is clear that the entrepreneurs continued to work in and on, and to grow their businesses in the face of challenges, ill health, stress, crises, poor work-life balance and that their motivating passion for their venture contributed to their continued entrepreneurial action. Drawing on the literature and the comments of the entrepreneurs, SEA is conceptualised as *any action taken in pursuit of the continuance and growth of the business*. To this end both personal and business proxies for SEA are used: growth, change in growth, return on investment, change in return on investment, number of employees, change in number of employees, turnover and change in turnover, hours worked per week, and work habits whilst on holiday. SEA is logically a precursor to ES.

Resilience replaced deprivation and disadvantage as an explanatory construct. The presence of protective factors in the childhoods of the entrepreneurs emerged so clearly that the literature was re-examined to seek an explanation for the presence of such positive factors. Because the construct of resilience matched so well to the data that emerged, it has been incorporated into the model that helps explain ES.

Interestingly, the suggestion of the presence of an obsession emerged as an explanation of entrepreneurial action; hence the construct of entrepreneurial obsession was developed. This will be tested in the model.

The interpretation of the key constructs that emerged from the data and explanation for their relationships will be quantitatively tested in Study 2 using the model shown in Figure 3-3.

Figure 3-3 Full model path



3.10. Research questions revisited

This research explored two research questions in order to shed light on how passion contributes to entrepreneurial success:

- What is the nature of the entrepreneur's passion?
- How does passion affect motivation, uncertainty, entrepreneurial action, and ultimately entrepreneurial success?

The results suggest that entrepreneurs' passion is important to their capacity to sustain entrepreneurial action without giving clear indications about the nature of that passion. There are indications that passion is strongly felt and motivating, but passion does not appear to overcome uncertainty leading to entrepreneurial action, thus uncertainty is dropped as part of the explanatory model.

Furthermore, it appears that entrepreneurs may experience a form of obsession in relation to their ventures, which might contribute to their capacity to sustain entrepreneurial action. Therefore, this new construct is conceived and introduced for further exploration in Study 2.

The suggestion that deprivation and disadvantage work in concert with obsessive passion is replaced with the construct of resilience working in concert with obsessive passion. Resilience is developed from the interaction of risk factors with protective factors. These risk factors include to experiences of deprivation and disadvantage.

Since both risk and protective factors emerged clearly from the data, the higher order construct of resilience is introduced in preference to deprivation and disadvantage.

Thus, a new understanding is proposed to explain how passion contributes to entrepreneurial success. Specifically, it is suggested that entrepreneurs experience an obsession for their ventures, which contributes to their passion for their venture being obsessive in nature. The presence of obsessive passion, combined with resilience, contributes to the entrepreneur's capacity to sustain entrepreneurial action in the face of stresses and challenges of entrepreneurship. Sustained entrepreneurial action is proposed as a necessary, but on its own, insufficient antecedent of entrepreneurial success.

This new understanding of how passion may contribute to entrepreneurial success has been encapsulated in the hypotheses and testable model that form the basis of Study 2 (see Table 3-14).

Table 3-14 Variable identification and hypotheses

Research Issue	Construct	Conclusions: hypotheses
How does passion contribute to entrepreneurial success?	Passion - uses The Passion Scale (Vallerand <i>et al.</i> 2003)	H₁ : Entrepreneurs display relatively high levels of passion for their ventures as revealed by the mean ratings of The Passion Scale.
	Harmonious Passion - uses The Passion Scale (Vallerand <i>et al.</i> 2003)	H₂ : Entrepreneurs' obsessive passion is greater than their harmonious passion as revealed by the mean ratings of The Passion Scale.
	Obsessive Passion - uses The Passion Scale (Vallerand <i>et al.</i> 2003)	H₃ : Australian entrepreneurs are relatively more obsessively passionate about their passionate activity than are other sample populations, as revealed by comparative ratings of The Passion Scale. H₄ : Obsessive passion, as indicated by The Passion Scale is positively correlated with SEABusiness and SEATime.
	Resilience - uses Connor-Davis Resilience Scale (Connor and Davidson 2003)	H₅ : Harmonious passion, as indicated by The Passion Scale is positively correlated with ES. H₆ : Entrepreneurs display relatively high levels of resilience as revealed by the Connor Davis Resilience Scale.
	Sustained Entrepreneurial Action – Time Sustained Entrepreneurial Action – Business	H₇ : Resilience is positively associated with SEATime and SEABusiness.

Research Issue	Construct	Conclusions: hypotheses
	<i>Entrepreneurial Obsession (renamed Entrepreneurial Intrusive Thoughts)</i>	<p>H₈: Entrepreneurs experience obsessional thoughts about their ventures as evidenced by the presence of <i>intrusive thoughts</i> about their ventures that are: a) unwelcome, b) difficult to control, and c) internally attributed.</p> <p>H₉: Entrepreneurs experience confirmatory features of obsession, specifically the thoughts about their ventures: a) generate feelings of anxiety, b) are of great personal significance, and c) motivate action.</p> <p>H₁₀: Entrepreneurial obsession is positively correlated with SEABusiness and SEATime.</p>

3.11. Chapter summary

In investigating the role of passion in entrepreneurial success, this research explored how, when and why passion, uncertainty and entrepreneurial action coalesced leading towards entrepreneurial success. It sought to develop a testable model to explain the relationships between these key constructs.

Qualitative research methods (Saunders *et al.* 2007) particularly informed by case study techniques (Eisenhardt *et al.* 2007; Yin 2003) were used to explore the entrepreneurs' experience of passion in the context of the phenomena derived from the literature. The results offered a new understanding of the importance and contribution of the constructs while some were eliminated. A new literature review was undertaken to explain emergent data, which in turn generated additional constructs. New constructs were introduced, and relationships between the new and revised constructs are captured in a testable model of entrepreneurial action and entrepreneurial success, supported by 10 hypotheses.

Study 2 is a quantitative study designed to test a theoretical model and subsequently to test associated hypotheses. The methodology chapter describing how Study 2 is developed follows.

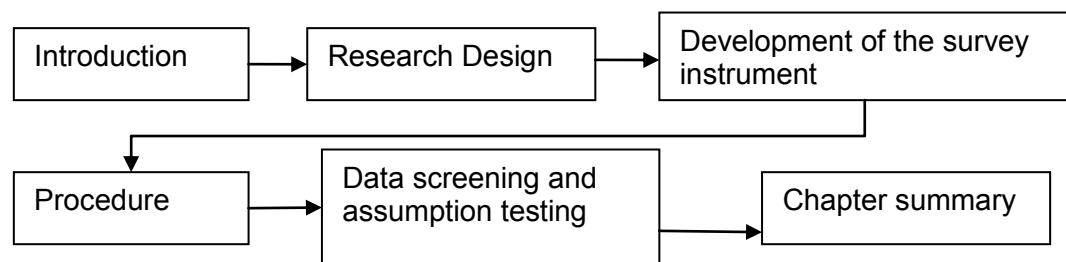
4. Methodology Study 2

4.1. Chapter introduction

Study 1 informed the design and development of the instrument for Study 2. This study builds on the results of study 1, which addressed the problem of how an entrepreneur's passion could influence entrepreneurial success by interviewing 10 successful entrepreneurs and 5 referents. Guided by a conceptual framework, in-depth interviews were used to explore the entrepreneurs' experience of passion, and how it might inform uncertainty and entrepreneurial action leading to entrepreneurial success. An amended combination of constructs as compared to the original emerged from Study 1 to propose how the entrepreneur's passion influences entrepreneurial success. A theoretical model and hypotheses for testing based on these constructs were developed from this data.

In this chapter this revised understanding of the important constructs and relationship influencing passion are examined using quantitative analysis. The design of the study is outlined and the survey instrument, including its components and development process, is described. The procedure for analysing the data is provided, and the statistical techniques and benchmarks used for data screening and the testing of reflective and formative constructs are described. The methods and techniques applied in the structural equation modelling process are discussed. The chapter concludes with a summary of methodology as it is applied to the data collected in Study 2 for the purposes of exploring and testing the proposed hypotheses. Figure 4-1 outlines the chapter.

Figure 4-1 Chapter 4 overview



Adapted from Perry (1998)

4.2. Research design

The purpose of this study was to conduct, analyse and report on a test of a theoretical model that sought to contribute to an explanation of entrepreneurial success. Specifically, it is suggested that entrepreneurs experience an obsession for their ventures, which contributes to their passion for their venture being obsessive in nature. The presence of obsessive passion, combined with resilience, contributes to the entrepreneur's capacity to sustain entrepreneurial action in the face of stresses and challenges of entrepreneurship. Sustained entrepreneurial action is proposed as necessary, but on its own, is an insufficient antecedent of entrepreneurial success.

4.2.1. Paradigm for research

The aim of the postpositive inquirer is to predict and control (Saunders *et al* 2007), and this is consistent with the subtext of entrepreneurship research that often seeks to predict and control resource investment in entrepreneurial opportunity recognition or exploitation. Whilst the inquiry aim may be consistent with the paradigm, it sits uncomfortably with what we know of the field as it is practised.

It is difficult to accept the epistemological post positivism stance as being the correct and only paradigm through which to consider entrepreneurship. Whilst there has been considerable interesting propositional knowledge developed about objectively measurable qualities of material objects', things' or its' theorists in the field are using a form of knowing that is akin to constructivism or participatory paradigms (Voros 2007). Often the propositional knowledge itself is developed from meaning-making discussions and experiences, rather than exclusively from the building blocks of prior knowledge, but it is still presented in the form of conceptual frameworks and propositions for testing. The lack of consensus amongst scholars in the field of entrepreneurship (Segal *et al.* 2005; Zhao *et al.* 2005) underscores the difficulty of the post positive paradigm to facilitate consensus or unequivocal outcomes in this domain.

Thus, the researcher is faced with a quandary – which research methodology to choose in order to apply a theory tested and validated in the post positive paradigm (Vallerand's passion construct, and Connor Davidson's resilience construct) to a subject (entrepreneurial passion) and a field (entrepreneurship) that do not lend themselves intuitively to that paradigm. Solutions come in the form of paradigm interplay, that is examining the phenomena through the lenses of several of the dominant paradigms and reviewing the collective results for insights (Howorth 2005).

The use of an integral paradigm, which recognises the plurality of perspectives, and does not confine the researcher to the use of a single tool, technique or method (Voros 2007), may overcome both the shortcomings of the post positive paradigm dominance and, in particular, the thorny issue of ontology (McMullen *et al.* 2006).

Therefore, in this research an integrated research paradigm is utilised where both inductive and deductive research approaches are used.

The inductive qualitative approach has several benefits. It enables a more informed decision about the choice of research design, the research strategies, and how to adapt to constraints (Saunders *et al.* 2007). Inductive investigation suits this research because there is little data or research available on passion, and so from a small sample of entrepreneurs it may be possible to build a theory about the role of passion in entrepreneurial success.

The deductive quantitative approach also has several benefits. It enables the search for casual relationships between variables, the use of segmentation variables as controls, replication through the administration of the structured survey to another population, and operationalisation of concepts to gain clarity of definitions (Saunders *et al.* 2007). This in turn enables the researcher to be independent of what is observed, and through sufficient sample size leads to generalisability (Saunders *et al.* 2007). Deductive research would follow naturally on from the inductive theory-building phase. Using quantitative techniques, the theory can be tested and modified as necessary.

However in this research the body of knowledge informing the variables of interest is limited in the case of passion, and seemingly new in the case of entrepreneurial obsession. Hence, this research is concerned primarily with the exploration of theory building and confirmation of these theories rather than the identification of causal relationships (Perry *et al.* 1998).

The argument is made for a mixed methods approach where inductive theory development is carried out in Study 1 and deductive confirmation of that theory carried out in Study 2 without claiming causality. This places this research thesis in the post-positive paradigm of realism in which the unobservable (measurement error and latent unobserved variables) can assist in building knowledge (Perry *et al.* 1998).

4.2.2. Statistical packages

This analysis used the statistical packages SPSS Ver 16.0, AMOS16 and MPlus Ver 6 to analyse the data and conduct structural equation modelling (SEM) to test the

relationships between the dependent and independent variables, and ultimately the theory proposed by the model. MPlus is an efficient statistical package where many items inform an unknown number of potential factors thus requiring many iterations of the EFA process before the best result consistent with the theory is derived. SEM allows for both confirmatory and exploratory modelling and is seen as a more powerful extension of the general linear model (Garson 2008).

In this chapter, the methodology used to identify and collect the data needed to explore the hypothesis outlined in Chapter 3, and to test the underlying theory in a full structural equation model, is described. The statistical methods used to analyse that data are discussed, and benchmarks used as cut-off criteria presented.

4.3. Development of the survey instrument

A single structured instrument was developed that included selected validated measures, demographic variables and items that comprised new constructs developed for this research. The survey instrument was administered on-line (See Appendix 6).

4.3.1. The on-line survey

Opinio Software developed by ObjectPlanet was used to create and publish the survey and maintain the data as it was collected. Opinio is a web based software tool that is platform independent and allows export of the data into SPSS for further analysis. The screen in the Opinio survey was linked to each discrete measure of the survey. Of the 117 questions, 94 required a completed answer before the participant could move to the next screen. Missed questions resulted in a message on the screen prompting the participant to complete the skipped question.

Opinio records the number of incomplete and completed surveys. However, the number of incomplete surveys is not a true indication of how many respondents attempted the survey. An individual could open the survey any number of times and in so doing generate a new Respondent ID each time, provided they had already completed any of the questions. Once a question in the survey is answered, a survey return ticket is issued if the participant leaves the survey before completing all questions. That individual could then only reopen the survey using the survey return ticket. Once data was entered into the survey, opening a new record was not possible if the attempt was made from the same IP address (that is, the same computer). Accordingly, the record for the completed number of surveys is an accurate reflection

of participant numbers, but the record for the incomplete number of surveys may reflect:

- Respondents who attempted the survey but did not finish it; and
- Respondents who opened the survey more than once without completing any questions.

A total of 424 unique Respondent IDs were generated by the Opinio Software. As indicated above this figure does not necessarily represent the number of individuals who opened the survey, rather it indicates the number of times the survey was opened.

4.3.2. Established measures

Two existing measures were used in the survey with only minor modifications made to the original scale (see below for explanation of scale modifications). To aid analysis each scale was allocated a code and each item within that scale a number. Thus each item has a unique abbreviated identifier. Visual inspection of the scales showed that items pertaining to the same construct were not co-located in the scale, thus reducing the possibility of order effects and response sets. See Appendix 7 for a table of final constructs, their measures, Cronbach's α and item number.

4.3.2.1. The passion scale

Renamed for this survey *My Current Business Activities* (cba) this 16-item measure assesses the harmonious or obsessive nature of passion (Vallerand *et al.* 2003). This measure is used to test the entrepreneurial passion experienced for the venture. Called *My Favourite Activity* by its developers and coded as *cba* for this study, the scale was modified by replacing each occurrence of the word “activity” with the word “business” to make it relevant to this study.

The scale was chosen because it was the only scale identified that assessed the presence and nature of passion and had been used in a number of empirical studies. It is a self-report measure that has been used on a range of samples drawn from fields such as gambling (Philippe *et al.* 2007), dramatic arts (Vallerand *et al.* 2007), digital gaming (Wang *et al.* 2008), and cycling (Vallerand *et al.* 2003).

The scale includes statements ranked on a seven point Likert type scale ranging from 1= *do not agree at all* to 7= *completely agree*. Whilst thinking of their business, venture participants were asked to rank each statement to indicate their level of agreement.

Items include statements such as “This business allows me to live a variety of experiences and this business is in harmony with the other activities in my life” for harmonious passion subscale. Obsessive passion subscale items include “I have difficulties controlling my urge to do my business activities” and “I have the impression that my business controls me”.

The Passion Scale has been shown to be structurally sound, theoretically valid, and highly reliable with minimum Cronbach's α of .71 and .85 for harmonious and obsessive passion respectively in a number of studies (Ho *et al.* 2011; Mageau *et al.* 2009; Vallerand *et al.* 2003; Wang *et al.* 2008) and has been adapted for use in other domains such as gambling (Philippe *et al.* 2007).

The items retained in each subscale are aggregated to produce a total score for that subscale.

4.3.2.2. Resilience scale

Renamed for this survey Life Adaptations and coded as *la*, this 25-item measure of positive achievement in the face of adversity is the proprietary scale known as the Connor-Davidson Resilience Scale (Connor *et al.* 2003). This measure determines the extent to which an entrepreneur displays resilience, which is suggested to contribute to sustained entrepreneurial action.

The scale includes items ranked on a five-point Likert type scale from *not true at all* (1) to *true nearly all the time* (5). Items include “I am able to adapt when changes occur”, “I think of myself as a strong person when dealing with life's challenges and difficulties”. Participants were asked to indicate how much they agreed with the statements as they applied to themselves over the previous month.

The scale was developed and tested on both normal and clinical populations, has good internal consistency (Cronbach's α for the full scale of .89), test-retest reliability, convergent and divergent validity (Connor *et al.* 2003). A subsequent test on a sample of 132 college students revealed that the scale had good construct validity (Campbell-Sills *et al.* 2007).

In a personal communication on 1 June 2009, scale co-author (Professor J. Davidson) recommend against separate scoring of the factor subscales on the grounds the factor structure varies with setting. Purchased for the purposes of this research from the authors there is a growing body of research in which the scale has been used (Ahern *et al.* 2006; Davidson 2009; Gillespie *et al.* 2009).

The items retained in the factor *resilience* are averaged to produce a scale score for use in hypotheses and model testing.

4.3.3. New constructs

As a result of Study 1 new constructs are proposed that require the development of scales to operationalise them.

The scale development process included the: identification and development of the constructs; selection or development of items that capture the nature of the construct in a clear, unambiguous manner; item scale development and pilot testing; and administration of the measure (Kline 1993; Saunders *et al.* 2007; Spector 1992). In multi-construct scales the items pertaining to one construct are separated from one another throughout the scale to reduce the potential for order effects and response sets.

Entrepreneurial Obsession (EO). Identified in the survey as Entrepreneurial Focus, these questions (for example. “thoughts of my business intrude into every activity in my life”; “wish I could stop thinking about my business”) are used to explore the proposed constructs of: entrepreneurial obsession (intrusive thoughts, difficult to control, unwelcome, internally attributed), anxiety generated by intrusive thoughts, action motivated by intrusive thoughts, intrusive thoughts imbued with great personal significance (53 questions). These intrusive thoughts have venture related content.

These questions have been developed from: Rachman *et al.*’s statement of what is necessary and sufficient for the presence of an obsession (Rachman 2003; Rachman *et al.* 1980); key confirmatory features (affect and motivating nature) (DSM-IV 2000); great personal significance (Salkovskis 1985); and comments made by entrepreneurs in Study 1. They are statements that are ranked from 1 (strongly disagree) to 5 (strongly agree).

These questions were included arising from an observed suggestion in Study 1 that an obsession may contribute to the explanation for the entrepreneur’s capacity to sustain entrepreneurial action.

Sustained Entrepreneurial Action (SEA). It is theorised that the presence of *sustained* entrepreneurial action, not just entrepreneurial action itself, is a precursor to entrepreneurial success. That is, if you do not keep at the business of your venture you are less likely to experience entrepreneurial success. *Sustained Entrepreneurial Action* is conceptualised as a two factor construct:

- SEABusiness suggests that entrepreneurial action, as captured by the objective business metrics, is sustained as evidenced by the growth indicators. Objective indicators used are: age of business, average annual turnover and growth in average annual turnover, number of employees and growth in number of employees, return on investment and growth in return on investment.
- SEATime seeks to capture the entrepreneurs' individual-level SEA. The amount of time the individual entrepreneur commits to working in/on the venture is used as evidence of sustained entrepreneurial action by the entrepreneur (number of hours per week the entrepreneur works on the business normally, -after hours", when on holiday and when sick).

These indicators are proxies for the existence of actions or decisions taken by the entrepreneur during the process of entrepreneurship, in part to generate wealth for the business.

These indicators were scored by giving each a ranking of 1 (low or worst result) to 4 (best or highest result). That is, the higher the final score the greater the amount of sustained entrepreneurial action. Appendix 8 lists the indicators and the ranking attributed to each grouping of responses.

Eleven questions were developed to probe these two factors (SEATime and SEABus).

Entrepreneurial Success (ES). The achievement of entrepreneurial success varies for each individual based on his or her own goals and worldview. The results of Study 1 suggest that the entrepreneurs believe they have achieved success when others recognise their achievements, they achieve their own business and personal goals, and/or when the venture is sustainable beyond their involvement.

The 10 questions designed to identify entrepreneurial success were derived from the responses of the entrepreneurs in Study 1, modified or interpreted based on a review of the literature, and discussions with business academic colleagues.

4.3.4. Segmentation variables

Demographic data is used to develop control variables (for example. -My gender is....", -My age group is....", -My highest level of education is..."), and criteria for inclusion in this research (-I have this business because I...I owned__% of this business when operations commence").

This measure derives its questions from commonly accepted demographic detail and

the researcher's professional knowledge of the implications of business ownership (Wilson *et al.* 2009).

4.3.5. Pilot activity

Prior to the pilot activity, two colleagues provided feedback on layout, grammar, structure, and content of developed items by completing the survey instrument informally. Consequently, a number of minor changes were made to improve the clarity of questions and the readability of the instrument.

The instrument was then read and completed by a pilot group of five professionals and experts in their fields to confirm content validity and establish that the instructions and content were understandable; the questions developed by the researcher appropriate for entrepreneurs; and the formats of the survey (online) readable. The pilot members comprised:

- One academic psychologist (professor) with expertise in test construction
- One founding entrepreneur with an ongoing venture of more than 25 years duration and a turnover greater than \$20m per annum, who had recently sold down the majority of his ownership to a large international conglomerate
- One psychologist managing a large department with a substantial research focus
- One market researcher and academic
- One ex-academic who has moved into small business consulting and then business ownership.

The pilot was exploratory and took the form of informal administration of the schedule, completed in his or her own time, with subsequent discussion with each pilot participant as appropriate. It took on average 26.8 minutes for the survey to be completed by the pilot participants, with individual results ranging from 22 minutes to 31 minutes. As a consequence of the feedback minor amendments were made to the newly developed measures and readability of the survey as a whole.

4.3.6. Ethics approval

Ethics approval was received prior to commencement of the pilot study (see Appendix 9). Subsequently, and in response to difficulties in gathering a sample of participants, minor amendments to the covering letter/email were made in order to tailor the

covering letters/emails to the new recruitment situation (see Recruitment below). Each amendment was submitted to, and received, ethics approval. These approvals are not included in this report as they do not materially or substantively change the approach to, or materials provided to, potential participants.

The introductory section of the survey instrument comprised the informed consent document and contained details of the project research and justification, university affiliation, ethics approval process, contact details for any concerns or further information, and research team. It also outlined the process for confidentiality and secure storage of data.

4.3.7. Change of title

In May 2011 an application for a change of title to the thesis was submitted and subsequently approved. The working title of “Passion, Knowledge and Uncertainty in Successful Entrepreneurial Action” closely reflected the conceptual framework of Study 1. However, Study 1 results gave rise to a change in focus. Hence the title was changed to better reflect the scope of the thesis as a whole.

4.3.8. Unit of analysis

For the purposes of this study an entrepreneur is an individual who discovered, evaluated and exploited an opportunity to create future goods and services (Shane *et al.* 2000). As discussed in Section 2.4.2 the criteria for classifying a person as an entrepreneur, and accordingly for including a respondent in the sample frame, were:

- Has founded a for-profit business (Kirzner 1997; Schumpeter 2004),
- From an opportunity he or she identified (Casson *et al.* 2007; McMullen *et al.* 2006),
- In which he or she holds (or held) a majority ownership (Brandstätter 1997).

A mix of self-selection sampling and convenience sampling was used to recruit entrepreneurs for this research. Initially self-selection sampling was attempted via organisations with entrepreneurs as their members. However, the difficulty of obtaining a sample through this means lead to the use of convenience sampling. Non-probability sampling techniques, self-selection and convenience sampling are easily accessible, time and cost effective, and appropriate for research such as this where the research is

exploratory in nature and a sampling frame cannot be specified because of the heterogeneous nature of entrepreneurship (Davidsson 2007; Saunders *et al.* 2007).

4.3.9. Recruitment procedures

The collection period commenced in November 2009 and closed in July 2010 and produced 412 surveys from the 3,585 people approached (11% response rate). It is possible that the population participating in this study are cooperative and willing entrepreneurs. Thus, the non-response rate is likely a function of people's general disinterest in participating in surveys, rather than a function of the relationships under study. However, it is acknowledged that there is no mechanism by which this assumption can be examined (Cohen *et al.* 1983) and the reasons for non-response to the survey are unknown.

Of these 412 surveys, 223 (54%) contained enough complete data, and met the criteria for an entrepreneur, and were retained in the sample final (6% of those approached).

The sample comprised entrepreneurs from a cross section of industries who volunteered to participate in the project. The target number of completed surveys was 200 because SEM was planned for the analysis phase, and SEM is generally understood to suit large samples ($n=200+$), but is also an acceptable form of analysis for medium sized samples ($n=100$ to 200) where the model to be tested is not complex (Kline 2005).

Initially a collection period of six weeks was planned. Entrepreneurs were sought for participation via professional and industry networks and associations over this period.

Recruitment did not go according to plan. The organisations initially targeted as most likely to participate and have entrepreneurs as part of their population (Australian Graduate School of Entrepreneurship Alumni, Ernst & Young Entrepreneur of the Year Alumni, CPA Society members, and Churchill Club) were willing to distribute a call for participation via their email communication channel, but only once. Response was low, with approximately 3,260 addressees receiving the material, but only 28 completed surveys were returned (0.9% of those polled).

Consequently, the mechanism for recruiting entrepreneurs for the survey was amended in an effort to secure the required quantity of completed surveys. However, it was not enough to simply increase the number of suitable organisations approached. Based on the return rates above, a sample size of approximately 23,300 would be required to generate 200 responses. Such a large sample coupled with a low response rate

(0.9%) would imply lack of representativeness in the final sample (Saunders *et al.* 2007).

Therefore, strategies were required that would generate the desired total return quantity of 200 without ramping up the sample size. The new strategies used were:

1. To seek additional organisations and networks who would distribute the invitation to participate in the survey to their constituents. Over the period January to March 2010 seven additional organisations and/or networks were asked to distribute the survey to their members. Only one agreed, resulting in an e-mail out to approximately 89 members generating 13 surveys (15% response rate).
2. To ask people of influence to promote the invitation to people in their networks. Four influential people were responsible for distribution of the invitation to participate in the survey to approximately 412 respondents who returned 82 surveys (20% response rate).
3. To cold call entrepreneurs and ask them individually to participate in the survey. The details of entrepreneurs were sourced from a total of 24 e-lists, on-line newsletters, entrepreneur related websites, on-line government entrepreneurship-related directories, and the websites of venture capital firms. The entrepreneurs so identified were e-mailed an invitation to participate in the survey (see Appendix 10). The total number of entrepreneurs cold called was used as the sample size. This strategy produced 236 surveys out of 608 approaches (39% response rate).
4. To use personal contacts. Sixteen individuals personally known to the researcher as entrepreneurs were invited to participate in the study. This group comprised eight of the entrepreneurs who participated in Study 1, and eight personal contacts. Of this group, seven completed a survey (44% response rate).

4.3.10. Database

Data from the on-line survey was entered directly into the database. There was a total of 424 ID Respondents generated in Opinio, that is 424 cases of both complete and incomplete data. The database was exported into Excel and this file became the file for use in SPSS for recoding, data cleaning and subsequent analysis.

4.4. Procedure

The scales and individual items were examined for normality and missing values. The scales and constructs were subjected to checks for unidimensionality, reliability and validity; new scales were subjected to dimension reduction through EFA, or their factors analysed with CFA as appropriate. Once the variables and constructs were confirmed, scale scores were derived and used in an SEM to test the proposed hypotheses.

4.4.1. Missing values analysis

Data can be missing at random (MAR), not missing at random (NMAR) or missing completely at random (NMCAR). Understanding the nature of missing data is important. Missing data can affect the precision of calculated statistics through the absence of anticipated information; can undermine the assumptions used to determine the statistical procedures applied; and lead to misleading results if cases with missing data are systematically different to cases without missing values (SPSS 2007). Missing data can be:

- Missing at random (MAR) – missing observations on variable x differ from observed scores on that variable only by chance (Cunningham 2010a).
- Missing completely at random (MCAR) - missing observations on variable x differ from observed scores on that variable only by chance AND the presence versus absence of data on x is unrelated to any other variable (Kline 1971).
- Not missing at random (NMAR) cannot be ignored (Cunningham 2010a). Systematic reasons for the omission of these cases or variables may bias the results, and the reason for omission may be informative to the research.

Using SPSS function Missing Value Analysis (MVA) the nature of missing data (either systemic or random) was determined in preparation for SEM analysis. Maximum Likelihood (ML) estimation is based on the assumption of multivariate normality in the observed variables (see below for discussion on multivariate normality). As a method of estimation to compute parameter estimates and related statistics it provides estimates that are “consistent, asymptotically unbiased, asymptotically efficient, and asymptotically normally distributed”; as well as providing a fitting function that is scale invariant and estimates that are scale free (Bagozzi 1996).

Cohen *et al.* (1983) suggest that missing data of up to 10% is acceptable, and could be retained in the dataset without affecting reliability. Other studies have shown that up to 25% of data may be missing and in such cases an expectation-maximisation (EM) algorithm will deal satisfactorily with the missing values (Cunningham 2010a).

4.4.2. Missing data imputation

An Expectation Maximisation (EM) algorithm was used to examine and predict the values of missing variables. In EM, normal distribution for the data is assumed and the other variables relevant to the construct of interest are used to predict the values for the missing variables in a regression model (Cunningham 2010a; Graham *et al.* 1997).

EM method of data imputation is preferred to other techniques such as listwise deletion, pairwise deletion or mean substitution because it is more consistent and accurate in predicting parameter estimates and useful data is not deleted (Graham *et al.* 1997). Furthermore, EM can be used to examine data that is not MCAR (SPSS 2007). Within SPSS, the EM process has the added benefit of generating Little's MCAR χ^2 Test Statistic, which can be used for testing whether values are MCAR. If the p -value is less than .05 the data is NMAR (SPSS 2007). Accordingly, EM algorithm is used to impute missing values for all respondents in this research.

The statistics package SPSS 19 was used to conduct the missing data imputation process using an EM algorithm. EM estimates the means, covariances and Pearson correlations using a twostep iterative process; the E step computes expected values conditional on the observed data and the current estimates of the parameters; the M step uses E step computed values to calculate the maximum-likelihood estimates of the parameters (SPSS 1989). Little's MCAR χ^2 Test is used to determine whether or not missing data can be assumed to be missing at random (MCAR).

To conduct the EM process, each scale was subjected to the EM and univariate statistics, EM Means, EM Correlations, EM Covariances, and Little's MCAR χ^2 Test were produced. Where Little's MCAR χ^2 is not significant at $p < .001$, the missing data may be assumed to be MCAR. This conservative alpha is chosen as a test for MCAR because EM imputation is valid for MAR; therefore a more rigid requirement for the alpha will distinguish MAR from MCAR (Cunningham 2010a).

4.4.3. Formative & reflective measures

To conduct analysis using SEM requires multivariate normality, that is:

- all univariate distributions are normal
- the joint distribution of any pair of the variables is bivariate normal
- all bivariate scatterplots are linear and homoscedastic (Kline 1971).

Therefore, all data was examined for normality before being subjected to SEM analysis.

However, the variables of interest in this research were developed from either formative or reflective indicators. Conventional techniques for assessment of reliability and validity (factor analysis, Cronbach's alpha, mean inter-item correlation) are not suitable for constructs developed from formative indicators (Bagozzi 1996). This section details the techniques used to determine the normality of the data for formative and reflective indicators.

Two existing measures were used in this research: The Passion Scale (Vallerand *et al.* 2003) and Connor-Davidson's Resilience Scale (Connor *et al.* 2003). These scales comprise statements that reflect the latent construct. As such, they were analysed using techniques suitable for reflective measures. The new constructs (*sustained entrepreneurial action* and *entrepreneurial success*, and the 7 factors hypothesised to comprise the proposed *entrepreneurial obsession*) were considered to determine whether they are formative or reflective in indicators of their hypothesised construct.

Formative indicators are appropriate where the latent variable is not based on reflective indicators (Diamantopoulos *et al.* 2001). A reflective indicator is one where the latent variable is the effect of the observed variable, whereas formative indicators are observed variables assumed to cause a latent variable (Bollen *et al.* 1991). It is critical to determine the casual priority of an indicator to understand if it is the cause of (formative), or effect of (reflective), the latent variable, and temporal considerations may assist in distinguishing between the two (Bollen *et al.* 1991).

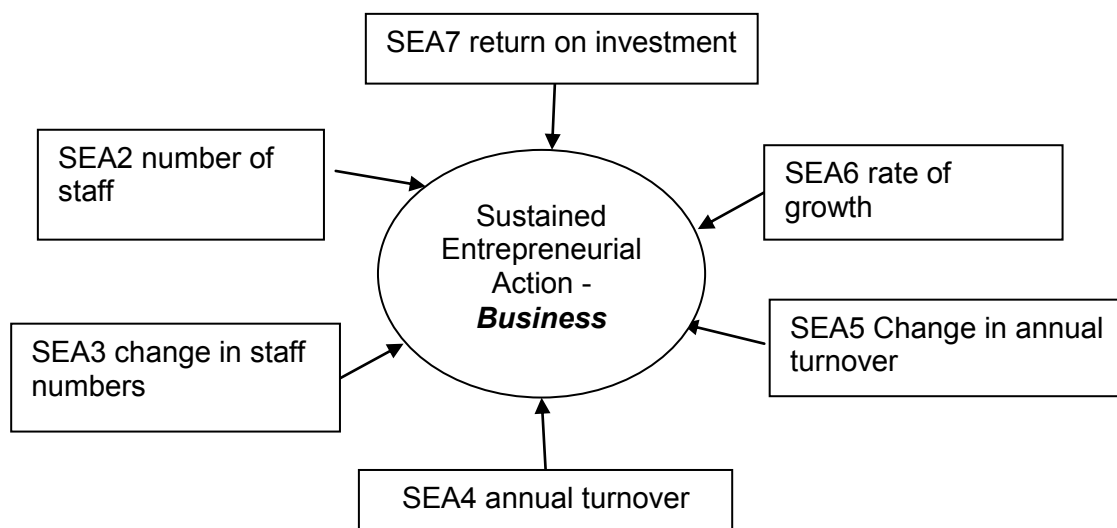
In the case of the construct *sustained entrepreneurial action* (SEA) certain business indicators and indicators of sustained business activity are used as evidence of the presence of SEA, that is these indicators are proxies for the presence of SEA. Do the business indicators cause SEA, or do they reflect SEA?

Bollen *et al.* (1991) suggest that we consider as an example sex and race as indicators of discrimination. They suggest that since the presence of discrimination (latent

variable) does not change the observed variables of sex or race, these two are cause (formative) indicators of discrimination. Similarly, components of gross national product (observed variables) are cause indicators of the value of the nation's goods and services (latent variable). In comparisons, attitudes are typically effect indicators where the latent variable causes the presence of the indicator. For example, a person's self-esteem (latent variable) is not caused by how they score themselves on an observed variable (for example, feelings of self worth) but self-esteem does cause the amount of the observed variable (feelings of self worth) indicated. Nor does the temporal act deciding an amount of feelings of self worth cause the presence of self esteem, whereas indicators of gross national product do temporally precede the value of the nation's goods and services (Bollen *et al.* 1991).

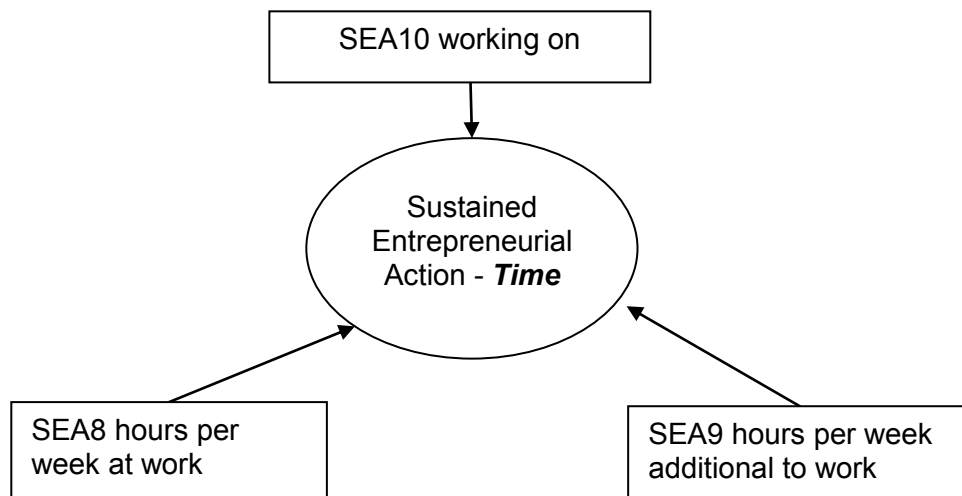
Using similar logic, it can be suggested that the latent variable SEA is formed by a combination of business indicators and indicators of the amount of time the entrepreneur invests in the venture. Like gross national product, business & time commitment indicators (that is, the observed variables) do cause the presence of SEA. SEA *does not* cause the presence of the business indicators (See Figure 4-2 and 4-3 for items included in these constructs). Furthermore, this latent variable is the sum of the formative indicators; if one formative indicator is removed it is no longer the same latent construct (Bollen *et al.* 1991; Diamantopoulos *et al.* 2001).

Figure 4-2 Formative Construct SEABusiness



Source: Adapted from Bollen et al. 1991

Figure 4-3 Formative Construct SEATime



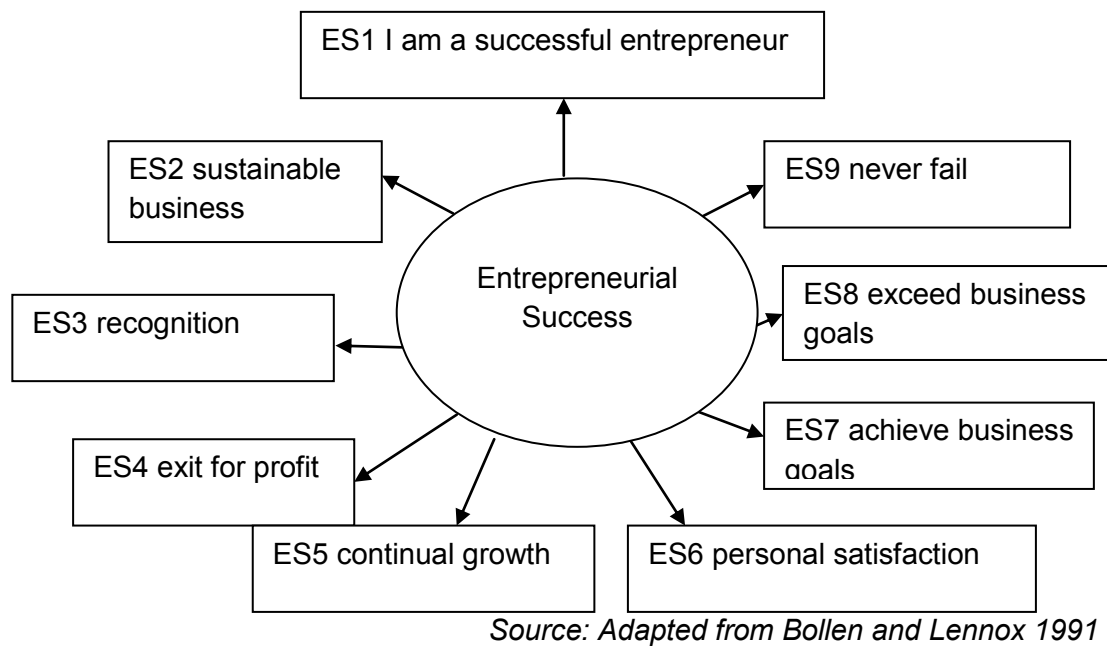
Source: Adapted from Bollen et al. 1991

In the case of *entrepreneurial success* (ES) the statements made by the successful entrepreneurs interviewed in Study 1 were used as the observed variables (see Figure 4.4). That is, attitudes of the respondents indicate the presence of ES and these attitudes reflect, not cause, the presence of ES (latent variable).

Thus reflective indicators are suitable for the latent variable ES and because these indicators measure the same thing they should covary at a high level if they are good measures of the underlying variable (Bagozzi 1996).

Similarly, the constructs *intrusive thoughts*, *unwanted thoughts*, *difficult to control thoughts*, *thoughts internally attributed*, *thoughts generates anxiety*, *thoughts imbued with great personal significance*, *thoughts motivate action* are reflected in their the indicators and were analysed as reflective measures.

Figure 4-4 Reflective Indicators of Entrepreneurial Success



4.5. Data screening and assumption testing

The next sections describe the techniques applied to screen the data and test the assumptions for each scale, including the rationale underlying the choice of statistical technique and package.

4.5.1. Reflective measures

In this research, composite scales were used as reflective variables in the models tested. Uni-dimensionality for each indicator in the composite scale were examined.

SEM analysis requires data that is normally distributed. That is, for univariate normality the observations have approximately normal distribution and the variance of observations is approximately the same for any condition; and for multivariate normality the additional requirement is that these distributions have a common covariance matrix (Todman *et al.* 2007). Univariate normality is established by examining skewness, kurtosis and outliers in the data that comprises the individual variables. Multivariate normality is established by examining Mardia's coefficient.

4.5.1.1. Univariate normality

Frequency analysis was used to examine normality for each item in the scale or subscale. Means, minimums and maximums were used to confirm that values fall within admissible ranges for miscoding of items and correct re-coding of reversed items.

The rule of thumb used in this research to identify the presence of outliers is data more than 3 standard deviations beyond the mean. Such data was considered for removal or transformation (Kline 1971). In the data within this research, no such outliers were evident.

Skewness is a measure of the shape of the distributions of scores around the mean (Kline 2005), and absolute values exceeding 2 are indicative of moderately non-normal distribution (Curran *et al.* 1996).

Kurtosis is the measure of how much mass the tails of a distribution have (Bagozzi *et al.* 1996), absolute values exceeding 7 are indicative of moderately non-normal distribution (Curran *et al.* 1996), and consensus seems to be that values greater than 8 are “extreme” (Kline 2011). Scatterplots are generated to examine linearity and bivariate analysis.

4.5.1.2. Multivariate normality

Multivariate normality was examined using Mardia's coefficient for multivariate kurtosis. Mardia's coefficient for normal data is 0, a value of 3+ is seen to be of some concern (Mardia 1975). For the purposes of this research, multivariate normality was exceeded if Mardia's coefficient was greater than 3, in which case the data was treated as possibly non-normal. For non-normal data AMOS16 was used to generate a Bollen-Stine bootstrap p-value from 2000 bootstrapping samples, which generated a chi-squared distribution that corrected for departures from multivariate normality (Cunningham 2008). Adjusted Bollen-Stine p-values >.05 indicate the model fits the data well (Bollen *et al.* 1992).

4.5.1.3. Scale reliability – reflective measures

Reliability is the consistency of a set of measurements and was assessed using Cronbach's α for continuous data. This test generally measures equivalence, that is the coefficients predict the correlation of the test with a hypothetically equivalent test

(Cronbach 1947). Underlying the reliability coefficient is the assumption that a test score has two components, a true score and a variable error, and the reliability coefficient is the estimate of the percentage of total variance that is true variance and not due to error (Kuder *et al.* 1937). Reliability is the characteristic of a test possessed by virtue of the positive intercorrelations of the items composing it" (Kuder *et al.* 1937).

There are differing views as to the best benchmark to use to indicate the internal consistency of a scale. Establishing that each item in the scale is measuring the same underlying concept is determined by examining the item-to-total correlation coefficient, and removing those with a low coefficient ($<.3$) (de Vaus 1991). A commonly accepted benchmark indicating that the whole scale is reliable is an alpha of $>.70$ (Nunnally *et al.* 1994; Spector 1992). However, the number of items in a scale has been shown to affect the alpha.

Cortina gives the example of a 3-item scale with $\alpha = .80$, an average inter-item correlation of $.57$, and compares it to a 10-item scale with $\alpha = .80$ and average inter-item correlation of $.28$. This suggests that where many items are pooled, internal consistency estimates are relatively large and that a benchmark for adequacy of α should be considered in the light of the average inter-item correlations. He further demonstrates that in a unidimensional scale an average item intercorrelation of $.50$ yields alphas that are acceptable by convention (that is, greater than $.75$) regardless of the number of items (Cortina 1993).

Briggs *et al.* (1986) suggest that scales of 10 items or less are susceptible to reporting low alphas. When scales with a low number of items generate a low alpha it is advisable to report the inter-item mean. Inter-item mean correlations of between $.20$ to $.40$ indicates an optimal level of homogeneity between scale items; $>.50$ suggests redundant items and $<.10$ suggests it is unlikely that a single score could adequately represent the complexity of the items (Briggs *et al.* 1986).

Cronbach's α determines the degree of internal consistency of the items in a scale, that is the degree to which response are consistent across the items within a single measure (Kline 1971). All reflective scales used in this research, both existing and developed, were subjected to reliability testing, because reliability is a function of both the scale and the population to whom it is administered (Dawis 1987). Scales that are internally consistent should display little variation between reliability scores when used on different samples (Spector 1992).

For the purposes of this research unidimensional scales with an $\alpha >.70$ are acceptable. For unidimensional scales with an $\alpha <.70$, the inter-item mean correlation was

examined and considered in making a judgement as to the reliability of the scale. Low alphas are particularly likely for scales with a low number of items; hence in such cases inter-item means between .20 and .40 will indicate acceptable reliability (Briggs *et al.* 1986). Items with a low item-to-total correlations ($<.30$) (Nunnally *et al.* 1994) were removed from the scale.

4.5.1.4. Scale validity – reflective measures

Validity refers to the soundness of the inferences based on the scores, that is whether the scores adequately measure what they are supposed to measure (Comrey 1988). It is determined through the proportion of criterion variance that is predicted by the scale (Dawis 1987). The following tests of validity were used in this research.

- Construct validity is present when the measure conforms with theoretical expectations (de Vaus 1991). Construct validity is not directly observable and can only be measured indirectly through observed scores (Cook *et al.* 1979). Construct validity was confirmed by examining the correlations loading to the proposed factor in the light of theory. In this research, correlations $>.32$ were the minimal acceptable to indicate construct validity (Tabachnick *et al.* 2006).
- Content validity is established if test items are representative of the domain they are supposed to measure; and expert opinion can be used to establish if item content is representative of the nominal definition of the concept (de Vaus 1991). In this research, content validity has been confirmed for the existing measures through their acceptance and use in the literature (Connor *et al.* 2003; Vallerand *et al.* 2003). For the new scales (entrepreneurial focus, SEA and entrepreneurial success) content validity relies on the items having been developed from known sources such as peer reviewed articles (reflecting the opinion or judgement of experts in the field), the statements by practitioners (the entrepreneurs interviewed in Study 1), and then having been reviewed by a panel of experts. Content validity is difficult to achieve as demonstrated by the observation that many social science concepts in use do not have an agreed validity (de Vaus 1991).
- Criterion validity, the extent to which a measurement correlates with an external criterion of the variable of interest, is established by use of an external standard against which the measure can be evaluated, and uses validity coefficients (Dawis 1987). In this research criterion validity has been established for the

existing scales by evaluation against other measures (Connor *et al.* 2003; Vallerand *et al.* 2003).

- Convergent validity assures that the measures of the same trait are statistically related to each other and have relatively small error and unique components (Wothke 1996). Thus it is the degree to which a measurement scale correlates with other measures of the same variable. This can be established if factor loadings of an SEM measurement model for both measures are statistically significant (Anderson *et al.* 1988), and intercorrelations are at least moderate in magnitude that is, $>.40$ (Chin *et al.* 2008).
- Discriminant validity is established if a purported measure of one trait is not too highly correlated with measures of different traits (Wothke 1996). For example, if $r_{xy} = .90$ variables x and y do not measure different constructs, but if $r_{xy} < .20$ they clearly do measure different constructs (Todman *et al.* 2007). Structure and pattern coefficients can be used to determine discriminant validity. Discriminant validity is demonstrated when the structure coefficients of the items reflecting a latent variable exceed the structure coefficients of the other items in the measurement model (Thompson 1997).

4.5.2. Development of measurement models – new constructs

Scales used to explore proposed constructs derived from information gathered in Study 1 and reviews of the literature are:

- *Entrepreneurial Obsession*, comprising 7 subscales,
- *Entrepreneurial Success*, comprising one scale,
- *Sustained Entrepreneurial Action*, comprising two scales.

A scale is a collection of items, the responses to which are scored and combined to yield a scale score (Dawis 1987). The scales developed for this research are subject centred scales, where the individual differences of the respondents are reflected in terms of their standing along the scale's dimension (Dawis 1987). These scales were constructed to provide quantitative data that is sought for the variable of interest, as no other suitable instrument had been found at the time the survey measure was constructed. The scales comprise individual questions, the scores of which were summed to give a scale score. Scale scores were developed to indicate the "position" on the abstract dimension into which the individual questions were intended to tap (de Vaus 1991).

Evidence of construct validity comes from the use of responses from Study 1 combined with relevant literature to construct items, feedback on and modification to the scales from an expert panel, followed by EFA to determine the underlying factors (Dawis 1987; Kline 2000; Spector 1992; Todman *et al.* 2007).

Once a reflective scale, fitting both the theory and the data, is obtained for a factor it is subjected to Cronbach's α to confirm item reliability (Dawis 1987). Validity was examined using pattern and structure coefficients. Pattern coefficients are the direct correlations between the items and factors, and structure coefficients are the correlations between items and factors using direct and indirect loadings (Cunningham 2008). Inspection of each item clearly displayed which factor the item loaded on, and where it did not, providing evidence of discriminant validity between the constructs (Thompson 1997). The formative scales for SEA are discussed below.

Scale scores were derived by averaging across all remaining items in the scale (de Vaus 1991).

4.5.3. Formative measures

An index is derived from a linear sum of measurements, and is termed a formative indicator where the measure produces the construct (Bagozzi 1996). Therefore, there is no homogeneity of items or unidimensionality, the latent construct is composed of unrelated items termed causal indicators and is a function of the measurements. The interest is in how the index functions as a predictor of predicted variable. Reliability and construct validity are not meaningful and need to be determined by how well the index relates to measures of other variables (for example, test-retest reliability; criterion related validity).

4.5.3.1. Validity and reliability – formative measures

Conventional methods of assessing index validity and reliability (factor analysis and assessment of internal consistency) are inadequate for formative indices (see Diamantopoulos *et al.* 2001 for a detailed review). Formative indicators are comprised of a score from a linear sum of measurements; therefore the individual indicators need not correlate (Bagozzi 1996). Thus, the four issues identified by Diamantopoulos *et al.* as criteria to determining the quality of the construction of a formative index are: content specification, indicator specification, indicator collinearity, and external validity (Diamantopoulos *et al.* 2001):

Content specification. It is critical to scope out the specific domain of content that the index is developed to capture. Failing to consider a part of the construct may lead to exclusion of relevant indicators for that construct; as described above the construct is the same as *all* its formative indicators.

Indicator specification. Indicators must be sufficiently inclusive to specify the latent variable as described under the content specification.

Indicator Collinearity. Sample size and strength affect the stability of indicator coefficients (γ_n), because formative indexes are based on a multiple regression ($\eta = \gamma_1x_1 + \gamma_2x_2 + \dots + \gamma_nx_n + \zeta$). Low multicollinearity is desirable as it enables use of the magnitudes of the indicator coefficients to be used as validity coefficients, and indicates that each x in the index is not highly correlated and therefore not redundant in the index.

External Validity. Determining how best to confirm internal consistency between indicators is the subject of conceptual and methodological development (Diamantopoulos *et al.* 2001). One suggestion is to correlate each indicator to another theoretically defensible variable, external to the index, and retain those indicators significantly correlated (Diamantopoulos *et al.* 2001; Spector 1992).

4.5.4. Dimensionality reduction

Cattell (2008) observes that human language, which encodes human behaviour, traits and attributes, is comprised of many dimensions. Techniques have been developed to reduce these dimensions into patterns that reveal a single functional unity, that is to reveal the underlying unitary structures and relationships between those structures.

Factor analysis was devised as a dimensionality reduction technique that explains the covariation or correlations between many observed variables and a single latent variable (Spearman 1904). The technique has evolved into one that can also reveal more than one underlying explanatory latent variables (Bollen *et al.* 1991).

In this research, Exploratory Factor Analysis (EFA) as used to reduce the dimensionality of the new constructs and Confirmatory Factor Analysis (CFA) was used to validate existing theoretical models/constructs.

4.5.4.1. Exploratory factor analysis

EFA was used to give insight into the structure of a dataset and to reduce its dimensionality (Todman *et al.* 2007). It is appropriate in the early stages of research as a tool for consolidating variables for use in generating hypothesis about underlying processes (Tabachnick *et al.* 2006). Before analysis: a detailed model relating the latent to the observed variables is not specified; the number of latent variables is unknown; latent variables typically influence all observed variables; measurement errors are not allowed to correlate; and under-identification of parameters is common (Bollen *et al.* 1991). EFA is associated with theory development, not theory testing (Tabachnick *et al.* 2007).

EFA is well suited to the factors for which relationships and effects on and between the latent variable and observed variables are unknown. Principal Components Analysis (PCA) and Principal Axis Factoring (PAF) are used in EFA to summarise patterns of correlations among observed variables, reduce a large number of variables to a smaller number of factors, and provide an operational definition via a regression equation for an underlying process (Tabachnick *et al.* 2006).

PCA reduces data dimensionality by extracting and ordering to a new set of variables the uncorrelated principal components of that data whilst retaining most of the variation of the original variables (Jolliffe 2002). The principal components extracted are ordered, with the first component extracting the most variance (Tabachnick *et al.* 2006). A widely used technique in the literature, particularly when reducing items to a composite score, these components are called “factors” in the psychological literature (Jolliffe 2002). The components will be called factors in this research because the objective sought by using both PCA and factor analysis is to identify underlying simple structures to use in hypothesised and explanatory constructs.

Principal Axis Factoring (PAF), or common factor analysis, is the second method of EFA extraction used in this research. Factors are based on only common variance, excluding specific and error variance, and estimates of communalities are used (Tabachnick *et al.* 2006). When PCA generates communalities greater than 0.05 in the reproduced correlation matrix, PAF is preferred (Cunningham 2008). However, PAF has the limitation of not providing a goodness-of-fit statistic.

In this research, EFA was conducted on the new scales (7 subscales for Entrepreneurial Obsession, and one scale for Entrepreneurial Success) to assist in identifying the underlying factors. These measures were developed by examining

relevant literature and combining those insights with the responses obtained in Study 1. As such, the items in these scales were theorised to reflect their proposed constructs (Dawis 1987).

Factor scores for these scales were derived by summing the scores of variables that load highly on each factor (Tabachnick *et al.* 2006) and taking the average across all items.

In this research, SPSS ver16 and MPlus were used to conduct EFA. Key benchmarks used were:

- Kaiser-Meyer-Olkin (KMO) indicates the proportion of variances amongst variables that might be common, and therefore indicate underlying factors. Typically the higher values are accepted as indicating the suitability of the data for factor analysis, with some authors suggesting values above .60 are required for good factor analysis (Todman *et al.* 2007). Kaiser refined the index, suggesting that anything in the .90s was marvellous, in the .80s meritorious, in the .70s middling, in the .60s mediocre, in the .50s miserable and below .50 unacceptable (Kaiser *et al.* 1974).
- Bartlett's Test of Sphericity is used to test the hypothesis that the correlations in a correlation matrix are zero (Tabachnick *et al.* 2007). Thus, if the chi-squared is significant at $p < .05$ (Cunningham 2008) the intercorrelation matrix is an identity matrix and common variance exists amongst the variables (SPSS 16) suggesting the presence of a factor. Because this test is notoriously sensitive it is usually only recommended when there are fewer than 5 cases per variable (Tabachnick *et al.* 2007; Todman *et al.* 2007). Despite this Bartlett's Test of Sphericity is typically included in reports of EFA analysis.
- Communalities greater than one indicate a problem with the proposed solution, and communalities with very low values indicate the items are unrelated to others in the set (Tabachnick *et al.* 2006).
- A combination of methods is used to identify the number of potential factors revealed by the data including the presence of eigenvalues greater than 1 (Tabachnick *et al.* 2006). Scatterplots are used to examine the number of factors suggested by the eigenvalues (Cunningham 2008; Tabachnick *et al.* 2006).
- Total variance explained of between 40% to 50% reflect an adequate factor structure for self-report scales (Gorsuch 1983).

- Correlations in the residual matrix are small, indicating a close fit between the observed and reproduced matrices (Tabachnick *et al.* 2006).
- Orthogonal rotation is used, to ensure the factors emerging remain uncorrelated with each other (Tabachnick *et al.* 2006).
- Loadings in the pattern matrix of $>.71$ are considered excellent, $.63$ very good, $.55$ good, $.45$ fair, $.32$ poor (Comrey *et al.* 1992). In this research the minimum used to indicate a relationship between the observed variable and the factor is $>.32$ (Tabachnick *et al.* 2006). Items that load on more than one factor at $>.40$ will be scrutinised for a lack of factor purity (Todman *et al.* 2007), and if no justification for their retention exists, will be removed.
- Ideally an extracted factor requires at least three items to load onto it (Tabachnick *et al.* 2006). Where a proposed factor has only two items, those items should be highly correlated with each other and uncorrelated with other items otherwise the factor is poorly defined (Tabachnick *et al.* 2007).
- Discriminant validity is confirmed by the presence of a clear distinction between the items comprising the respective factors (Cunningham 2010b) as revealed by an examination of the correlations in the pattern and structure matrices (Thompson 1997). The correlations in the pattern matrix are the direct correlations between the items and the factors; the correlations in the structure matrix are the product of the direct loadings of the respective item and factors with the indirect effect of an item on a factor taken from the factor correlation matrix (Cunningham 2008).

4.5.4.2. Confirmatory factor analysis

CFA is used to confirm factors hypothesised to be present within existing measurement scales, and is part of the SEM suite of techniques. Before analysis: a model is constructed; the number of latent variables is set; whether a latent variable influences an observed variable is specified; some direct effects of latent variables on observed variables are set to zero or another constant; measurement errors may correlate; covariance of latent variables can be estimated or set to any variable; and parameter identification is required (Bollen *et al.* 1991). CFA is associated with theory testing, not theory development (Tabachnick *et al.* 2007).

In this research AMOS16 was used to conduct CFA on one-factor congeneric models. Poorly fitting models were respecified by removing items, taking into account:

standardized residual covariance matrix, sample correlations, item loadings and modification indices.

- Standard residual covariances >1.0 suggest the model does not explain the corresponding sample correlation very well, but the number of acceptable residuals >1.0 in a model is unknown (Kline 2011). For this research, multi factor cluster models use standard residual covariances benchmark of > 3.29 (that is, p value associated with z scores of .001), and CFA will use standard residual covariances benchmark of >2.58 (Cunningham 2008).
- Squared multiple correlations (SMC) are used to protect against multicollinearity and singularity. SMC that are quite low suggest that the item does not contribute to the overall measurement of the factor (Cunningham 2008). Removal of items is justified by examining standardised residuals $>.33$ (for multicluster measurement models) and $>.20$ (for one-factor congeneric models), then removing the item with the lower SMC (Cunningham 2008).
- If SMC is high ($>.90$) the variable may be too highly related to others and multicollinearity may be present. If SMC is 1, singularity applies and the item may be redundant (Tabachnick *et al.* 2007). Sample correlations also provide evidence of potential multicollinearity. Intercorrelations among variables can be so high that certain mathematical operations are either impossible or unstable because some denominators are close to zero. It occurs when what appear to be separate variables actually measure the same thing (for example correlations $>.85$) (Kline 2005). Multicollinearity and singularity are dealt with by removal of redundant items or by combining items into composite variable.
- Item loadings used are generally accepted benchmarks for correlations: .80+ indicates a strong linear relationship; .50-.79 indicates a moderate linear relationship; .20 to .49 indicates a weak linear relationship, less than .20 indicates virtually no linear relationship (Cohen 1988). Items loading at $>.40$ are retained in this research (Bagozzi 1996).
- Modification indices estimate the amount by which the overall model chi-square statistic would decrease if a particular parameter was freely estimated (Kline 2011). Modification indices >10 are used to suggest model changes in this research (Cunningham 2008).
- A CFA model should explain the majority of the variance of each indicator (that is, $>.50$) (Kline 2011).

4.5.4.3. Multifactor cluster measurement models

Multifactor cluster measurement models confirm discriminant validity between the factors. Highly correlated items and items that load moderately or highly onto more than one item are not displaying discriminant validity and may suggest the presence of a higher order factor (Cunningham 2008). Clear distinction between the pattern and structure coefficients can be used to confirm the discriminant validity of interrelated constructs in a model (Thompson 1997).

Higher order models are specified where the results of the multiclust measurement models indicate highly correlated factors (Cunningham 2008). As Bollen explains, general and abstract latent variables could be first order latent variables, and these may be influenced by other latent variables that need not have direct effects on the observed variables (Bollen 1989).

4.5.5. Structural equation modelling

SEM is broadly understood as a methodology in which concepts and hypothesis are formed, observations and measurements are made, models and theories built, and explanations provided and predictions made (Bagozzi 1996). A SEM specifies the key variables in the theory as latent constructs, uses a network of causal or functional paths to represent the hypothesis, and direct and indirect relationships of observed variables are captured by measurement (Bagozzi 1996). There are two components to SEM: one a measurement model relating measured variables to factors; the second a structural model concerning hypothesized relationships among the constructs (Todman *et al.* 2007).

In this research one- and two-factor congeneric models were used to measure and confirm unidimensionality of constructs, and reliability of measures; multi factor cluster models were used to measure and confirm discriminant validity; and a full structural model was used to test the hypothesized relationships of the model specified in this research.

In its strictest sense SEM modelling is confirmatory modelling of a hypothesis, and the goal is to test a theory by “specifying a model representing predictions that test that theory among plausible constructs measured with the appropriate indicators”, not simply to generate a model that fits the data (Kline 2005).

The conduct of SEM relies on key techniques. These require that models be specified, sample size be adequate, and the likely fit of a specified model to the data collected

must be estimated and meet benchmarks for acceptance. SEM path analyses can extend the findings from correlational analysis.

4.5.5.1. Model Identification

Kline's (2005, 2011) specifications for SEM model identification were used in this research. Specifically that:

- models have degrees of freedom of at least zero, and
- every latent variable is assigned to a scale.

Furthermore, single factor CFA models will generally have three indicators as a minimum. Where a factor has only two indicators an equality constraint, which has the effect of setting degrees of freedom to zero, will be set to make the model estimable. In this research, changes to model specifications were guided by theory and the hypothesis (Kline 2005, 2011).

4.5.5.2. Sample size

Sample size is critical for the reliability of parameter estimates, model fit and statistical power (Shah *et al.* 2006). The decision as to "what" is a suitable sample size for SEM is subject to considerable discussion (Jackson 2003) and is affected by:

- Model complexity – the more complex, the more parameters requiring analysis, therefore the more cases required,
- Type of estimation method chosen for analysis – different estimation methods make different assumptions about the data and accordingly require differing sample sizes,
- Distributional characteristics – essentially normal distributions of continuous data with linear associations require smaller sample sizes (Kline 2005).

Differing suggestions for suitable sample size are evident in the literature and result in diverse sample sizes. For example: a ratio of cases to model parameters of 20 observations per estimated parameter or 20:1 (Kline 2005); the minimum sample size needed to ensure adequate statistical power such that false hypotheses can be detected (MacCallum *et al.* 1996); a sample size of >200 unless the case has been made that the population of interest is restricted in size (Barrett 2007).

Recommendations for sample size can differ based on the technique. Various samples sizes are proposed for Exploratory Factor Analysis, with one author ranking a range of sample sizes from very poor (50 cases) to excellent (1,000 cases) (Comrey *et al.* 1992). Others suggest using a subject to variables ratio of 4:1 (Floyd *et al.* 1995), and one author suggests using a general rule of 300 cases whilst observing that the higher the loading marker the lower can be the sample size (that is, $>.80$ with a sample of size of about 150 cases) (Tabachnick *et al.* 2006) .

For the purposes of this research, sample size of 215 is considerate adequate. It exceeds Kline's minimum of 100, and is consistent with his observation that 200 cases is a "typical" of sample size for studies reported in the literature using SEM (Kline 2011).

4.5.5.3. Statistical power

To protect against the possibility of Type I (rejecting a true null hypothesis) and Type II (failing to reject a false null hypothesis) errors, researchers are advised to set the alpha for statistical power at .05 (Cohen 1988). This level of significance testing is widely accepted in the literature (Connelly *et al.* 2010) and was used in this research as the minimum accepted statistical power.

4.5.5.4. Maximum likelihood estimation

Maximum Likelihood (ML) is a normal theory, full-information method that simultaneously analyses all model equations in an iterative algorithm (Kline 2011). ML estimation is based on the assumption of multivariate normality in the observed variables. As a method of estimation to compute parameter estimates and related statistics it provides estimates that are "consistent, asymptotically unbiased, asymptotically efficient, and asymptotically normally distributed"; as well as providing a fitting function that is scale invariant and estimates that are scale free (Bagozzi 1996). The criterion minimised in ML estimation (the fit function) is the discrepancy between a sample covariance and those covariances predicted in the researcher's model (Kline 2011). ML estimation was used in this research, as it is the method most frequently used in SEM models described in the literature (Kline 2011; Shah *et al.* 2006).

4.5.5.5. Statistical fit

Fit statistics were used, in conjunction with consideration of the theoretical soundness of the model, to determine if the theorised model fits to the data (Kline 2011). Because SEM models are simplifications of reality and potentially misspecified (MacCallum *et al.* 1996), several fit statistics are used concurrently to evaluate SEM models no one index being problem free (Sarlis *et al.* 2009).

Chi-squared goodness-of-fit statistic is a basic model fit statistic used with multivariate normal data to indicate if the data fits the proposed models, that is, that the estimated variance-covariance matrix deviates from the sample variance-covariance matrix only because of sampling error (Bagozzi 1996). There are some limitations with using the Chi-squared test statistic as a goodness-of-fit indices, for example is it sensitive to sample size and deviations from normality; accordingly, several indices of fit are used to evaluate model (Todman *et al.* 2007). Chi-squared goodness-of-fit index provides a test of unidimensionality, that is, the measure used in the model can be explained by a single underlying factor plus error, and *p*-values equal to or greater than .05 indicate a satisfactory fit of a model to the data (Bagozzi 1996).

Other indices are categorised as either absolute fit indices or incremental fit indices. The following describes fit indices used in this research. The discussion about the appropriateness of fit indices, the impact of sample size, and the implications of their thresholds is a lively debate in the literature (Barrett 2007; Cunningham 2008; Fan *et al.* 2007; Fan *et al.* 1999; Shah *et al.* 2006). The indices chosen for this research were selected because they are widely reported and, by implication, accepted in the literature where research using SEM is reported. Thresholds chosen were those currently reported in the literature, but recent findings suggest that cut-off values for fit indices maybe open to question (Fan *et al.* 2007; Hu *et al.* 1999; Sarlis *et al.* 2009). However, in recognition that not all commentators accept these cut off levels, the matrix of correlations residuals were also inspected as part of a diagnostic assessment of fit (Kline 2011).

Consistent with modelling trimming procedures (Kline 2005) model fit indices reported are estimates made after excluding nonsignificant paths.

Relative fit indices

These indices indicated the relative improvement in fit of the researcher's model compared with a statistical baseline, and are not a measure of model adequacy (Kline 2011).

- The comparative fit index (CFI) measures the improvement from target to independence model, is independent of sample size and normed to fall between 0 and 1, values close to .95 are considered acceptable (Hu *et al.* 1999).
- The Tucker and Lewis Index (TLI) (1973) expresses noncentrality per degree of freedom (Bagozzi 1996), that is the proportion of improvement of the overall fit of the model relative to the independence model (Todman *et al.* 2007). Derived from the chi-squared statistic it can exceed 0 and 1 (Bagozzi 1996), and values closer to 1 indicate satisfactory fit (Berglund 2005; Todman *et al.* 2007).

Absolute fit indices

These indices indicate the proportion the model that explains the observed covariances and assists in model accept/reject decision making (Kline 2011).

- The Root-Mean-Square Error of Approximation (RMSEA) index recognises that no model will fit exactly in the population and therefore a close approximation is acceptable (Browne *et al.* 1993). Its strength lies in its 90% confidence interval, a p-value >.05 being an indication to reject the null hypothesis that the model is a close fit to the data (Cunningham 2008; Saris *et al.* 2009) although values in the confidence interval range of 0.05 to 0.08 indicate a fair fit (Berglund 2005; Hu *et al.* 1999; MacCallum *et al.* 1996; Storch *et al.* 2010). It is the confidence interval that provides important information about the precision of fit (MacCallum *et al.* 2000). The AMOS16 software used in this research produced a 90% confidence interval.
- The Standardized Root-Mean-Square Residual (SRMR) provides an average difference between corresponding elements of the sample and model-implied correlations matrices (Cunningham 2008). A result <.05 is considered an indication of data that fits the model (Saris *et al.* 2009), the cut-off recommended at close to .06 (Hu *et al.* 1999).

4.6. Chapter summary

This chapter outlined the methodology used for Study 2. The method used to identify and collect the data needed to explore hypotheses that have been developed was described. The statistical techniques used in analysing the data and testing the underlying theory have also been described. The benchmarks used as cut-off criteria in analysis of the data were identified and explained. Both the instrument design and

the administration were expanded upon, and the recruitment and sample frame discussed, to indicate proper sampling technique.

The next chapter presents the analyses of the collected data, the structural equation model that was tested, and the results of the hypotheses testing.

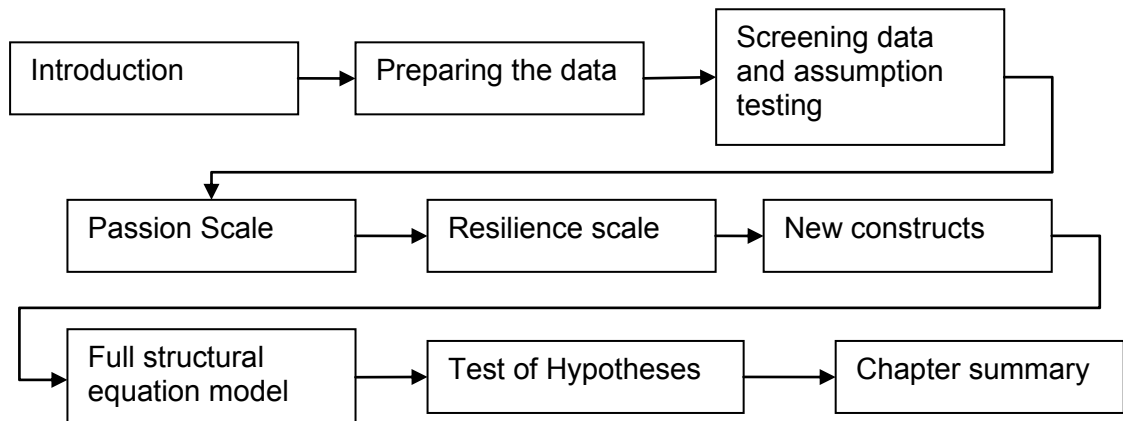
5. Data Analysis and Results – Study 2

5.1. Chapter introduction

In this chapter, the data collected in Study 2 were analysed in accordance with the methodology outlined in Chapter 3.

All items and constructs were subjected to screening for missing values analysis, normality, linearity, multicollinearity, and outliers and descriptive statistics were obtained for the entire set of responses. Data imputation was carried out as appropriate, and constructs were subjected to EFA or CFA as appropriate and multifactor cluster models developed. SEM was used to test the hypotheses and their proposed underlying theory. Figure 5-1 provides an overview of the chapter.

Figure 5-1 Chapter 5 overview



Adapted from Perry (1998)

5.2. Preparing the data

The 424 responses contained within the SPSS master data file were reviewed. The items were re-coded and incomplete responses, duplicate responses, and responses that did not meet criteria for an entrepreneur were removed. The final sample was screened for data entry errors, evidence of response bias, outliers and missing data. A missing values analysis and data imputation process was conducted. The final sample size was 215.

5.2.1. Re-coding items

The items in the survey were re-coded using a code based on the scale to which the question item belonged as follows:

<u>Scale Name</u>	<u>Re-coded to</u>
My Current Business Activities (Passion Scale)	CBA1, CBA2, CBA3...
Life Adaptation (Resilience Scale)	LA1, LA2, LA3...
Entrepreneurial Focus	EF1, EF2, EF3...

Demographic questions were used to compile the constructs of Entrepreneurial Success and Sustained Entrepreneurial Action and were re-coded as:

Entrepreneurial Success	ES1, ES2, ES3...
Sustained Entrepreneurial Success	SEA1, SEA2, SEA3 ...

5.2.2. Incomplete responses

Data Sort Cases identified 192 incomplete records. These were deleted leaving 232 responses in the sample.

5.2.3. Not entrepreneurs

Data Sort Cases was used to identify those responses that did not meet the criteria for an entrepreneur. As all participants in the survey considered themselves entrepreneurs, three questions were used to confirm that they met the criteria used in this research for an entrepreneur:

- The answer selected for “I have this business because I” had to be “created a business that previously didn’t exist” in order to satisfy the business or company founder criterion. Two hundred and ten responses answered in this manner, meeting the criterion without further consideration.
- A further five responses selected the option “other” and described a situation that indicated they were founders of the business (for example “Started something by accident” and “Creating new products and services before formally starting the commercialisation process”). These responses were retained in the sample as meeting the criterion of business or company founder.

- The question “owned ___% of my business when operations commenced” was used to determine if the remaining 17 records would meet the second criterion for entrepreneur, ie that the participant owned 50% or more of the business when they became an owner. A further 9 responses did not meet this criterion and were removed.
- In all, nine responses were removed because they did not meet the criteria of being an entrepreneur for the purposes of this research, leaving a sample of 223.

5.2.4. Duplicate responses

The function *Data Identify Duplicate Responses* using the unique Respondent ID field for sorting revealed eight duplicate responses. These were removed from the SPSS file giving a final sample size of 215.

5.2.5. Substituting for missing values

All questions were sorted in ascending order, the missing data for that column identified, and replaced with -999. Where necessary, in the variable view the string lengths were changed to accommodate a string of 4, and where missing data had been replaced with -999 the “missing value” was changed to “discrete missing value -999”.

5.2.6. Missing data

In developing the on-line Opinion survey, the following scales required forced answers before the participant could move to the next screen:

- My Current Business Activities (The Passion Scale)
- Life Adaptations (Connor-Davidson Resilience Scale)
- Entrepreneurial Focus (questions developed specifically for this research)

Thus, these questions did not have deliberate or inadvertent missing data. However, 108 non-forced responses required examination using missing values analysis (MVA) to determine if they were not missing at random (NMAR), missing at random (MAR) or missing completely at random (MCAR).

The Missing Patterns (Cases with Missing Values) Report indicated the variables that are the most frequently missing from the data. The cause of this is suggested to be:

- Cba (38 times missing) – NMAR systemic missing data
- SEA 4, 6, 7 (11 and 8 times missing) – NMAR: business sensitivities could have lead to a decision not answer these questions
- Age, ES 1 (8 times missing) – NMAR – perhaps perceived as personally intrusive

The remainder of the missing pattern reveals missing items of 3 or less for the questions suggesting that this data is MAR or MCAR. Following Cohen *et al.* (1983), responses with less than 10% missing are unlikely to be problematic.

5.2.7. MVA conclusions

The majority of missing data may not be random but due to a decision on the part of the participant to not complete that question, or the consequence of a fault in the survey instrument for the first 38 completed surveys. The decision to not complete the survey may be due to:

- For questions es2 onwards, it is possible that survey fatigue lead participants to cease participating in the survey at this point forward.
- For questions es1 and age, it is possible that personal sensitivities to these questions (“I am a successful entrepreneur” and “My age group is”) lead to their omission.

With less than 25% of responses with missing data an EM algorithm was conducted to examine the nature of the omissions and impute values for the missing data.

5.2.8. Missing data imputation

Each scale was subjected to the EM and univariate statistics, EM Means, EM Correlations, EM Covariances, and Little’s MCAR χ^2 Test. For all missing value variables the χ^2 was not significant at $p < .001$, and the data was assumed to be MAR.

Therefore, imputed values are appropriate and were coded into the Likert scale for the following items:

Scale Items	Range
Cba15	1 through 7
Sea1 to sea11	1 through 4
Es1 to es10	1 through 5
Age	1 through 6

5.3. Screening data and assumption testing

The following section reports the results of the examination of each existing and developed scale used in this research using the techniques and benchmarks described in Chapter 4.

Data screening and assumption testing reveal that all scale items comply with assumptions of multivariate normality. Items were reverse scored and summed in accordance with scale instructions or usual scale construction advice (Dawis 1987) to obtain a scale score. This scale score was used in comparing means, standard deviations, *t*-scores and *p* values of the populations used by scale developers to the population of this research, and later as the variable in the path model (Kline 2011).

- EFA using maximum likelihood (ML) factor analysis was conducted on the new reflective constructs proposed for this research (the Entrepreneurial Obsession constructs) because a search of the literature identified only limited information about this construct (Todman *et al.* 2007).
- One-factor congeneric modelling using ML factor analysis was conducted for each theorised subscale to examine linearity, homoscedacity and number of factors. Note that the variances of the latent variables were fixed at unity to enable significance testing of all factor coefficients (Anderson *et al.* 1988). Where there were only two or three items within a factor construct in order to get a model with sufficient degrees of freedom the two error variances are paired by setting the parameter of both to alpha, i.e. to equal (Kline 2011).

Once one or two factor congeneric modelling confirmed unidimensionality, Cronbach's α was generated to estimate reliability of the items.

Theorised subscales and factors confirmed by CFA were incorporated into a multi-factor cluster measurement model to confirm discriminant validity and provide evidence

for the conceptual distinctiveness of the constructs confirmed in the one- and two-factor measurement models. For all measures, $n=215$ responses.

5.4. Demographic data

In a sample of 215 entrepreneurs, 51 were women (23.7%), 162 were men (76.1%), and 2 did not indicate their gender (.9%).

The majority of respondents (62%) were aged between 31 to 50 years; 82% of all women respondents were in this age group, compared to only 56% of all male respondents (see Table 5-1).

Table 5-1 Age demographics of participating entrepreneurs

	Female	Male	Age group as % of total respondents	Female as a % of total female	Male as a % of total male
$n= 215$					
18 to 30 years	1	14	7%	2%	9%
31 to 40 years	21	40	29%	41%	25%
41 to 50 years	21	50	33%	41%	31%
51 to 60 years	7	37	21%	14%	23%
61 to 70 years	1	19	9%	2%	12%
Over 70 years	0	2	1%	0%	1%
Total	51	162	100%		
% of respondents	24%	75%			

University education was the highest level of education achieved by the majority of entrepreneurs in the sample (61%); 25% hold a TAFE/Trade qualification; and 15% have no education beyond Year 12. Of those whose highest level of education is a tertiary qualification, 34% hold a post graduate qualification. More women entrepreneurs had tertiary education as their highest level of education (63%) compared to male entrepreneurs (60%), but male entrepreneurs are more likely to have a higher level degree (38%) than woman entrepreneurs (22%). More women than men entrepreneurs have no education beyond high school (16% of women, 14% of men), and more male entrepreneurs have TAFE/Trade qualification (26%) than do women (22%). Of all respondents, 61% have university level education as their highest level of education, and of these 60% are men and 63% are women (see Table 5-2).

Table 5-2 Education by Gender

	High School	TAFE/Trade	Bachelors Degree	Honours/Graduate Diploma	Masters	PhD	Total
Female	8	11	17	4	7	4	51
% of Total Female	16%	22%	33%	8%	14%	8%	
Male	23	42	20	15	44	18	162
% of Total Male	14%	26%	12%	9%	27%	11%	
Total	31	53	37	19	51	22	213
% of Total	15%	25%	17%	9%	24%	10%	100%

Entrepreneurs in the age group 41 to 50 years are the most highly educated, with 33% having tertiary qualifications, compared to 29% of 31 to 40 age group, and 21% of 51 to 60 years age group (see Table 5-3).

Table 5-3 Education by Age

	High School	Technical/Trade	Bachelors Degree	Honours/Graduate Diploma	Masters	PhD	Total	% of Total
18 to 30 years	4	7	0	1	3	0	15	7%
31 to 40 years	6	22	8	11	13	2	62	29%
41 to 50 years	11	11	13	5	22	9	71	33%
51 to 60 years	5	10	10	1	13	6	45	21%
61 to 70 years	5	4	5	1	1	4	20	9%
Over 70 years	0	0	1	0	0	1	2	1%
Total	31	54	37	19	52	22	215	
	14%	25%	17%	9%	24%	10%	100%	

Of the sample, 60% perceive themselves to be successful entrepreneurs. By gender, results indicate that 67% of women and 58% of men considered themselves to be successful entrepreneurs.

The younger the entrepreneur, the more likely they were to perceive themselves as successful entrepreneurs, work longer hours per week in their venture, experience high average growth over a three year period, yet have lower rates of turnover, employee numbers and a younger venture than the other age groups (see Table 5-4).

Table 5-4 Self-perceptions of success as entrepreneurs

Age Group	Self-perception of success	61hrs+ per week at work	Venture Age <5 years	Avg Growth >51% pa	Turnover <\$10m pa	< 10 Employee
18 to 30 years	73%	73%	87%	47%	80%	73%
31 to 40 years	60%	32%	47%	31%	77%	59%
41 to 50 years	61%	15%	28%	15%	58%	58%
51 to 50 years	58%	11%	22%	11%	69%	64%
61 to 70 years	45%	10%	20%	5%	70%	50%
70+ (n=2)	100%	0%	0%	0%	50%	0%

Of the entrepreneurs who considered themselves successful:

- 39% reported experiencing growth in average staff numbers in the period 2006-2008
- 43% reported experiencing growth in average annual turnover for this period
- 10% reported experiencing growth in ROI

Entrepreneurs' perceptions of success in relation to employee numbers:

- less than 10 full time and part time employees = 50% considered themselves successful entrepreneurs
- between 10 and 50 full time and part time employees = 73% considered themselves successful entrepreneurs
- between 51 and 1,000 full time and part time employees = 75% considered themselves successful entrepreneurs
- more than 1,000 full time and part time employees = 50% considered themselves successful entrepreneurs

Entrepreneur's perceptions of success in relation to approximate average annual turnover for the period 2006-2008:

- Less than \$500,000 = 50% considered themselves successful entrepreneurs

- Between \$500,001 and \$10,000,000 = 52% considered themselves successful entrepreneurs
- Between \$10,000,000 and \$20,000,000 = 80% considered themselves successful entrepreneurs
- Over \$20,000,000 = 69% considered themselves successful entrepreneurs

The majority of entrepreneurs in this research consider themselves to be successful entrepreneurs. Among those who consider themselves successful entrepreneurs, employee numbers and turnover business metrics may be more important to self-perceptions of success than were growth business metrics.

5.5. The passion scale

This scale comprises three subscales: two subscales of six items each, *Harmonious Passion* (HP) and *Obsessive Passion* (OP), and one subscale of four items referred to as *presence of passion* (PP) which assesses whether an individual has a passion for the activity. The PP subscale is amended by replacing the word “activity” with the word “business” (Philippe *et al.* 2009d; Vallerand *et al.* 2003).

Unidimensionality and content validity for each construct was confirmed using CFA on one-factor congeneric models, discriminant validity was confirmed using a multicluster measurement model, resulting in a reduced number of subscale items. Subscale scores were computed by summing all items remaining in each subscale after construct and discriminant validity were confirmed.

5.5.1. Data preparation

The data appeared to be normal in its distribution and, after conducting an MVA imputed values were obtained for the missing item CBA 15 in 38 responses. Frequency analyses revealed means ranging from 2.90 to 6.42; standard deviations ranging from .75 to 1.88, and all items were below benchmarks for skewness (2) at -1.79 and kurtosis (7) at 4.51. Although stem and box plots indicated the presence of outliers these were not positioned distant from the next case. Removal of these outliers and recomputing the descriptive statistics resulted in new responses indicated as outliers, thus supporting the visual impression that the distance from the outliers to other responses is relatively small. Thus, the responses were returned to the dataset.

5.5.2. Extent of passion

The presence of passion subscale items assesses the extent of passion reported by entrepreneurs, and items were examined to determine if this sample contained non-passionate entrepreneurs. These items measure the extent to which participants invest time in their activity, find it important, value it and consider it a passion for them (Vallerand *et al.* 2003). Individuals with an average score above 4 on this seven point likert scale are classified as passionate (Bonneville-Roussy *et al.* 2009; Mageau *et al.* 2009; Vallerand *et al.* 2003).

Only 2 responses resulted in an average score across the four items less than 4 (ie 3.25 and 3.75) suggesting that at least 99.1% of the sample have a passion for their business ventures. These two responses were retained in the sample, as the average result is not indicative of an outlier and therefore will not distort results.

5.5.3. Harmonious or obsessive passion

Using all the items in each subscale of the Passion Scale, mean scores for harmonious passion (5.32) and obsessive passion (3.87) suggest that in general entrepreneurs experience a passion for their business venture that is more harmonious than obsessive in nature.

A positive relationship between harmonious and obsessive passion has been reported in other studies (Ratelle *et al.* 2004; Rousseau *et al.* 2008; Rousseau *et al.* 2002; Vallerand *et al.* 2003) and is explained by the common elements shared by the two types of passion, specifically that these are activities that are a passion for the individual. This result is not confirmed in this study. Positive significant relationships of weak to moderate correlation exist between OP and PP, and HP and PP, but not between OP and HP (see Table 5-5).

Table 5-5 Correlations between PP, HP and OP

		HP	OP	PP
Harmonious Passion (HP)	Pearson Correlation	1	.	
Obsessive Passion (OP)	Pearson Correlation	.12	1	
Presence Passion (PP)	Pearson Correlation	.40**	.33**	1

Note: ** $p < .001$

On average, in this sample those who reported high values on OP also reported high values of PP, and those reporting high values on HP also reported high values of PP. However, whilst high values were similarly reported for HP and OP, the relationship between these constructs was not significant. This indicates that no linear relationship was found in this sample between these constructs, and suggests that in this sample, obsessive and harmonious passion types are independent of one another.

The suggestion that individuals experience both harmonious and obsessive passion (Rousseau *et al.* 2008), each passion type to a greater and lesser extent, is also confirmed by this research.

5.5.4. Comparing means

Single sample *t*-tests are used to compare means for the two factors (harmonious and obsessive passion) of this sample with those of other populations studied. For statistical stability, a ratio of 5 responses to 1 item is required when comparing the means of groups (Tabachnick *et al.* 2007). As the Passion Scale contains 16 items, this study has chosen empirical studies with at least 80 participants to ensure statistical stability, resulting in 13 studies for comparison purposes (see Table 5-6). Results for the PP sub-scale are not reported in other studies.

The harmonious passion of Australian entrepreneurs is significantly different from all other population samples tested ($p < .001$) except the sample of French-Canadian coaches, being either higher or lower than these populations. Australian entrepreneurs appear to be more harmoniously passionate than the samples of undergraduate students and teachers, British college athletes and French referees. Their mean scores suggest they are less harmoniously passionate than North American conservatoire students, and French-Canadian dramatic arts students, coaches and competitive athletes.

Table 5-6 One-sample T Test for Comparison of Passion Scale Means

	HP Mean	HP SD	<i>t</i>	Sig	α	OP Mean	OP SD	<i>t</i>	Sig	α
This study <i>n</i>=215	5.32	0.94	n/a	n/a	.79	3.87	1.12	n/a	n/a	.74
Canadian Teachers (Carbonneau <i>et al.</i> 2008) <i>n</i>=653	4.92	1.02	6.29	.000		2.65	1.04	15.94	.000	
Canadian Dramatic Arts college students (Vallerand <i>et al.</i> 2007) <i>n</i>= 143	5.97	.71	-10.18	.000	.73	5.54	1.16	-21.79	.000	.89
Canadian Psychology undergraduates (Vallerand <i>et al.</i> 2007) <i>n</i>= 130	4.92	1.03	6.29	.000	.84	2.55	1.00	17.24	.000	.79
British college athletes (Lafreniere <i>et al.</i> 2008) <i>n</i>=157	5.01	0.89	4.87	.000	.80	3.68	1.30	2.49	.014	.83
French-Canadian coaches (Lafreniere <i>et al.</i> 2008) <i>n</i>=106	5.45	0.88	-2.02	.044	.83	2.94	1.40	12.14	.000	.85
Norwegian psychology students (Stenseng 2008)<i>n</i>=198	5.07	1.12	3.93	.000	.79	3.66	1.42	2.75	.007	.84
French Canadian competitive runners (Stephan <i>et al.</i> 2009) <i>n</i>=170	5.68	0.91	-5.63	.000	.78	3.12	1.45	9.81	.000	.84
Singaporean Secondary students - digital Gamer (Wang <i>et al.</i> 2008) <i>n</i>= 155	4.91	1.41	6.44	.000	.84	3.80	1.70	.919	.359	.86
Canadian College students (Vallerand <i>et al.</i> 2003) <i>n</i>= 539	5.01	1.15	4.88	.000	.79	3.20	1.47	8.75	.000	.89
French Referees (Philippe <i>et al.</i> 2009b) <i>n</i>=227	4.46	1.09	13.50	.000	.78	1.88	0.77	25.98	.000	.83
French-Canadian high school and college basketball players (Donahue <i>et</i> <i>al.</i> 2009) <i>n</i>=208	5.89	0.69	-8.92	.000	.77	4.07	1.35	19.61	.000	.85
North American non- professional conservatoire-level musicians (Bonneville-Roussy <i>et al.</i> 2009) <i>n</i>= 187	5.58	0.89	-4.06	.000	.73	2.90	1.22	12.67	.000	.76
French-Canadian High School basketball players (Vallerand <i>et al.</i> 2008a) <i>n</i>=184	5.85	0.90	-8.31	.000	.73	4.95	1.41	-14.09	.000	.84

In the case of obsessive passion, the means for the sample of Australian entrepreneurs is significantly different from that of the other population samples ($p<.001$), except Singaporean secondary student digital gamers. With the exception of Canadian Dramatic Arts students and basketball players, Australian entrepreneurs are more obsessively passionate than 9 of the population samples tested in other empirical research.

5.5.5. Construct validity

One-factor congeneric models were used to confirm unidimensionality and content validity of the constructs comprising the Passion Scale (PP, HP and OP), see Table 5-7. Final models demonstrated unidimensionality: the data fitted the final specified model, items significantly loaded at $>.32$ on their factor, and regression weights were all $p<.001$. Reliability analysis of the unidimensional models was confirmed for HP and PP using Cronbach's $\alpha > .7$, with OP less than the benchmark but still an acceptable alpha at $\alpha > .68$. Table 5-7 lists the constructs and their items.

Table 5-7 Measures of Goodness-of-Fit

Construct	χ^2	SRMR	RMSEA	TLI	CFI	α	Items CBA
Obsessive Passion (OP)	$\chi^2(5)=6.95, p=.92^*$	.04	.04(.00,.11)	.98	.99	.71 for 5 items	2, 4, 7, 11, 12
Harmonious Passion (HP)	$\chi^2(2)=4.78, p=.65^*$	.03	.08 (.00,.17)	.97	.99	.79 for 4 items	1, 5, 8, 10
Presence of Passion (PP)	$\chi^2(3)=6.82, p=.66^*$	.04	.08(.00,.16)	.97	.98	.71 for 4 items	13, 14, 15,16
Multiclus- ter model HP and OP	$\chi^2(13)=27.74, p=.29^*$	.04	.06(.02,.10)	.95	.97	.81 for HP .68 for OP	HP =1, 8,10 OP = 2, 4, 7, 11

* *Bollen-Stine Bootstrap p value, n=215*

5.5.5.1. Obsessive passion

A CFA using ML estimation was conducted on the six items for OP. The data did not fit the model ($\chi^2(9)=31.41, p=.000$), high Mardia's Coefficient suggesting non-normal data. A high SRMR index suggested inspection of Mahalanobis distances. Potential outliers were removed sequentially, the data were re-analysed, with no improvement in the fit of the data to the model. The responses were returned to the dataset. Standardized

residuals did not exceed the benchmark of 2 and factor loadings of items were all significant and $>.32$. Finally, theory was used to guide the use of modification indices in the removal of one item resulting in an improvement in model fit: $\chi^2(5)=6.95, p=.22$, Bollen-Stein $p=.92$, SRMR = .03, RMSEA =.04 (.00, .11), TLI = .98, CFI = .99. The item removed was cba9 *“If I could, I would only do my business”*, Cronbach’s α indicates satisfactory internal reliability at .71 for five items (see Table 5-7).

5.5.5.2. Harmonious passion

A one factor congeneric model was specified for the six items, and the data did not fit the model ($\chi^2(9)=67.95, p=.000$). Inspection of the Mahalanobis distances as suggested by high SRMR index (.09). Iteratively removing responses and re-analysing the data did not improve the model fit, and the removed responses were reinstated in the dataset. Standardized residuals were inspected for values > 2.0 and squared multiple correlations used to determine which of the pair to remove as the least reliable (ie the lowest correlation). Two items were removed, improving model fit.

Mardia’s coefficient suggested non-normal data, requiring the use of Bollen-Stine’s p -value for data which now fitted the model: $\chi^2(2)=4.78, p=.09$, Bollen-Stein $p=.65$, SRMR = .03, RMSEA =.08 (.00, .17), TLI = .97, CFI = .99. Items removed were cba3 *“The new things that I discover with this business allow me to appreciate it even more”* and cba6 *“This business allows me to live a variety of experiences”*, Cronbach’s α indicated satisfactory internal reliability at .79 for four items (see Table 5-7).

5.5.5.3. Presence of Passion

A one-factor congeneric model was specified for the four items describing the construct. The data did fit the model, although a high Mardia’s coefficient indicated non-normal data requiring the use of Bollen-Stine’s p -value: $\chi^2(3)=6.82, p=.08$, Bollen-Stein $p=.66$, SRMR = .04, RMSEA =.08 (.00, .16), TLI = .97, CFI = .98. Cronbach’s α indicates satisfactory internal reliability at .71 for four items (see Table 5-7).

5.5.6. Discriminant validity

A two-factor model was specified to examine the discriminant validity of the two constructs to be used in the SEM, HP and OP. The data did not fit the initial model specified: $\chi^2(26)=128.19, p=.000$, Bollen-Stein $p=.00$. The lack of model fit suggests

the two subscales cannot be used together in their current composition in the SEM as they are not empirically distinguishable.

The model was respecified using modification indices to guide the choice of items for removal (*cba5 This business reflects the qualities I like about myself* and *cba12 I have the impression that my business controls me*) improving model fit: $\chi^2(13)=24.74, p=.02$, Bollen-Stein $p=.29$, SRMR = .04, RMSEA = .06 (.02, .10), TLI = .95, CFI = .97. Pattern and structure coefficients indicate discriminant validity (see Table 5-8).

The reliability of the revised HP and OP constructs was re-examined consequent to removal of items and each was found to have satisfactory internal reliability above the $\alpha=.70$ threshold used in this research: HP ($\alpha=.81$) and OP ($\alpha=.68$) (see Table 5-7 and Table 5-8).

Table 5-8 Discriminant validity for OP and HP confirmed

	Obsessive Passion		Harmonious Passion	
	Pattern	Structure	Pattern	Structure
cba8	0	0.08	0.80	0.80
cba10	0	0.08	0.83	0.83
cba1	0	0.07	0.76	0.76
cba2	0.45	0.45	0	0.04
cba4	0.66	0.66	0	0.06
cba7	0.62	0.62	0	0.06
cba11	0.64	0.64	0	0.06

Descriptive statistics for HP and OP factors as confirmed by construct and discriminant validity testing reveal mean scores of HP ($M=4.83$, $SD=1.31$) and OP ($M=4.23$, $SD=1.17$). Items remaining in each subscale after validity testing are at Table 5-9.

Table 5-9 Passion Scale items after construct and discriminant validity confirmed

Item	Construct	Item	Retained	Removed
Cba1	Harmonious Passion	This business is in harmony with the other activities in my life.	✓	
Cba3		The new things that I discover with this business allow me to appreciate it even more.		✓
Cba5		This business reflects the qualities I like about myself.		✓
Cba6		This business allows me to live a variety of experiences.		✓
Cba8		My business is well integrated in my life.	✓	
Cba10		My business is in harmony with other things that are part of me.	✓	
Cba2	Obsessive Passion	I have difficulties controlling my urge to do my business activities.	✓	
Cba4		I have almost an obsessive feeling for this business.	✓	
Cba7		This business is the only thing that really turns me on.	✓	
Cba9		If I could, I would only do my business.		✓
Cba11		This business is so exciting that I sometimes lose control over it.	✓	
Cba12		I have the impression that my business controls me.		✓
Cba13	Presence of Passion	I spend a lot of time doing this business.	✓	
Cba14		This business is important for me.	✓	
Cba15		This business is a passion for me	✓	
Cba16		I like this business.	✓	

5.6. Resilience scale

Authors of this scale find that in 8 studies conducted using a total of 6,000 subjects, between 2 and five factors are derived that explain the data, and that differences in the number of factors may be due to variations in methodology and sample, as well as underlying assumptions about factor items or predetermined numbers of factors (Davidson 2009). The scale's authors indicate five factors, the last two being composed of only 3 and 2 items which may not be robust (Davidson 2009):

- persistence/tenacity, strong sense of self-efficacy
- emotional and cognitive control under pressure
- adaptability/ability to bounce back
- control/meaning
- meaning

5.6.1. Comparison of means

A *t*-test was performed comparing the means of other population groups on the Resilience Scale against the mean derived for the sample of founding entrepreneurs in this research. Results are presented in Table 5-10.

The mean for the sample of entrepreneurs is significantly different from that of the operating theatre nurses, a general population sample, and a primary care sample. Therefore, we conclude that entrepreneurs as a group are more resilient than these groups, and that this result is a significant difference and not due to chance.

Table 5-10 Comparison of population means

				Current Study, <i>n</i> =215				
Australian Operating Theatre Nurses, <i>n</i> =735 (Gillespie <i>et al.</i> 2009)	Mean	Std	α	Mean	Std	<i>t</i>	<i>Sig</i>	α
	75.9	11.0	.90	101.29	10.19	36.55	.000	.86
Connor-Davidson 2 Studies (Connor <i>et al.</i> 2003)								
General Population <i>n</i> = 577	80.4	12.8	.89	101.29	10.19	30.07	.000	
Primary care patients <i>n</i> =139	71.8	18.4		101.29	10.19	42.45	.000	

5.6.2. Construct validity

A one-factor congeneric model for the resilience construct was not a satisfactory fit: ($\chi^2(252)<606.22, p=.000$). Sample correlations indicated six eigenvalues >1: 6.81, 1.99, 1.37, 1.25, 1.18, 1.04, .94. Factor loadings were significant at $p<.001$ except for *la1* ($p=.014$) and *la3* ($p=.001$), standard residual covariances greater than 2 were indicated for 12 pairs of items.

Respecifying the model, all items are accounted for within four factors, identified in this research as:

- *Fatalist*: $\chi^2(1)<1.27, p=.26$, SRMR = .02, RMSEA = .04 (.00, .19), TLI = .99 CFI = .99. The factor loadings were significant at $p<.001$ except *la1* ($p=.016$), significant factor coefficients ranged from .19 to .73. Unsatisfactory reliability is indicated by Cronbach's α = .54 for 3 items, below the acceptable benchmark of .70. Inter-item means are inspected as factors with low numbers of items can report lower Cronbach's α (Briggs *et al.* 1986). Inter-item means are .11, .18

and .51, falling outside the acceptable range of .20 to .40, and above .50 the cut-off level at which item redundancy is suggested, thus reinforcing the lack of acceptable internal consistency of this three-item factor (Briggs *et al.* 1986).

- *Adaptable tenacity*: $\chi^2(35)=45.94, p=.10$, SRMR = .05, RMSEA = .04 (.00, .07), TLI = .96, CFI = .97. The factor loadings were significant at $p<.001$. Satisfactory reliability indicated by Cronbach's $\alpha = .76$ for 10 items.
- *Emotional and cognitive control*: $\chi^2(9)=9.73, p=.37$, SRMR = .03, RMSEA = .02 (.00, .08), TLI = .99, CFI = .99. The factor loadings were significant at $p<.001$. Satisfactory reliability indicated by Cronbach's $\alpha = .71$ for 6 items.
- *Self-efficacy*: $\chi^2(5)=5.40, p=.37$, SRMR = .03, RMSEA = .02 (.00, .09), TLI = .99, CFI = .99. The factor loadings were significant at $p<.001$. Satisfactory reliability indicated by Cronbach's $\alpha = .72$ for 5 items.

5.6.3. Discriminant validity

A multi-factor cluster model using *fatalist*, *adaptable tenancy*, *emotional & cognitive control*, and *self-efficacy* was specified to test for discriminant validity. The data did not fit the model: ($\chi^2(225)=508.76, p=.000$).

A review of the pattern and structure correlations indicated little discrimination and very high correlations between 3 factors (.90, .84, .93). The factor *fatalist* discriminated from other factors (see Table 5-11).

Table 5-11 Discriminant validity for resilience construct

	Fatalist	Self efficacy	Emotional cognitive control	Adaptable tenacity
Fatalist	-0.54			
Self efficacy	0.319	-.72		
Emotional cognitive control	0.337	0.897	-.71	
Adaptable tenacity	0.39	0.84	0.93	-0.76
la9	0.68	0.22	0.23	0.26
la3	0.75	0.24	0.25	0.29
la12	0.19	0.59	0.53	0.50
la23	0.15	0.47	0.42	0.39
la17	0.19	0.61	0.55	0.51
la11	0.24	0.77	0.69	0.64
la10	0.18	0.58	0.52	0.48
la24	0.20	0.54	0.61	0.57
la22	0.20	0.52	0.59	0.54
la19	0.16	0.44	0.49	0.45
la15	0.14	0.37	0.41	0.39
la14	0.22	0.57	0.64	0.59
la5	0.19	0.49	0.55	0.51
la7	0.22	0.49	0.54	0.58
la20	0.15	0.33	0.37	0.40
la13	0.17	0.37	0.41	0.44
la21	0.19	0.42	0.47	0.50
la18	0.17	0.36	0.40	0.43
la16	0.25	0.55	0.61	0.66
la8	0.21	0.44	0.50	0.53
la6	0.15	0.32	0.36	0.38
la4	0.23	0.51	0.56	0.60
la2	0.21	0.46	0.51	0.55

The lack of discriminant validity and high correlations between the factors suggests the presence of a higher order factor (Cunningham 2008). Indeed, because of the lack of clarity around factors, the scale authors suggest using the scale in its entirety, not as component factors (Connor *et al.* 2003).

It has not been possible to capture the factor *fatalist* in this research. The items do not display acceptable internal consistency using either Cronbach's alpha (acceptable if >.70) or inter-item means (acceptable if between .20 and .40). Furthermore, only two items are significantly correlated and then only moderately (.51) not highly correlated with each other (Tabachnick *et al.* 2006). Therefore, the factor *fatalist* will not be used in the remainder of this research.

The three remaining factors (*adaptable tenancy*, *emotional control*, *self-efficacy*) were respecified as a higher order model to confirm discriminant validity, and the data did not fit the model on all fit indices, Mardia's Coefficient suggested non-normal data: $\chi^2(186)=425.14, p=.00$, Bollen-Stein $p=.003$, SRMR = .07, RMSEA = .08(.07, .09), TLI = .78, CFI = .81. Guided by theory and using modification indices, items were removed until the data fitted the model: $\chi^2(51)=100.56, p=.00$, Bollen-Stein $p=.29$, SRMR = .05, RMSEA = .07(.05, .09), TLI = .91, CFI = .93. Cronbach's $\alpha = .85$ for 12 items suggested good reliability.

A scale score for the construct *resilience*, used for hypothesis testing, was derived by taking the average of the summed items remaining in the higher order model which confirmed discriminant validity (see Table 5-12).

Items remaining in the construct Resilience are listed at Table 5-13.

Table 5-12 Discriminant validity confirmed - higher order model for resilience

	1	2	3	4	la12	la11	la10	la24	la22	la14	la5	la7	la16	la8	la4	la2
1. Resilience	1															
2. Self efficacy	0.85	1.00														
3. Emotional cognitive control	0.98	0.83	1.00													
4. Adaptable tenacity	0.80	0.68	0.78	1.00												
la12	0.52	0.62	0.51	0.42	1.00											
la11	0.67	0.79	0.66	0.54	0.49	1.00										
la10	0.55	0.65	0.54	0.44	0.40	0.51	1.00									
la24	0.62	0.52	0.63	0.49	0.32	0.41	0.34	1.00								
la22	0.58	0.49	0.60	0.46	0.30	0.39	0.32	0.38	1.00							
la14	0.64	0.54	0.65	0.51	0.33	0.43	0.35	0.41	0.39	1.00						
la5	0.54	0.46	0.55	0.43	0.28	0.36	0.29	0.35	0.33	0.36	1.00					
la7	0.49	0.42	0.48	0.61	0.26	0.33	0.27	0.30	0.28	0.31	0.26	1.00				
la16	0.54	0.45	0.52	0.67	0.28	0.36	0.29	0.33	0.31	0.34	0.29	0.41	1.00			
la8	0.46	0.39	0.45	0.58	0.24	0.31	0.25	0.28	0.27	0.29	0.25	0.35	0.39	1.00		
la4	0.51	0.43	0.50	0.64	0.27	0.34	0.28	0.31	0.30	0.33	0.27	0.39	0.43	0.37	1.00	
la2	0.48	0.41	0.47	0.60	0.25	0.32	0.26	0.29	0.28	0.31	0.26	0.37	0.40	0.35	0.38	1.00

Table 5-13 Items remaining in resilience construct

Item Code	Resilience Items	Retained	Removed
La1	Able to adapt to change		✓
La2	Close and secure relationships	✓	
La3	Sometimes fate or God can help		✓
La4	Can deal with whatever comes	✓	
La5	Past success gives confidence for new challenges	✓	
La6	See the humorous side of things		✓
La7	Coping with stress strengthens	✓	
La8	Tend to bounce back after illness or hardship	✓	
La9	Things happen for a reason		✓
La10	Best effort no matter what	✓	
La11	You can achieve your goals	✓	
La12	When things look hopeless, I don't give up	✓	
La13	Know where to turn for help		✓
La14	Under pressure, focus and think clearly	✓	
La15	Prefer to take the lead in problem solving		✓
La16	Not easily discouraged by failure	✓	
La17	Think of myself as a strong person		✓
La18	Can make unpopular or hard decisions		✓
La19	Can handle unpleasant feelings		✓
La20	Have to act on a hunch		✓
La21	Have a strong sense of purpose		✓
La22	In control of your life	✓	
La23	I like challenges		✓
La24	You work to attain your goals	✓	
La25	Pride in your achievements.		✓

5.7. New constructs

The analysis on the three new constructs of entrepreneurial obsession, sustained entrepreneurial action, and entrepreneurial success follow.

5.7.1. Entrepreneurial obsession scale

This research explores the possibility that *entrepreneurial obsession* is experienced by entrepreneurs and may form part of the explanation as to how they can sustain entrepreneurial action in the face of the challenges and difficulties of entrepreneurship. An obsession is theorised to comprise *intrusive thoughts* that are *unwelcome*, *difficult to control* and *internally attributed* (Rachman *et al.* 1980). Other common confirmatory

features of an obsession are that they *generate anxiety* (DSM-IV 2000), *motivate action* (Rachman 2003), and are imbued with *great personal significance* (Salkovskis 1985).

Six items were developed from a mix of the literature on obsession and the data emerging from Study 1 for each of the seven constructs that comprise an obsession and its common confirmatory features (above). These 42 items were subjected to EFA analysis using MPlus, and CFA using AMOS to generate model fit. The items were examined as two composite constructs: *theorised obsession*; and *confirming obsession*, the confirmatory features of the presence of obsession. As a forced answer scale, there were no missing responses for any of these items, therefore n=215.

5.7.1.1. Theorised obsession

EFA using ML estimation was used for the items proposed to capture the constructs underlying *theorised obsession* (ie. *intrusive thoughts* that are *unwelcome*, *difficult to control* and *internally attributed*). These constructs were derived from psychopathology literature, and are typically thought to be constructs that together comprise an illness. Whilst this research proposes that entrepreneurs may experience obsessional thoughts about their ventures, it recognises these thoughts may in some way differ from those experienced by people made ill by their obsessional thoughts. Therefore, EFA is considered more appropriate as this research is truly an exploration, aimed at investigating whether similar factors exist within the context of entrepreneurship, rather than seeking to confirm the presence of these factors as specified by psychopathology. MPlus is used in preference to SPSS to conduct the EFA on this proposed construct because it offers improved efficiency when there are many items and an unknown number of factors (Cunningham 2010 personal communication), as in this situation.

The factor theorised obsession did not emerge as conceptualised. Accordingly, the word “obsession” is replaced with “intrusive thoughts” to capture the distinction between the obsession as developed using Rachman *et al.*’s (1980) model and the construct emerging from this analysis. Hypothesis 10 is reworded⁸ to reflect this change in understanding.

⁸ From “Entrepreneurial obsession is positively correlated with SEABusiness and SEATime” to “Entrepreneurial Intrusive Thoughts is positively correlated with SEABusiness and SEATime”.

5.7.1.2. EFA theorised obsession

The 24 items theorised to reflect four constructs recognised as the necessary and sufficient features of an obsession were subjected to EFA to clarify the underlying factors. Items were iteratively removed as indicated by item and factor correlations until a model that fitted the data was obtained: ($\chi^2(74) < 100.21, p = .02$, SRMR = .03, RMSEA = .04 (.02, .06), TLI = .96 CFI = .98. The factors that emerged did not exactly reflect the factors as theorised because of the emergence of the factor *adapt to intrusive thoughts* and lack of clarity around the factor *internal attribution*.

The pattern and structure of the emergent factors demonstrate construct validity (see Table 5-14), inter-item reliability and discriminant validity are confirmed through Cronbach's alpha and low correlations between the items (see Table 5-15 and Table 5-16).

Table 5-14 Pattern and structure coefficients demonstrate construct validity

	Unwelcome thoughts		Adapt to thoughts		Intrusive thoughts		Difficult to control	
	<i>Pattern</i>	<i>Structure</i>	<i>Pattern</i>	<i>Structure</i>	<i>Pattern</i>	<i>Structure</i>	<i>Pattern</i>	<i>Structure</i>
EF4	0.46	0.42	-0.21	-0.29	-0.18	-0.19	-0.02	0.02
EF7	0.63	0.68	0.13	0.26	0.33	0.50	-0.04	0.15
EF8	0.72	0.73	-0.05	-0.08	-0.06	0.06	0.06	0.18
EF20	0.60	0.64	-0.06	-0.03	0.07	0.18	0.17	0.29
EF17	-0.01	-0.03	0.79	0.79	-0.01	0.33	-0.02	0.04
EF19	0.01	0.01	0.68	0.71	0.07	0.38	0.04	0.11
EF17	-0.01	-0.03	0.79	0.79	-0.01	0.33	-0.02	0.04
EF19	0.01	0.01	0.68	0.71	0.07	0.38	0.04	0.11
EF21	0.19	0.21	0.54	0.63	0.23	0.48	0.07	0.06
EF25	-0.12	-0.12	0.59	0.60	0.02	0.26	0.05	0.08
EF27	-0.01	-0.02	0.80	0.78	-0.04	0.31	0.03	0.09
EF33	-0.16	-0.02	-0.04	0.32	0.81	0.76	-0.01	0.12
EF34	-0.07	0.08	0.01	0.36	0.79	0.79	0.03	0.18
EF39	0.26	0.38	0.07	0.36	0.66	0.75	0.04	0.22
EF40	0.09	0.18	-0.13	0.07	0.48	0.44	0.00	0.10
EF43	0.11	0.24	0.03	0.32	0.67	0.71	0.04	0.20
EF44	0.17	0.24	-0.14	-0.09	0.04	0.08	0.38	0.41
EF50	-0.02	0.20	0.02	0.12	0.01	0.25	1.19	1.19
EF30	0.14	0.14	0.12	0.04	-0.21	-0.09	0.25	0.24

The items do not fit the constructs of the theory of an obsession as hypothesised in this research largely because of the absence of the factor *internal attribution*, and the emergence of a factor *adapt to intrusive thoughts*. This emergent factor (*adapt to*

intrusive thoughts) is consistent with how entrepreneurs experience thoughts about their business based on the data that emerged from Study 1.

Table 5-15 Theorised Obsession alphas, pattern and structure coefficients, and construct items

<i>Factor</i>	<i>α</i>	<i>Retained Items</i>	<i>Structure coefficient</i>
1. Unwelcome thoughts	.72	EF7 I understand why I have these intrusive thoughts about my business but sometimes I wish I could turn them off	.68
		Ef8 Intruding thoughts of my business are not welcome	.73
		Ef20 I try to dismiss intruding thoughts about my business from my mind	.64
2.Adapt to thoughts	.82	Ef17 I am used to thoughts of my business intruding into my head	.79
		Ef19 I have recurring thoughts about my business that just come into my head	.71
		Ef21 I can't stop thoughts about my business intruding so I just got used to it happening	.63
		EF25 Intrusive thoughts about my business are a product of my interest in my business	.61
		EF27 I have learnt to live with thoughts of my business intruding into my mind	.78
3.Intrusive thoughts	.82	EF33 I can't concentrate on anything else because thoughts of my business fill my head	.76
		EF34 I find myself thinking about my business instead of thinking about what I am doing	.78
		EF39 Thoughts of my business insinuate themselves into my head, against my will	.75
		EF40 I do not know where these thoughts about my business come from	.44
		Ef43 Thoughts of my business interfere with other activities I am doing	.71
4.Difficult to control thoughts	.65	EF44 I set rules for myself about how much time I spend thinking about my business	.41
		Ef50 I consciously quarantine thoughts about my business so I can focus on other activities	1.19

Table 5-16 Theorised obsession - factor correlations

Factor Correlations	Unwelcome thoughts	Adapt to thoughts	Intrusive thoughts	Difficult to control thoughts
1 Unwelcome thoughts	(.72)			
2 Adapt to thoughts	.02	(.82)		
3 Intrusive thoughts	.18	.43	(.82)	
4 Difficult to control thoughts	.18	.08	.20	(.65)

The items that remain, and the groupings for these items, suggested that the thoughts are experienced as intrusive thoughts and that the entrepreneur tries to control their experience of these thoughts, which implies that the thoughts are unwanted, unwelcome, and ultimately the entrepreneur adapts to the intrusive thoughts. The Cronbach's α is below acceptable benchmark of .70 for the factors *unwelcome thoughts* and *difficult to control thoughts*.

- *Difficult to control* internal consistency measure is Cronbach's $\alpha=.60$. Accordingly, the inter-item mean is inspected as factors with low numbers of items can report lower Cronbach's α (Briggs *et al.* 1986). Inter-item means are .48, .29 and .21. However, EF30 (*I work to keep thoughts about my business in perspective with thoughts about the rest of my life*) is removed because it loads on the factor at <.32, leaving a two-item factor. According to Briggs *et al.* (1986) a two item factor is acceptable because the purpose of this research to explore a construct in order to test a theory, and not to develop a scale. The mean for EF44 and EF50 (.48) falls marginally outside the acceptable range of .20 to .40, but below .50 the cut-off level at which item redundancy is suggested. Thus, the internal consistency of this two-item factor is acceptable despite a Cronbach's $\alpha<.70$ (Briggs *et al.* 1986).
- *Unwelcome thoughts* internal consistency improves to Cronbach's $\alpha=.72$ with the removal of newef4, thus making it acceptable as a three item factor.

The items for each theorised factor were summed, and the average used as a scale score. The four scale scores were then summed together, and the average used as the score for the composite factor *theorised intrusive thoughts*.

5.7.1.3. Confirming obsession

EFA using ML estimation in SPSS was used on the three constructs that comprise the *confirming obsession* composite construct. These proposed factors were specified a priori from the literature and the exact relationships between the items and factors is based on previous theory.

5.7.1.4. EFA confirming obsession

The scale was derived from relevant literature and responses obtained to questions in Study 1. As such, the items have been theorised to reflect the constructs that confirm the presence of an obsession (thoughts that generate anxiety (*DSM-IV 2000*), motivate

action (Rachman 2003), and are imbued with *great personal significance* (Salkovskis 1985). Consistent with the change to terminology above, this factor has been renamed *confirming intrusive thoughts*.

The EFA using ML estimation revealed that the highest correlation is .63, thus there were some items moderately correlated, suggesting that they measure the same thing. The KMO of .89 indicated that the sample has good potential for factor analysis, ie 88.8% of variance in the measured variables is common variance and indicates underlying factors in the data. Bartlett's Test of Sphericity is significant (χ^2 (171) = 1891.27, $p = .00$), indicating that there are sufficient non zero inter-correlations amongst the measured variables to warrant an EFA (SPSS 1989). Total variance explained (58.73%) supports adequate factor structure for a self report scale (Gorsuch 1983), three eigenvalues >1 suggesting three factors. This is supported by the scree plot. The goodness-of-fit index shows a difference between the model implied correlation matrix and the sample input matrix (χ^2 (117) = 189.38, $p = .00$), suggesting that the data does *not* fit the model well (Bagozzi *et al.* 1996).

Cross loading items (>.40) were removed and the EFA rerun. This improved the fit of the data to the model (χ^2 (12) = 16.11, $p = .17$), and together with the following pattern and structure coefficients and the low intercorrelations demonstrate discriminant validity (see Table 5-17 and Table 5-18).

5.7.1.5. Scale scores of entrepreneurial intrusive thoughts

Scale scores were derived by taking the average of the items remaining in each factor after EFA. Composite scale scores for *theorised intrusive thoughts* and *confirming intrusive thoughts* were generated by averaging the scale scores for the underlying factors. A scale score for the proposed meta construct *entrepreneurial intrusive thoughts* (EIT) was generated by averaging the two composite scale scores. These scale scores are derived in order to explore and test a theory of EIT, and not as part of the development of a scale for measurement purposes.

Table 5-17 Pattern and structure coefficients confirming intrusive thoughts

	Generate Anxiety	Great Personal Significance	Motivate Action	Generate Anxiety	Great Personal Significance	Motivate Action
	Structure			Pattern		
EF22 Intruding thoughts of my business distress me	.89	-.07	-.21	.92	.00	.11
EF41 Intruding thoughts of my business make me feel uncomfortable	.71	.06	-.25	.72	.09	.02
EF24 A sense of anxiety accompanies intruding thoughts about my business	.67	-.04	-.35	.61	-.11	-.21
EF11 My business brings me the greatest pleasure in my life	-.06	.83	-.31	-.01	.86	.11
EF14 My business gives me a reason to get up every day	.03	.62	-.29	.05	.62	-.01
EF1 My business has the greatest significance for me	.00	.58	-.33	-0.21	.53	-.10
EF18 When I have these intrusive thoughts I must work on my business to relieve the feelings they generate inside me	.27	.37	-.81	.01	.04	-.78
EF23 These intrusive thoughts make me feel compelled to work on my business	.36	.24	-.74	.12	-.07	-.74
EF35 Working on my business relieves the strong feelings that build inside me	.11	.35	-.58	-.08	.11	-.56

Table 5-18 Factor Correlations

Factor Correlations	Generates Anxiety	Great Personal Significance	Motivates Action
1 Generates Anxiety	(.78)		
2 Great Personal Significance	-.04	(.72)	
3 Motivates Action	-.33	-.43	(.74)

Note - values in brackets on the diagonal are the Cronbach's α . Cronbach's α for each factor demonstrates good inter-item reliability with each factor's alpha above the cut-off benchmark of .70.

5.7.1.6. Components of entrepreneurial intrusive thoughts

To further explore the elements of this construct and their potential relationships, a bivariate correlation analysis was conducted with EIT and its two components (*theorised intrusive thoughts* and *confirming intrusive thoughts*) and obsessive and harmonious passion.

Table 5-19 reports the relationships, showing moderate statistically significant relationships between OP, EIT, and *confirming intrusive thoughts*, and a weak statistically significant relationship between OP and *theorised intrusive thoughts*. There was no correlation between HP and any construct. Thus, the two constructs that comprise EIT have a relationship with OP individually and collectively.

Table 5-19 Relationship between obsessive passion and components of EIT

	HP	OP	Theorised Intrusive Thoughts	Confirming Intrusive Thoughts	EIT
HP	1.00				
OP	0.06	1.00			
Theorised Intrusive Thoughts	-0.11	.31**	1.00		
Confirming Intrusive Thoughts	0.02	.52**	.60**	1.00	
EIT	-0.05	.46**	.89**	.90**	1.00

** . Correlation is significant at the 0.01 level (2-tailed).

5.7.2. Sustained entrepreneurial action scale

Two formative indices are proposed as capturing the dependent variables: SEATime and SEABusiness.

Following Diamantopoulos *et al.* 2001⁹, 9 of the 11 indicators initially proposed to capture these two hypothesised factors are used for the index, and two are used as global indicators for comparison purposes. The validity and reliability of these formative indices was assessed as follows:

Content specification. In this research, *Sustained Entrepreneurial Action* is the construct of interest. It comprises two factors: sustained business activity and sustained time commitment by the individual entrepreneur to the conduct of that business.

⁹ see Chapter 4 for discussion of this method

Indicator specification. To keep the range of items that could be used as indicators of sustained business activity to a manageable number, key indicators of business activity as accepted by academics and the business press are used. These indicators imply the existence of actions or decisions taken by the entrepreneur as part of the process of sustained entrepreneurship.

- Indicators of business activity are: staff numbers and growth in staff numbers, turnover and growth in turnover, return on investment and growth in return on investment (Achtenhagen *et al.* 2010; Baron *et al.* 2010; Rauch *et al.* 2000).
- Indicators of the entrepreneurs' sustained commitment include the amount of time they work in or on their ventures (Fried *et al.* 2009). This is supported by the results from Study 1 in which the data strongly suggested that the entrepreneurs commit significant amount of their time to the establishment, management and development of their ventures. Thus, indicators for the entrepreneurs' time commitment to the business are: hours per week spent at the workplace; working on the business at home; working on the business whilst on holiday.

Indicator Collinearity. A regression was conducted in SPSS to allow examination of collinearity diagnostics (using gender as the dependent variable). Tolerance scores indicating the proportion of the variable's variance not accounted for by the other independent variables in the regression ranged between .584 and .909. Values close to zero indicate linear relationships among the independent variables (Todman *et al.* 2007) suggesting that the indicators used in the SEA construct are not highly correlated, and their indicator coefficients can be used as validity constructs. An additional test is the variance inflation factors (VIF). These range from 1.711 to 1.100 well below the accepted VIF cut off of 10 (Kleinbaum *et al.* 1988), suggesting that all these indicators can be retained within this index. Finally, indicator collinearity was tested for by conducting a bivariate correlation analysis which showed correlations below .85 (the highest being .56), further confirming that the variables measure separate things (Kline 2005) and can be retained in the index.

External Validity. A global question that captures the essence of the factor was used to correlate the items proposed for inclusion in the index.

- *SEABusiness* - A question about the age of the venture ("This business has been operational for ____ years") was used as a global item that summarised the essence of the sustained nature of the business activity undertaken in the venture. That is, the age of a venture speaks to the sustained nature of the

entrepreneurial actions taken. The six business indicators used to determine sustained entrepreneurial action were correlated with this item. Three items were significantly correlated with this statement (at $p=.000$). Three items were unrelated and subsequently dropped from the index. The index is now comprised of the following items:

SEA2 In 2008, the approximate number of full time and part time staff employed in this business ____

SEA4 Approximate average annual turnover for the period 2006-2008 was: ____

SEA6 In the period 2006-2008, the average rate of growth pa for this business was ____.

- *SEATime* - A question was developed to capture the sustained nature of the entrepreneur's personal commitment to the venture (+ am working on my business even if I am sick"). That is, it is proposed that a person indicating that they work on their business -even when sick" implies a work commitment that is sustained regardless of other intrusions into their life. The three personal time commitment indicators were all significantly correlated with this question (at $p<.05$) and all three indicators have been retained in the index:

SEA8 On average, I spend ____ hours per week at my place of work.

SEA9 In addition to my average working hours at my place of work, I average ____ hours per week working on my business whilst I am supposed to be off duty.

SEA10 I am working on my business when I am on holiday.

Having followed a process that suggests these two indexes are both reliable and valid, the items remaining in each index were summed and their average used as the scale score in which the higher the score the greater the amount of SEABusiness and SEATime. Each appears as a construct in the SEM that follows.

5.7.3. Entrepreneurial success scale

An attempt to capture the construct *entrepreneurial success* was made using two sources of information. The entrepreneurship literature was examined in an attempt to determine what it is that indicates that entrepreneurial success has been achieved. The literature did not reveal a definition or a consistent set of indicators for

entrepreneurial success. Thus, the dominant source of information utilised for this scale is the data emerging from Study 1, which revealed frequent indicators entrepreneurs use to determine entrepreneurial success. From these two sources, 10 items were developed seeking to capture the construct *entrepreneurial success*.

An EFA using ML generated 68% nonredundant residuals $>.05$ in the reproduced correlations matrix, therefore an EFA using PAF is preferred (Cunningham 2008). Reanalysing the data using PAF resulted in a KMO of .72 with significant Bartlett's Test of Sphericity ($\chi^2(45) = 475.36, p = .00$) suggesting good potential for factors using EFA (Cunningham 2008). Three factors were indicated. The first factor explaining 31.24% of the total variance, and cumulatively the three indicated factors explained 55.38% of the variance suggesting sufficiency for three factors in a self-report scale (Gorsuch 1983). However, the scree plot does not clearly support a three-factor solution, there being one clear factor above the elbow of the plot not two. Furthermore, 17% of items had reproduced correlations $>.05$ suggesting a lack of good fit between the observed and reproduced matrices for these items (Tabachnick *et al.* 2006). Pattern matrix loadings range from good to excellent (Comrey *et al.* 1992).

Given the suggestion of factors, but lack of clarity around the number of factors, items generating nonredundant residuals $>.05$ were removed (Tabachnick *et al.* 2006) and the data again subjected to an EFA using PAF.

The results indicate a KMO of .75 for the remaining 5 items, suggesting adequate potential for factor analysis (Todman *et al.* 2007). Eigenvalue >1 suggests one factor explaining 47.60% of variance falls within acceptable benchmarks for a self-report scale (Gorsuch 1983). The number of factors is confirmed by the scree plot which shows one factor clearly above the elbow of the plot (Tabachnick *et al.* 2006).

Table 5-20 reports the factor matrix coefficients extracted in 7 iterations. Cronbach's $\alpha = .72$ indicating satisfactory inter-item reliability for the factor *Entrepreneurial Success*. A scale score for *Entrepreneurial Success* is derived by taking the average of the 5 items remaining in the factor after EFA.

Table 5-20 Entrepreneurial Success factor: retained and removed items

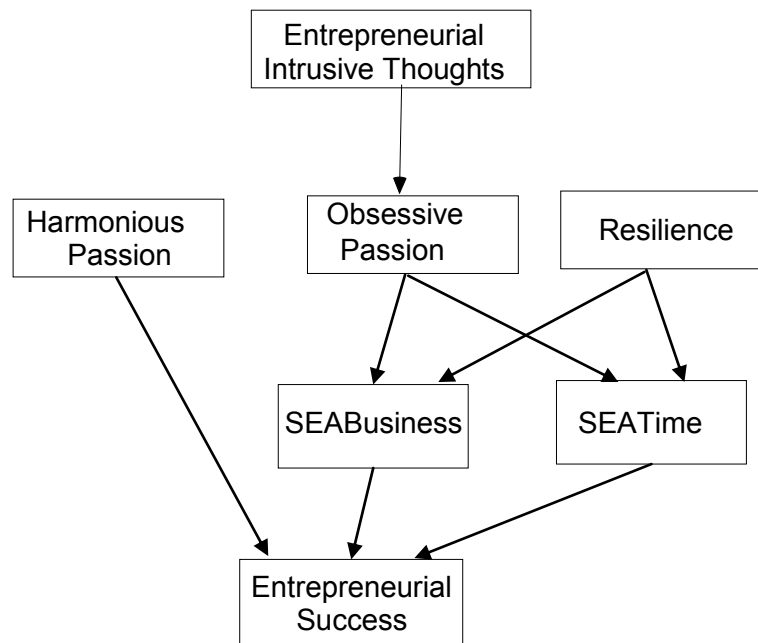
I am successful if I:	Factor
ES7 Am personally satisfied with my life and business	.73
ES6 Continually grow my business	.63
ES5 Do only that which I want to do in life and business	.61
ES9 Exceed the business goals I set out to achieve in founding at least one business	.57
ES2 Build a business sustainable beyond my personal involvement	.38
ES3 Receive public recognition from others eg awards, remunerated board seats, speaker invitations	Removed
ES4 Exit or sell some of my business for profit	Removed
ES8 Achieve the business goals I set out to achieve in founding at least one business	Removed
ES10 Never fail	Removed

5.7.4. Full structural equation model

A full structural equation model was developed in line with the conceptual framework emerging from Study 1. It was hypothesized that entrepreneurs experience passion for, and develop an obsession concerning, their ventures and that they are resilient individuals. Together passion, obsession and resilience form part of the explanation as to how some, and not others, are able to sustain entrepreneurial action in the face of the challenges and difficulties of entrepreneurship and, in so doing, potentially experience entrepreneurial success.

More specifically, it was hypothesised that the passion entrepreneurs experience for their ventures is dualistic in nature, and that each type of passion contributes differently to the entrepreneurs' capacity to sustain entrepreneurial action and potentially experience entrepreneurial success. Harmonious passion is related to the entrepreneurs' perception of entrepreneurial success, and does not contribute an explanation to their capacity for sustained entrepreneurial action. Whereas obsessive passion, stimulated by entrepreneurial obsession, acts in conjunction with resilience to facilitate the entrepreneurs' capacity to sustain entrepreneurial action (ie sustain the business activity of the venture and their own personal time commitment working in/on the venture). Sustained entrepreneurial action is a necessary, but on its own insufficient, antecedent to entrepreneurial success. Figure 5-2 depicts this pathway and these relationships that were tested in a SEM.

Figure 5-2 Model to be tested in SEM.



5.7.5. Final best-fit model

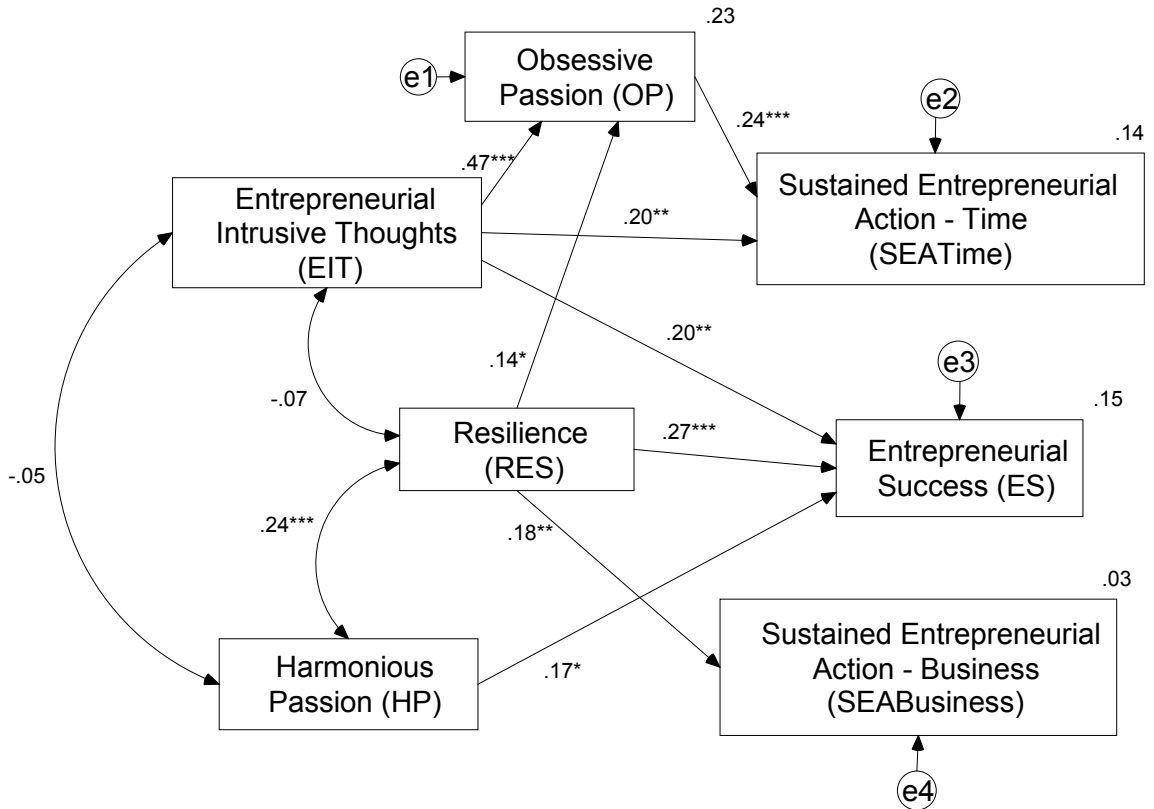
The specified model did not fit the data: ($\chi^2(8)=34.96, p=.00$, Bollen-Stine bootstrap $p=.00$). Guided by theory and using the modification indices the pathways were respecified. The amended model shown in Figure 5-3 was found to fit the data well: ($\chi^2(10)=13.00, p=.22$), SRMR = .04, RMSEA = .04 (.00, .08), TLI = .95, CFI = .98, Bollen-Stine bootstrap $p=.81$.

Some of the hypothesised standardised direct and indirect effects were significant, as were the unexpected effects:

- EIT has a direct effect on OP (.47), a direct (.21) effect on ES, and a direct (.20) and indirect (.11) effect on SEATime.
- OP has a direct effect on SEATime (.12).
- HP has a direct effect on ES (.17).
- Resilience has a direct effect on OP (.14), ES (.27), SEABusiness (.18).
- SEABusiness and SEATime have no effect on ES.

Figure 5-3 displays the standardised parameter estimates for the structural paths, together with the amount of explained variance in each of the endogenous constructs in the model, with non-significant pathways removed for clarity for the best-fit model.

Figure 5-3 Best-fit model



Note: * $p < .05$, ** $p < .01$, *** $p < .001$

5.7.6. Model results

The best-fit model gives rise to some interesting and unexpected results.

Firstly, it indicates that *sustained entrepreneurial action (SEA)* factors (*SEABusiness* and *SEATime*) do not predict *entrepreneurial success (ES)*, implying that in this research *SEA* is not a logical precursor to or predictor of *ES*. This is an important result as the lack of significant relationship between these constructs is not intuitively plausible given the naturally occurring nexus between these constructs in life and business. That is, it is reasonable to suggest that if you kept at an activity you could expect to experience success at that activity at a level of significance greater than mere chance. However, in this research, there is no significant association between these constructs; one does not predict, explain or influence the other.

Secondly, the influence of *entrepreneurial intrusive thoughts (EIT)* and *resilience (RES)* are more extensive than anticipated. Whilst the moderate and significant ($p < .001$) influence of EIT on OP was predicted, the direct and indirect effects of EIT on *SEATime* and *ES* were not anticipated. The results suggest that entrepreneurs'

intrusive thoughts about their ventures, and the obsessive passion these thoughts invoke, are part of the explanation as to why entrepreneurs invest a large amount of personal time working in and on their ventures.

The relationships between RES and all the endogenous constructs makes RES the most widespread construct in the model, whereas EIT is the most influential (see Table 5-21 for Standardised Total Effects).

Table 5-21 Standardised Total Effects

	HP	Res	EIT	OP
OP	0.00	0.14	0.47	0.00
SEATime	0.00	0.03	0.31	0.24
ES	0.17	0.27	0.20	0.00
SEABusiness	0.00	0.18	0.00	0.00

Thirdly, although passion clearly has a role in SEA and ES, it is not as was hypothesised. OP is related to SEATime ($p < .001$) and not to SEABusiness, but was initially predicted to be related to both. As hypothesised, HP has a relationship with ES ($p < .05$), and no significant relationship with SEA. However, its relationship with ES is weak which was not anticipated. The contribution of RES to SEA is also surprising, in that it is related only indirectly to SEATime. The model explained variances in the endogenous constructs as follows: 23% of OP, 3% of SEABusiness, 14% of SEATime, and 15% of ES. The standardised regression weights for the eight constructs are at Table 5-22.

Table 5-22 Standardised regression weights of best fit model

		Estimate	P
Obsessive Passion	<--- Entrepreneurial Intrusive Thoughts	0.47	***
Obsessive Passion	<--- Resilience	0.14	.019
Entrepreneurial Success	<--- Harmonious Passion	0.17	.011
Entrepreneurial Success	<--- Entrepreneurial Intrusive Thoughts	0.20	.002
Sustained Entrepreneurial Action - Time	<--- Entrepreneurial Intrusive Thoughts	0.20	.005
Sustained Entrepreneurial Action - Business	<--- Resilience	0.18	.008
Entrepreneurial Success	<--- Resilience	0.27	***
Sustained Entrepreneurial Action - Time	<--- Obsessive Passion	0.24	***

5.8. Test of hypotheses

The results of the hypotheses tests are shown in Table 5-23.

Table 5-23 Test of hypotheses

		Result	Est	S.E.	C.R.	P	Support	Beta
H ₁	High levels of passion	99% > 4 on presence of passion scale					Strong support	
H ₂	OP > HP	OP mean = 3.87 HP mean = 5.32				**/** ***	No support	
H ₃	Entrepreneurs > OP than other populations	More OP than 9/13 other populations				***	Moderate support	
H ₄	SEABusiness←--OP		-.11	.04	-1.30	.192	No support	-.10
H ₄	SEATime←-----OP		.22	.04	3.12	.002	Support	.22
H ₅	ES←---HP		.22	.03	3.27	.001	Support	.22
H ₆	High levels of resilience	Mean = 101.29				***	Strong support	
H ₇	SEATime←---RES		.11	.08	1.69	.090	No support	.11
H ₇	SEABusiness←--RES		.21	.09	2.95	.003	Support	.20
H ₈	<i>Theorised obsession is:</i> Intrusive thoughts Unwelcome Difficult to control Internally Attributed	<i>Theorised intrusive thoughts:</i> Intrusive thoughts α = .82 Unwelcome α = .72 Difficult to control α = .65 Adapt to α = .82					Partial support	
H ₉	<i>Confirming obsession is:</i> Generates anxiety Great personal significance Motivates action	<i>Confirming intrusive thoughts is:</i> Feelings of anxiety α = .78 Great personal significance α = .72 Motivates action α = .74					Support	
H ₁₀	SEABusiness←---EIT		.14	.08	1.91	.06	No support	.14
H ₁₀	SEATime←---EIT		.22	.08	3.07	.002	Support	.22
SEM	EntObsess-- →OP→SEA→ES Concurrently, RES- →SEA→ES	$\chi^2(12)=41.71$, $p=.00$					No support	

5.9. Chapter summary

This chapter reported on the analysis and results of the 215 sample data set collected in Study 2. Guided by the methodology outlined in Chapter 4, the data preparation and screening process is undertaken and described, followed by the analysis and assumption testing for each scale and construct used in this research. Finally the constructs, having been explored (if new) or confirmed (if established in the literature), their internal reliability assessed and discriminant validity confirmed as appropriate, are then computed to scale scores which are then used to test the hypotheses summarised in Chapter 1. The final process of SEM results in a new model to explain the pathways between the exogenous constructs of *resilience*, *harmonious passion*, and *entrepreneurial intrusive thoughts* and the endogenous constructs of *obsessive passion*, *sustained entrepreneurial action* (SEABusiness and SEATime) and *entrepreneurial success*.

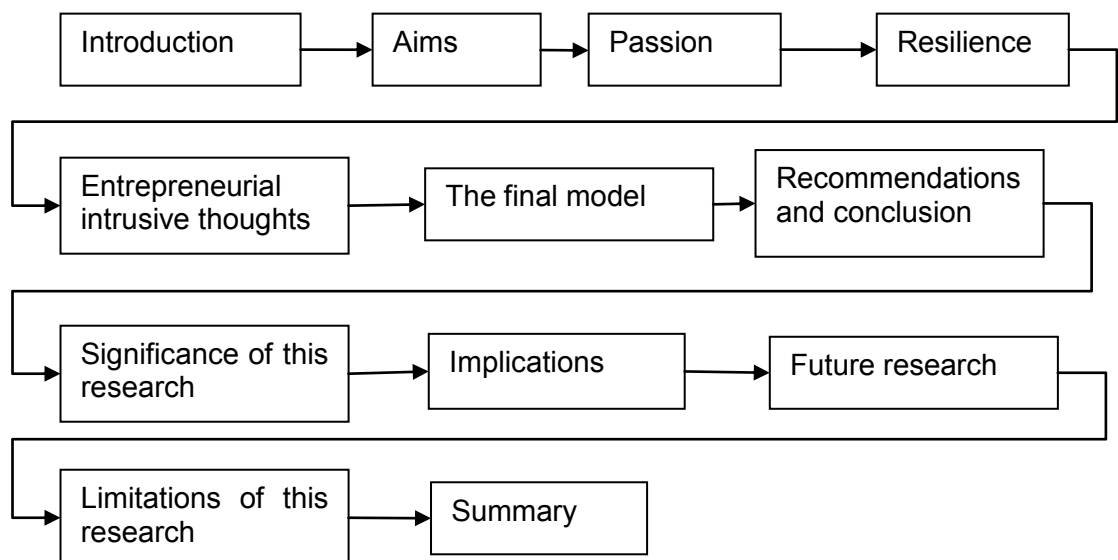
The next chapter reports the discussion on these results in the light of the hypotheses testing and draws conclusions. The implications for this research are noted and future directions discussed.

6. Discussion, Recommendations and Conclusions

6.1. Chapter introduction

This chapter reports the discussion, conclusions and implications arising from this research study. The conclusions drawn about the contribution of passion, resilience and obsession to sustained entrepreneurial action and entrepreneurial success are presented, and the significance of the findings discussed. The implications of this research for the practice of entrepreneurship by entrepreneurs, the education of entrepreneurs by academics, and the support and encouragement of entrepreneurship by policy makers are also presented. Further research opportunities identified in the research outcomes are presented, and the limitations of this research are discussed. Figure 6-1 provides a schematic of the chapter.

Figure 6-1 Chapter 6 overview



Adapted from Perry (1998)

6.2. Aims

The aim of both Study 1 and Study 2 was to explore the nature of the entrepreneur's passion, and subsequently to develop a theory as to how passion contributes towards entrepreneurial success. Study 2 refined this aim further by introducing the suggestion that passion influenced sustained entrepreneurial action, and that sustained entrepreneurial action lead to entrepreneurial success.

In the following sections, the findings of Study 2 are summarised and discussed under the key areas of passion, resilience, obsession, sustained entrepreneurial action, and entrepreneurial success. The discussion includes insights, observations and suggestions concerning the relationships hypothesised as a consequence of Study 1, and tested in Study 2. These hypothesised relationships were encapsulated in a conceptual framework proposed to contribute an explanation for sustained entrepreneurial action and, through such action, to entrepreneurial success. The discussion of the analysis of quantitative data, and the pathways that emerged from the SEM process as an improved model explaining the relationships, follows.

6.3. Passion

This research set out to examine how, when and why passion contributed to entrepreneurial action, and through such action to entrepreneurial success. The construct of entrepreneurial action was later refined as a consequence of Study 1, and passion's contribution to *sustained* entrepreneurial action and through it to entrepreneurial success became the focus of Study 2.

Thus in Study 2, a validated passion scale, which was rigorously tested in other domains, was administered to entrepreneurs. At the time Study 2 was conducted, this scale had few tests on populations of entrepreneurs. In August 2010 the scale's principal author (Professor Vallerand) was part of a seminar discussion in which he suggested that the scale should be tested in the domain of entrepreneurship to explore the passion of entrepreneurs. Thus, the following relationships were hypothesised:

- H₁ Entrepreneurs display relatively high levels of passion for their ventures as revealed by the mean ratings of the The Passion Scale.
- H₂ Entrepreneurs' obsessive passion is greater than their harmonious passion as revealed by the mean ratings of the The Passion Scale.

- H₃ Australian entrepreneurs are relatively more obsessively passionate about their passionate activity than are other sample populations, as revealed by comparative ratings of the The Passion Scale.
- H₄ Obsessive passion, as indicated by the The Passion Scale is positively correlated with SEABusiness and SEATime.
- H₅ Harmonious passion, as indicated by the The Passion Scale is positively correlated with ES.

6.3.1. Passion and entrepreneurs

The data supports H₁ (that entrepreneurs display relatively high levels of passion for their ventures). 99% of the sample averaged a score above 4 on the presence of passion scale, indicating a high level of passion for their business venture (Bonneville-Roussy *et al.* 2009; Mageau *et al.* 2009; Vallerand *et al.* 2003). Although not a surprising result given the recognised importance of passion to entrepreneurship (Cardon *et al.* 2010), it does extend the entrepreneurship literature by providing quantitative boundaries around an otherwise qualitative understanding, and does so using the results from a passion scale that has been repeatedly validated in other domains (Vallerand *et al.* 2003).

6.3.2. Entrepreneurs' passion – harmonious or obsessive in nature?

H₂ and H₃ test the idea that the passion of entrepreneurs is more obsessive than harmonious in nature. Throughout this research, it has been anticipated that obsessive passion would be the dominant passion type of the entrepreneur because entrepreneurs are observed to persist with their ventures in the face of less adaptive and maladaptive outcomes. As harmonious passion leads to disengagement from passionate activities under such situations, the expectation had been that obsessive passion would be the dominant passion of the entrepreneur. Thus, the type of passion was thought to be key to the explanation for the capacity of the entrepreneur to persist in the face of the stresses and challenges of entrepreneurship. However, H₂ is not supported by the data, as the HP mean is higher than the OP mean, and H₃ was partially supported by the data.

Australian entrepreneurs score more highly on their harmonious passion ($M=5.32$) than on their obsessive passion ($M=3.87$). Furthermore, this result is consistent with results of 13 other studies reviewed in which the mean harmonious passion scores are

consistently higher than mean obsessive passion scores (see Table 6-1 for a summary of mean results from other studies).

Overall, it seems that Australian entrepreneurs may experience higher means for *both* harmonious and obsessive passion than most other populations tested on this same measure, in particular they are amongst the populations that seem to experience the highest mean score for obsessive passion.

- The harmonious passion of Australian entrepreneurs is significantly different from all except one of the other population samples reported ($p < .001$). Australian entrepreneurs have higher means for harmonious passion scores than 7 out of the 13 populations studied in other research.
- In the case of obsessive passion, the means for the sample of Australian entrepreneurs is significantly different from all except one of the other population samples reported ($p < .001$). Furthermore, Australian entrepreneurs have higher obsessive passion mean scores than 9 out of 13 populations reported in other empirical research.

This suggests that whilst Australian entrepreneurs may experience higher levels of harmonious passion compared to some other populations, interestingly they are also more obsessively passionate than the majority of other populations tested.

However, after confirming construct and discriminant validity, the means for HP and OP changed to $M=4.83$ for HP and $M=4.23$ for OP. Thus, using the validated constructs for HP and OP suggests that the entrepreneurs' passion for their venture is more harmonious than obsessive in nature, but is also strongly obsessive. It is not feasible to compare the means on the validated constructs with other populations whose means were derived from the full 6-item scales.

Prima facie, this result seems to support part of the rationale underlying this research: that entrepreneurship requires a form of passion in which the individual does not disengage from their passionate activity in the face of less adaptive and maladaptive outcomes. This result also gives further support to the suggestion that obsessive passion may give rise to positive outcomes because it enables persistent engagement in the passionate activity (Vallerand *et al.* 2003) and is well suited to competitive environments (Amiot *et al.* 2006). Therefore, it could be argued that obsessive passion might be beneficial for an entrepreneur since recognised features of entrepreneurship are persistent engagement in the venture despite its difficulties and challenges and the presence of vigorous competition as a mechanism for venture survival.

6.3.3. Obsessive passion and SEA

H₄ tests the suggestion that obsessive passion is positively correlated with SEA. This hypothesis is partially supported.

Obsessive passion is significantly correlated to SEATime ($r=.24$, $p<.000$) but not significantly correlated to SEABusiness. This suggests that obsessive passion contributes to the explanation for sustained entrepreneurial action as indicated by the number of hours the entrepreneur personally works in/on the venture, but not as indicated by business metrics (employee numbers, average growth, and average turnover). This is an interesting and intuitively plausible finding. That is, it is reasonable to expect that an individual level variable (OP) should not show a relationship with system level variable (indicators of business performance). Recent criticism of the tendency in entrepreneurship literature to link individual level variables to business performance indicators underscores this point, the tendency being described as *“optimistic at best and perhaps misguided at worst”* (Baron *et al.* 2011, p. 261).

6.3.3.1. SEATime

It could be reasonably expected that investing many personal hours working in/on the venture (SEATime) indicates an inability or unwillingness to disengage and thus should correlate with obsessive passion.

Obsessive passion is characterised by an inability to disengage voluntarily with the passionate activity and is a function of controlled internalisation (Vallerand *et al.* 2003). The passionate activity reflects certain contingencies that are important to the individual such as feelings of self-esteem, or generates feelings of uncontrollable excitement, and thus the activity creates an interpersonal or intrapersonal pressure when it is internalised into one's identity (Vallerand *et al.* 2003). The correlation between obsessive passion and SEATime may also reflect the manner in which the passionate activity (the venture) is internalised into the entrepreneurs' identity and reflect either the important contingencies the entrepreneur attaches to the venture or the uncontrollable excitement generated by the venture.

The correlation between OP and SEATime support the suggestion that entrepreneurs develop an obsessive passion for their ventures, as evidenced by their extensive engagement in their ventures, and the hours worked in and on the venture.

6.3.3.2. SEABusiness

The lack of statistical relationship suggested by the data between obsessive passion and SEABusiness is not surprising. SEABusiness is constructed from metrics derived from the venture (employee numbers, average growth, and average turnover). It is questionable whether a direct link between the entrepreneurs' passion for their venture and achievement of these metrics is reasonable, given the array of situational variables that might equally or with greater power influence these metrics.

On the other hand, successful entrepreneurs are recognised as persistently working in and on their venture and the success of their ventures (as measured on business performance metrics) is often attributed in part to their persistent engagement in the work of the venture (Timmons *et al.* 2009). Therefore, some may argue that business metrics can be used as a proxy for evidence of the entrepreneur's sustained engagement in the venture. In this case, the lack of a path from OP to SEABusiness might be unexpected.

6.3.4. Obsessive passion and identity

Vallerand *et al.* have proposed that a passionate activity may represent a central feature of one's identity (Vallerand *et al.* 2003). It is proposed that entrepreneurship provides exceptionally high levels of personal meaningfulness (Baron *et al.* 2011), and the identity-importance of the venture to the entrepreneur has been proposed (Cardon *et al.* 2010; Murnieks 2007). Thus, the presence of obsessive passion may do little to explain the achievement of entrepreneurial outcomes (such as business performance metrics); rather its presence may reflect the importance of the venture to the identity of the entrepreneur.

6.3.5. Obsessive passion and resilience

A weak but statistically significant association ($r=.14$, $p<.05$) is found between OP and RES. A correlation between OP and RES was anticipated at the commencement of this study and formed part of the initial SEM model. Resilience suggests itself as a natural ally for a passion that facilitates persistent engagement in challenging activities.

That the relationship between OP and RES should prove to be so weak is an interesting finding, but more interesting is the slightly stronger and unexpected relationship between HP and RES ($r=.24$, $p<.000$) discussed below. It is possible the

weak relationship between OP and RES is a feature of resilience being comprised of positive elements, which in turn explains the relationship with HP.

6.3.6. Harmonious passion and ES

The indicators chosen for the construct ES were derived from Study 1, and a number of them are not dissimilar to indicators used in measures of subjective well-being and life satisfaction, both of which previous studies have shown to be positively related to harmonious passion (Stenseng 2008; Vallerand *et al.* 2006). The ES construct also includes items associated with achieving and exceeding business goals and plans. H_5 tests the suggestion that harmonious passion is related to ES, and the data supports this suggestion through a significant and positive correlation with ES ($r=.27$, $p<.001$).

Harmonious passion has been shown to facilitate concentration and positive emotions (Vallerand *et al.* 2003), and positive emotions have been shown to be linked to life satisfaction (Diener 2000). Positive emotions facilitate interpersonal relationships during task engagement (Philippe *et al.* 2009c), possibly because they enable the broadening of thought-action repertoires (Fredrickson 2001) enabling more and better solutions to problems. As the achievement of business goals and plans is often reliant upon the work of stakeholders, particularly employees, the entrepreneur's ability to effectively engage with and influence others will facilitate his/her own venture objectives.

Thus, harmonious passion's role in achieving entrepreneurial success could be two-pronged. In the first place, by engaging in the venture, feelings of harmonious passion are stimulated which are related to feelings of life satisfaction and therefore to perceptions of entrepreneurial success. Also harmonious passion's contribution to forming good task-related interpersonal relationships and broadening thought action repertoires may facilitate perceptions of success as measured against business goals and plans.

6.3.7. Harmonious and obsessive passion

Overall, this research suggests that an entrepreneur's passion is both harmonious and obsessive in nature. However, the findings did not reveal a significant correlation between obsessive and harmonious passion, suggesting that in the case of entrepreneurship the two types of passion may be independent of one another.

Interestingly, this finding is inconsistent with previous research. There are studies that report a positive significant correlation between the two passion types, that is suggested to be the consequence of shared common elements, such as the activity being one that people like, find important, and in which they invest time and energy (Ratelle *et al.* 2004; Rousseau *et al.* 2008). Furthermore, it has been observed that obsessive passion only exists when harmonious passion is in evidence (Chih-Chien *et al.* 2007). This suggestion is supported by findings from other research that reports the concurrent presence of both passion types (see page 186), further supporting the dualistic nature of passion. Passion is both harmonious and obsessive, although in this research differs in that the two types of passion are unrelated.

6.3.7.1. Cultural and activity domain differences

It is possible that the lack of association between the two passion types found in this research is a function of different cultural or activity domains.

The Passion Scale was developed on French-Canadian samples, and the significant association between the two passion types derive from North American samples. Furthermore, these samples come from sporting, educational or artistic domains. The differences encapsulated in the cultural or activity domains may influence how the questions were interpreted and answered.

6.3.7.2. The passion scale and entrepreneurs

At the time of analysing this research only two other studies using The Passion Scale on entrepreneurs as the population of interest had been found (Brannback *et al.* 2006; Cardon *et al.* 2010).

The Cardon *et al.* (2010) pilot study uses a sample of 57 North American entrepreneurs, and finds a significant association between the two passion types. However, such a small sample size makes it difficult to replicate the results beyond the sample used, and does not meet the criteria for statistical stability used in this research of 5 responses per item (Tabachnick *et al.* 2006), the Passion Scale being a 16 item scale.

The Brannback *et al.* (2006) study was conducted on a population of students. This research produced no significant results for The Passion Scale and therefore the results were not reported in the article (Brannback *et al.* 2006).

Thus, for differing reasons, neither study is included for comparison purposes with this research data.

6.3.8. Overall contribution of passion

The results of this study extend the entrepreneurship literature by providing quantitative results for the nature of entrepreneurial passion using a well accepted passion scale. Additionally, it gives the Passion Scale a test in the domain of entrepreneurship in an Australian sample, and provides more statistical support for the beneficial outcomes of harmonious passion.

The data shows that obsessive passion is positively and significantly related to one SEA factor (SEATime). Furthermore, Australian entrepreneurs do experience higher levels of obsessive passion than most other populations researched to date, and their obsessive passion for their venture is almost as high as their harmonious passion ($M=4.83$ for HP and $M=4.23$). This suggests that obsessive passion is a feature of entrepreneurship and that its contribution is to facilitate the capacity of the entrepreneur to sustain entrepreneurial action in terms of the time they personally invest working in or on their ventures despite the challenges and difficulties they encounter.

Since obsessive passion is associated with less adaptive and maladaptive outcomes, its presence in the subject population raises for entrepreneurs, policy makers, educators, and other stakeholders the importance of being aware of passion's dark side. With awareness comes the ability to recognise when obsessive passion is in play and to provide or seek appropriate interventions to manage its downside. Knowing that entrepreneurs are likely to develop an obsessive passion for their ventures, and the potential implications of such a passion for the individual, enables entrepreneurship educators to factor this into their training programs and thus alert current and aspiring entrepreneurs to the importance of keeping in check their obsessive passion.

Ultimately, this research suggests that each passion type contributes differently to entrepreneurial outcomes. This finding is consistent with the literature which finds obsessive and harmonious passion are related to differing outcomes (Stenseng 2008; Vallerand *et al.* 2008a). This research suggests that:

- Obsessive passion is not a hindrance to experiencing successful outcomes but is unlikely to facilitate them, as was originally anticipated when this research commenced. Obsessive passion's contribution to entrepreneurship may be two fold, and explain:

- How entrepreneurs identify with their venture. That is, through a controlled internalisation process in which contingencies important to the individual or uncontrollable excitement generated by the activity create an interpersonal or intrapersonal pressure resulting in the passion for the activity being obsessive in nature.
- How entrepreneurs find the capacity to sustain entrepreneurial action in the face of the stresses and challenges of the process, as evidenced by how much they work in or on their ventures. However, the amount of time they personally invest in working on their ventures does not contribute to their achievement of entrepreneurial success or other productive outcomes as captured by SEABusiness.
- Harmonious passion is positively and significantly related to ES, and is suggested to facilitate successful outcomes through its association with positive emotions and resilience.
- This research suggests that:
 - HP and RES work productively together to facilitate the entrepreneur to achieve entrepreneurial success.
 - OP and RES work productively together to facilitate the entrepreneur's capacity for sustained entrepreneurial action (time).
 - The entrepreneur's capacity for sustained entrepreneurial action as indicated by business metrics is unrelated to either OP or HP.

6.4. Resilience

Study 1 aimed to explore how childhood experiences of disadvantage or deprivation contributed to entrepreneurial action, and through sustained entrepreneurial action to entrepreneurial success. Emerging from the data in Study 1 is the suggestion that it is resilience, possibly developed through childhood experiences of deprivation and disadvantage (risk factors) interacting with protective factors, that may be an important explanatory variable in the capacity of an entrepreneur to sustain entrepreneurial action. Consequently,

- H₆ Entrepreneurs display relatively high levels of resilience as revealed by the Connor Davis Resilience Scale.
- H₇ Resilience is positively associated with SEATime and SEABusiness.

6.4.1. How resilient are entrepreneurs?

Study 2 results confirm H_6 , showing that entrepreneurs have significantly ($p < .001$) higher mean scores ($M = 101.29$, $SD = 10.19$) than did three comparative populations.

The comparative studies were investigating the resilience of population groups unrelated to entrepreneurship (nursing and primary care patients, and a North American general population). Two were not Australian populations, raising questions about their suitability for comparison with this research sample on the grounds of both culture and group membership. Nonetheless, it is interesting to note the mean RES score was significantly higher in Australian entrepreneurs than these populations. This supports the suggestion expressed in the business press (Gome *et al.* 2003) and emerging from qualitative research (Amanjee *et al.* 2006) that resilience may be a trait or characteristic of entrepreneurs and part of the explanation as to why certain people can perform in the face of stressors and challenges inherent in new ventures (Hmieleski *et al.* 2008).

6.4.2. Resilience and SEA

H_7 is partially, but weakly, supported. A weak but significant ($r = .18$, $p < .01$) relationship between RES and SEABusiness, and no direct relationship between RES and SEATime, was found. RES indirectly impacts SEATime through OP, albeit the effect is minimal (.045).

Resilience is included as part of the construct psychological capital, the others being self-efficacy, optimism, and hope (Youssef *et al.* 2007). Psychological capital is identified as a form of capital in which intangible assets and resources possessed by an individual in the form of their behaviours, thoughts and actions influence productivity and thereby contribute to the achievement of success in entrepreneurship (Envick 2005). Furthermore, resilience is identified as an important characteristic for entrepreneurs because it facilitates them to flourish in situations that others may find overwhelming (Amanjee *et al.* 2006) and therefore empowers the entrepreneur to persevere through the uncertain environments and conditions of new venture creation and entrepreneurship (Hmieleski *et al.* 2008).

In this research RES explains some of the capacity of the entrepreneur to sustain entrepreneurial action as indicated by business metrics (employee numbers, average growth, and average turnover) and very marginally SEATime. Thus, as this research is exploratory in nature, the SEA constructs are retained in the model as part of the

exploration of the effect of the entrepreneurs' resilience. However, as suggested in the context of OP, there is an array of situational variables that might equally or with greater power, influence these business metrics that comprise SEABusiness. Therefore, this relationship is not intuitively plausible given that RES is constructed as an individual level variable. A relationship with the personal construct of SEATime would be more plausible, but this was indirect and marginal at best. On the other hand, successful entrepreneurs are recognised as persistently working in and on their venture, and the success of their ventures (as measured on business performance metrics) is often attributed in part to their personal contribution to the venture (Timmons *et al.* 2009). Therefore, some may defend the relationship between RES and SEABusiness. Nonetheless, these results for SEATime and SEABusiness do not clearly explain the observation that entrepreneurs need to, and do, display resilience.

6.4.3. Resilience and ventures

The word resilient is also used to describe ventures, corporations, teams and communities (Blatt 2009; Dewald *et al.* 2010; Powley 2009; Simmons 2009) and so it is not unreasonable to explore the possibility of a relationship between RES and SEABusiness from this perspective. However, in this research, RES has been constructed and measured as a personal trait and not as a feature of the venture itself or a feature of the venture derived directly or indirectly through the employment of resilient individuals.

Therefore, the relationship between RES and SEABusiness is surprising because of the disparity between the two constructs: one a trait of the individual entrepreneur, the other described by business elements (employee numbers, average growth, and average turnover).

This observation points to a suggestion concerning future attempts to capture and measure the resilience of a venture or organisation. That is, that *all* individuals in an organisation might need to be tested for the trait resilience in order to confirm the resilience of an organisation. Alternatively, perhaps a conceptualisation of *non-trait resilience* is needed for use in describing the resilience of an organisation. That ventures are often described as resilient does not contribute towards an explanation for the relationship between SEABusiness and RES.

6.4.4. Resilience and ES

This research revealed a relationship between RES and ES that requires further comment. Although the link from RES to ES was not directly through SEATime and SEABusiness as argued in the establishment of this research, RES in this research is demonstrated to contribute to ES.

The construct of ES, derived largely from the results of Study 1, is not dissimilar to items used to develop life satisfaction constructs. In this study the item *“I am successful when I am personally satisfied with my life and business”* is consistent with item in the Satisfaction with Life Scale¹⁰ used in passion research *“I am satisfied with my life”* (Rousseau *et al.* 2008; Philippe *et al.* 2009a). Therefore, a relationship between RES and ES can be understood given that the items share common elements with items included in satisfaction scales.

This finding supports previous findings that, through building resilience, life and work satisfaction can be increased (Cohn *et al.* 2009; Youssef *et al.* 2007). This result suggests that the importance of resilience to entrepreneurs is in its capacity to facilitate their own perceptions of life and work satisfaction, and in so doing find meaning and value in sustaining their efforts in the face of stressors and challenges of entrepreneurship. That is, resilient entrepreneurs may find the journey more worthwhile than those with lower levels of resilience, who may in fact withdraw from the venture perceiving that they have not or could not achieve entrepreneurial success. Accordingly, the results of this research suggest that the presence of resilience in the individual entrepreneur directly contributes to their perception of entrepreneurial success.

6.4.5. Resilience and harmonious passion

The positive significant relationship between resilience and harmonious passion deserves comment, despite not having been hypothesised as part of the testable model.

The two constructs do share some common elements: positive emotions and life satisfaction. Harmonious passion contributes to the experience of positive affect and emotions during engagement in the passionate activity, and beyond activity engagement (Vallerand *et al.* 2003). Positive affect represents a major component of

¹⁰ Satisfaction With Life Scale; Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). *The Satisfaction with Life Scale. Journal of Personality Assessment*, 49, 71–76.

subjective well-being (Diener 2000) and engaging in an activity because it stimulates feelings of harmonious passion, is suggested to have positive effects on psychological adjustment (Seligman *et al.* 2000; Vallerand *et al.* 2003). Subjective well-being refers to an individual's evaluation of their life, and is stimulated by the experience of more pleasant than unpleasant emotions, engagement in interesting activities, experience of more pleasures and fewer pains, and feeling satisfied with their life (Diener 2000). Resilience has been found to mediate the relationship between positive emotions and life satisfaction. This can be explained as the resilience facilitating an individual's capacity to develop resources that contribute to living well (Cohn *et al.* 2009).

Thus, the significant association between RES and HP ($r=.24$, $p<.000$), and their individual weak statistically significant relationships with ES ($r=.17$, $p<.05$ for harmonious passion, and $r=.27$, $p<.000$ for RES) suggest that both RES and HP are part of the explanation for the achievement of ES.

6.4.6. Resilience and obsessive passion

Discussed above in the OP results, this weak relationship ($r=.14$, $p<.05$), is another path in the model and worthy of further research in order to understand the contribution of RES to entrepreneurship.

6.4.7. Overall contribution of resilience

These findings extend the entrepreneurship literature by providing:

1. Statistical support to the suggestion that entrepreneurs do need to be resilient (Duening 2010; Hayward *et al.* 2010). Specifically that:
 - a. The experience of ES is in part explained by the presence of the resilience of the entrepreneur.
 - b. Resilience is a pervasive variable demonstrating a significant positive relationship with all the dependent variables, either directly or indirectly, and correlating significantly with one independent variable (HP).
 - c. Resilience is necessary in order for the entrepreneur to perceive entrepreneurial success.
 - d. The presence of resilience is a minor part of the explanation for the entrepreneur's capacity to sustain entrepreneurial action as initially argued.

2. A place for HP as an explanatory variable in entrepreneurship, through statistical support for a relationship between HP and RES.
3. An insight into how widely resilience effects entrepreneurship, being the one variable in this research that is related significantly either directly or indirectly to the majority of the other variables.

These findings may extend the resilience literature by identifying another domain in which resilience developed in childhood plays out with potentially productive results. It may also be of interest to careers educators as another life choice (entrepreneurship) to which resilient students may be suited.

Finally, knowing that resilience is part of the explanation for entrepreneurial success may benefit the entrepreneur and key stakeholders such as financiers, educators and policy makers. Some argue that resilience can be learned or the underlying traits enhanced through training (Albornoz 2008; Jensen *et al.* 2008). It is entrepreneurs who found businesses and in so doing provide jobs and are therefore the drivers of economic growth (Schramm 2011). Therefore, proactive steps can be taken to include resilience development in entrepreneurship education, and government and other agency programs involved in the stimulation and encouragement of entrepreneurship.

6.5. Entrepreneurial intrusive thoughts

Arising from Study 1 is the suggestion that entrepreneurs may experience obsessional thoughts about their ventures. It was subsequently theorised that the presence of obsession may contribute to the entrepreneurs' capacity to sustain entrepreneurial action through the stimulation of obsessive passion, which then contributed to their capacity to sustain entrepreneurial action. Thus, one of the objectives of Study 2 was to explore and test this suggestion.

A model of disordered obsession, described in the clinical psychology literature, was used as a guide for conceptualising obsession in the absence of any other definitively agreed model that could be identified in a literature search. The model comprised two composite constructs identified in Study 2 labelled in this research as *theorised intrusive thoughts*, and the features *confirming intrusive thoughts*.

The results suggest that entrepreneurs do experience intrusive thoughts about their ventures that may be similar to, but not the same as, those intrusive thoughts described in obsession. The presence of these intrusive thoughts seems to be confirmed by the presence of similar factors that confirm obsession: thoughts that

generate feelings of anxiety (DSM-IV 2000) and are imbued with great personal significance (Salkovskis 1985). The factor intrusive thoughts that motivate action (Rachman *et al.* 1980) did not emerge as hypothesised. Rather a factor emerged suggesting the reverse: that intrusive thoughts *do not* motivate action.

Although they do not mirror obsession as described in the clinical literature, these results clearly suggest that entrepreneurs experience intrusive thoughts that impact them. Together the two components are described as *entrepreneurial intrusive thoughts* (EIT), to distinguish this phenomenon from clinical obsession, and underscore that this is an attempt to describe and capture a phenomenon that has some similarities to normal obsession and is experienced by this particular population.

6.5.1. Theorised intrusive thoughts

The first composite construct *theorised intrusive thoughts* describes obsession as follows:

- H₈ Entrepreneurs experience obsessional thoughts about their ventures as evidenced by the presence of intrusive thoughts about their ventures that are:
- a) unwelcome, b) difficult to control, and c) internally attributed.

Although the factors that emerged from the data analysis do not match directly with the theory of obsession as experienced by those made ill by it (that is, as a disordered obsession), they are consistent enough with the theory to warrant consideration as factors that may capture and describe a normal obsession or intrusive thought. As such, the emergence of this factor suggests there is something particular about entrepreneurs' venture-related cognitions which contribute to their capacity to both experience entrepreneurial success and sustain entrepreneurial action. That is, these cognitions may take the form of subclinical obsessions or intrusive thoughts, be experienced as a matter of course by entrepreneurs, and influence the entrepreneurs' behaviour whether overtly or not.

This hypothesis is partially supported by the data in that EFA revealed factors that were similar to an obsession, with one anticipated factor not emerging, and another unanticipated factor emerging.

Three factors emerged suggesting entrepreneurs experience *intrusive thoughts* about their ventures that are *difficult to control* and *unwelcome*. Thus, these cognitions are similar to descriptions of non-clinical unwanted intrusive thoughts (Clark *et al.* 2009).

The unanticipated fourth factor that emerged suggested that entrepreneurs *learn to live with (adapt to)* the *intrusive, unwelcome, and difficult to control* thoughts about their ventures. The suggestion that people adapt to their obsessions is evident in the literature (Rachman 1978). The factor *internally attributed* did not emerge. A closer examination of the results follows.

Intrusive thoughts about the venture

This is an important feature for the presence of an obsession. In particular, item EF39 (*Thoughts of my business insinuate themselves into my head, against my will*) is crucial to the descriptions in the literature of an obsession. It is a statement taken as a direct quote from the work of Rachman *et al.*, and used by these authors to define the important distinguishing nature of the intrusive obsessional thought – that it must be insidious and against the will of the person (Rachman *et al.* 1980). Thus, it is interesting to see a factor emerge with high internal consistency ($\alpha=.82$), and item loadings that are all in the good to excellent range for pattern correlations (Comrey *et al.* 1992) with one exception. One item seems to sit uncomfortably with the others (EF40 *I do not know where these thoughts about my business come from*). However removing this item makes minimal improvements (with $\alpha=.84$, and the pattern and structure coefficients for the factor remain strong at $>.66$). Thus, all items were retained resulting in a defensible factor with good construct validity and internal reliability.

Difficult to control and unwelcome intrusive thoughts

These two factors emerged from the data with a small number of items each. Cronbach's α or inter-items means were examined to confirm the internal reliability of each factor. Pattern and structure loadings were acceptable. However, future research should attempt to incorporate more items for *difficult to control*. Two is not an adequate number of items to capture the full domain of a construct (de Vellis 2003), although they are statistically satisfactory for the purposes of this research, which seeks only to describe a construct for use in testing a theory (Briggs *et al.* 1986).

Internal attribution of intrusive thoughts

The factor *internal attribution* did not emerge from the data, possibly because the items developed to capture it were inadequate for the task.

Adapt to intrusive thoughts

Reflecting on the data that emerged from Study 1, this particular factor (*adapt to intrusive thoughts of the venture*) was foreshadowed. That is, in Study 1 some

entrepreneurs described learning to live with thoughts of their business intruding into their consciousness, and the clinical literature on obsession also refers to people learning to live with their obsession (Rachman 1978). Thus the potential importance of this aspect of intrusive thoughts was not realised until the results of the EFA were examined.

As the suggestion that *adapting to* something would be an important feature was overlooked, items were not developed to capture this specific construct. The notion that entrepreneurs adapt to their intrusive thoughts is part of items designed to tap into other constructs, ie the *unwantedness* of the thoughts and the *difficulty in controlling* the thoughts. The items developed for these constructs come largely from the statements, observations and descriptions offered by the entrepreneurs in Study 1 and therefore reflect their personal experiences. This explains why there were items in the measure available to emerge from the EFA suggesting that entrepreneurs ***adapt to*** their intrusive thoughts.

The emergence from the EFA of items that together speak strongly to this construct (***adapt to intrusive thoughts***) is particularly interesting. Pattern coefficients for the five items retained in this factor all load onto the factor at $>.54$, and therefore range from good to excellent in evaluation (Comrey *et al.* 1992). Reliability for this factor was confirmed with Cronbach's $\alpha = .82$ for 5 items, suggesting that the scale has high internal consistency.

6.5.2. Confirming the presence of intrusive thoughts

The literature also describes confirmatory features of this model. The most frequently cited are that obsessions generate strong feelings (often feelings of anxiety (*DSM-IV* 2000)), motivate action (*Rachman* 2003), and are imbued with great personal significance (*Salkovskis* 1985).

H₉ Entrepreneurs experience confirmatory features of obsession specifically the thoughts about their ventures: a) generate feelings of anxiety, b) are of great personal significance, and c) motivate action.

The data partly supported this hypothesis. The factor *motivates action* emerged as *does not* motivate action. EFA was used to examine the constructs for each confirmatory feature of an obsession and the factors were strongly captured in the data, with Cronbach's $\alpha >.77$ for each of the three factors (intrusive thoughts: *generates anxiety*, *are imbued with great personal significance*, and *do not motivate*

action). This suggests that entrepreneurs' cognitions about their venture may be intrusive thoughts that are imbued with great personal significance, and generate feelings of anxiety, but *do not* have the capacity to motivate action.

6.5.3. Entrepreneurial intrusive thoughts

H₁₀ EIT¹¹ is positively correlated with SEABusiness and SEATime.

This hypothesis was partially supported. *EIT* is positively and significantly related to SEATime ($p < .01$) and not SEABusiness. The significant relationship with SEATime suggests that intrusive thoughts are part of the explanation as to why entrepreneurs spend a large amount of time working in/on their ventures.

Surprisingly, *EIT* is positively and significantly related to ES ($p < .01$), thus it has both a direct and indirect relationship with ES.

6.5.4. EIT and obsessive passion

EIT was significantly related to *obsessive passion* ($r = .47, p = .000$). This is a particularly surprising finding as Professor Vallerand, who conceptualised *obsessive passion*, stated that obsessive passion was not part of psychopathological definitions of obsession or obsessive personality in response to a question from this researcher on 8 August 2010.

Yet *entrepreneurial obsession* was developed following a two stage model for obsession described in the psychopathology literature. Although the construct of *entrepreneurial obsession* has not emerged as theorised from the literature, instead being an intrusive thought that is unwelcome, difficult to control and to which *the entrepreneur adapts*, this relationship may be a consequence of the two constructs (EIT and OP) sharing similar elements. Both constructs¹² are centrally concerned with an activity which has great personal significance for the individual (activity valuation), has an element of unwantedness (experiences conflict with other life domains) and is difficult to control (engagement in the activity is not under the control of the individual) (Rachman *et al.* 1980; Vallerand *et al.* 2003).

¹¹ Originally conceptualised as "Entrepreneurial obsession" prior to EFA (see Chapter 5)

¹² Obsessive passion descriptors are contained within the parenthesis following the entrepreneurial intrusive thoughts descriptor.

6.5.5. Passion and obsession – a relationship?

Examining which of the component constructs of EIT influences OP was revealing, maybe inconsistent with Vallerand's personal communication that the obsessive passion construct is unrelated to the psychopathology literature that describes obsessive personality and obsession (Vallerand 2010).

Correlation analysis reveals that *theorised intrusive thoughts* are related to obsessive passion ($r = -.31, p < .00$), suggesting that obsessive passion maybe in part stimulated by intrusive thoughts about the venture.

It is the confirmatory features of these intrusive thoughts or obsessions that are most strongly related to obsessive passion (intrusive thoughts: generate feelings of anxiety, are imbued with great personal significance, but do not motivate action ($r = .52, p < .00$)). This may be because the construct of *confirming intrusive thoughts* shares similar elements to the construct of OP, in which the importance of the passionate activity to the identity of the individual is a key feature (Vallerand *et al.* 2003).

When these two components (*theorised intrusive thoughts* and *confirming intrusive thoughts*) are combined into a single construct (EIT) and used in a SEM path, the overall effect is a moderate positive relationship that is statistically significant ($r = .47, p < .000$).

Although Vallerand has suggested that *obsessive passion* is not related to obsession as understood in the context of psychopathology, the significant positive relationship found in this research may further underscore the suggestion that obsession exists on a continuum (McCrae *et al.* 1990; Rassin *et al.* 2007), and that milder versions of obsession share elements in common with *obsessive passion*.

An alternate suggestion for the relationship between Vallerand's *obsessive passion* and *entrepreneurial intrusive thoughts* is that the construct *EIT* does not accurately reflect Rachman *et al.* (1980) model of obsession and therefore is not an obsession or a form of obsession. It is difficult to prove or disprove that the *EIT* factors do or do not reflect the presence of obsession as described by Rachman *et al.* (1980) or intrusive thoughts as described by Clark *et al.* (2009) because this is a first exploration of the construct in this context. The measures developed for this research may or may not be good enough to tap into the constructs as hypothesised, and have been developed only to test the theory. In part, the uncertainty around whether or not the items developed tapped into the construct adequately may be due to the differing uses and

understandings of the language used in the survey items by the entrepreneurs who completed the survey.

Another way to examine this relationship is to remove the construct *confirming intrusive thoughts* on the grounds that it closely reflects OP and may distort the result of *theorised intrusive thoughts* in this model. Replacing EIT with *theorised intrusive thoughts* produces a variation on the model results, leaving intact the interpretation of the relationships. That is, the data continues to fit the model ($\chi^2(10)=12.03, p=.28$), SRMR = .04, RMSEA = .03 (.00, .08), TLI = .96, CFI = .98. The correlation between *theorised intrusive thoughts* and:

- OP remains acceptable and statistically significant ($r=.31, p<.000$)
- ES improves slightly from $r=.20, p<.00$ to $r=.21, p<.000$

Accordingly, EIT and Vallerand's *obsessive passion* could be related constructs as the data suggest because both reflect a quality of domination that occurs when an individual undertakes personally significant activities. That is, domination of self by a passionate activity in the case of *obsessive passion*; and domination of cognitions by intrusive thoughts about a passionate activity (the venture) in the case of *entrepreneurial intrusive thoughts*. If this is the case, passion and obsession may be related phenomena. Their combined presence should be expected, and when present in the entrepreneurial context, seem to make a productive contribution through their relationships with SEATime and ES.

6.5.6. EIT and ES

The significant relationship between EIT and ES ($r=.20, p<.00$) is interesting. A correlation analysis revealed a weak significant association between EIT component *theorised intrusive thought* ($r=.17, p<.01$) and ES, and a weak significant association between EIT component *confirmed intrusive thought* ($r=.14, p<.01$). This suggests that both components of EIT contribute equally to perceptions of entrepreneurial success.

6.5.7. Overall contribution of EIT

This research contributes to the discussion around the presence of obsession in normal populations (Clark *et al.* 2009) and obsession as a cultural phenomenon (Davis 2008). There are observations in the literature that obsession has been found to be present in normal populations (Rassin *et al.* 2007). It is suggested to be part of the repertoire of human behaviour (Macdonald *et al.* 1999) and a phenomenon that exists

on a continuum (Mathew 2004). Obsession and obsessive personality types are associated with significant strengths such as perfectionism, attention to detail, devotion to work (Kyrios *et al.* 2008); are linked to “genius” (Davis 2008); and of benefit to society when harnessed and put to good use (Rachman *et al.* 1980). The statistical research processes used in this research may give some support to the suggestion that non-clinical obsession exists in the general population and that non-clinical obsession or intrusive thoughts can make a productive contribution to society. Furthermore, this research makes an early attempt to capture the phenomenon of intrusive thoughts as experienced by entrepreneurs, and in so doing it addresses a key finding emerging from Study 1 that obsession is under described and under researched in the literature.

This research also contributes to the entrepreneurship literature which has recently heard the call for new theory to use in understanding entrepreneurial phenomena by “plowing up more soil and digging deeper” or using intelligent argument or conjecture to guide research exploration of interesting phenomena for which no theory exists (Lumpkin 2011; Miller 2007). The suggestion explored in this research, that entrepreneurs experience obsessions related to their ventures (*entrepreneurial intrusive thoughts*), is not entirely conjecture and it is not a phenomenon for which no theory exists. This suggestion marries together the theory of nonclinical obsessions/intrusive thoughts with information derived from qualitative interviews from which emerged a suggestion of something particular about the way entrepreneurs experience cognitions about their ventures.

It is not and has not been the contention of this research that entrepreneurs experience disordered obsessions or obsessions that make them ill. It has been the implicit contention that the word “obsession” may have been hijacked from general usage by the psychopathology fraternity (Davis 2008) and attributed to a debilitating illness. The consequence is that there is now an undesirable or questionable association with the word and the productive or non-debilitating characteristics and implications of the intrusive thoughts in obsession may be overlooked.

6.6. The final model

The aim of this research was to explore a model that examined how resilience, passion and obsession might fit together to contribute to an explanation of how entrepreneurs are able to sustain entrepreneurial action and in so doing achieve entrepreneurial success. Thus:

Successful entrepreneurs experience passion and obsession for their ventures, and are resilient individuals. In conjunction with resilience and obsession, obsessive passion facilitates an entrepreneur to sustain entrepreneurial action in the face of the stresses and challenges of entrepreneurship, and in so doing, achieve entrepreneurial success. The presence of harmonious passion facilitates an entrepreneur's potential experience of entrepreneurial success.

The data did not support the proposed theory underlying this hypothesis. The model that best fits the data, and provides a cogent theory supported by, or not inconsistent with, the literature is described in the best-fit model presented at Figure 5-3.

SEA Factors

There is no significant relationship between the two SEA factors, suggesting that they may be two different constructs. The amount of time committed to working in/on a venture, and the metrics used as proxies for ongoing business activity within the venture, were used to indicate *SEA*. The lack of relationship between the two factors is interesting because it suggests that the amount of time the entrepreneur puts into his/her venture is unrelated to the business outcomes as measured by business metrics. The lack of relationship may be simply the result of the construct having been inadequately captured by the items, or the two elements of the construct having been wrongly conceived.

However, it is more likely that the result is to be expected. If so, it underscores Baron *et al.* (2011) recent observation that relating individual-level variables directly to measures of firm performance ignores the complex dispositional, behavioural and environmental interactions that inform human behaviour and outcomes.

The relationship between SEA and ES

The data does not support the hypothesised relationship between SEA and ES. This hypothesised relationship had been an important component of the proposed theory. Specifically, it was proposed that SEA was a necessary, but on its own an insufficient, antecedent of ES.

Instead, there is no significant pathway between SEA and ES. Thus contrary to intuitively plausible expectations, ES is unrelated to SEA, at least to the extent that these constructs have been conceived for this research.

Furthermore, because these two constructs did not emerge to have a statistically significant association in this research, SEA is not the gatekeeper variable through which all other variables must pass to influence ES. Instead, what has emerged is the suggestion that the entrepreneurs' perception of ES has no relationship to the amount of time they personally invest working in the venture, or the achievement of the business metrics.

Obsessive passion working in conjunction with resilience

The initial suggestion that obsessive passion works in conjunction with resilience and that this relationship contributed to the explanation for the entrepreneurs' capacity for SEA was barely supported by the data. Instead, the best explanatory pathway that fitted the data, and is consistent with theory, is for harmonious passion to work in conjunction with resilience.

Resilience is understood to comprise components including risk and protective factors (Kaplan 1999), and protective factors include positive emotions (Cohn *et al.* 2009; Murray 2003). Thus, the construct of resilience shares some fundamentals with that of harmonious passion, which facilitates positive emotions (Vallerand *et al.* 2003) and this commonality may explain the correlation between the two, and their combined contribution to ES.

What might explain SEA?

Overall, the best-fit model suggests that the EIT explains in part the formation of an *obsessive passion* for the venture. Together *obsessive passion* and *EIT* contribute to SEATime as indicated by the amount of time the entrepreneurs spend working in or on their venture.

Their contribution to SEATime may reflect the entrepreneurs' unwillingness to disengage from the venture, but might also simply reflect the personal significance of the venture to the entrepreneurs' identity-meaning. Overall, OP and EIT offer an explanation as to why entrepreneurs are able to continue to work in and on their ventures (SEATime) in the face of the challenges, stresses and uncertainty of entrepreneurship.

In this research, only *resilience* appears to contribute an explanation toward the capacity of an entrepreneur to sustain entrepreneurial action as indicated by both the SEA factors (SEATime and SEABusiness). Although intuitively feasible, the relationship with SEATime is indirect and virtually non-existent, and the relationship with SEABusiness is also weak (Cohen 1988). Thus, resilience can be interpreted as

contributing little towards the explanation of how some and not others can sustain entrepreneurial action in terms of the time they invest in their ventures and the performance of those ventures. Once again, it is possible that the manner in which SEATime has been conceived and constructed in this research does not capture the association, rather than the proposed association being non-existent. Alternatively, it may be the difficulty in capturing the full construct *resilience*, as described by the authors of the Connor-Davidson Resilience Scale, which is responsible for the minimal association.

What is concluded from this model?

Entrepreneurial success is contributed to by RES, HP and EIT, with RES having the largest standardised total effect (.27) on ES followed by EIT (.20), and HP (.17). The total effect on SEATime is from RES (.03), but more so from obsessive passion (.24) and EIT (.31). SEABusiness is weakly influenced by RES (.18). Thus, this research suggests:

- Entrepreneurs experience both harmonious and obsessive passion for their ventures.
 - Obsessive passion contributes to SEATime.
 - Harmonious passion contributes to ES.
- The capacity of entrepreneurs to sustain entrepreneurial action as indicated by their capacity to continue to work in/on their ventures (SEATime) is unrelated to their capacity to sustain entrepreneurial action as indicated by business metrics (employee numbers, average growth, and average turnover) (SEABusiness).
- The capacity of entrepreneurs to sustain entrepreneurial action is unrelated to entrepreneurial success.
- The entrepreneurs' feelings of obsessive passion for their venture, the venture-related intrusive thoughts they experience, and to a lesser extent their resilience, provide part of the explanation for their capacity to sustain entrepreneurial action as indicated by the amount of time they work in/on their ventures.
- The entrepreneurs' feelings of harmonious passion for their venture, the venture-related intrusive thoughts they experience, and their resilience provide part of the explanation for entrepreneurial success.

6.7. Conclusions

Entrepreneurs experience passion for their ventures, intrusive thoughts about their ventures (perhaps obsessions), and are resilient individuals, which contribute differently towards their capacity to sustain entrepreneurial action and experience entrepreneurial success.

- The entrepreneurs' experience of entrepreneurial success is not related to their capacity to sustain entrepreneurial action. Instead entrepreneurial success is related to their harmonious passion for their venture, experience of intrusive thoughts (which may be obsessional thoughts) about their ventures, and their resilience.
- Passion is part of entrepreneurship, and entrepreneurs' passion for their ventures is both harmonious and obsessive in nature. Harmonious passion works in conjunction with resilience to contribute to entrepreneurial success. Obsessive passion works in conjunction with entrepreneurial intrusive thoughts to contribute to sustained entrepreneurial action-time.
- Entrepreneurs experience intrusive thoughts about their ventures that are unwelcome and difficult to control, but to which they adapt. These intrusive thoughts are imbued with great personal significance, generate feelings of anxiety but do not motivate action. Entrepreneurial intrusive thoughts contribute both to entrepreneurial success, and to the entrepreneurs' capacity to sustain entrepreneurial action as evidenced by the amount of time they spend working in or on their venture.
- The entrepreneurs' resilience influences their capacity to sustain entrepreneurial action and their experience of entrepreneurial success. The influence of resilience on their capacity to sustain entrepreneurial action–business is not immediately explicable; and resilience has a minimal and indirect, but statistically significant, influence on their capacity to sustain entrepreneurial action–time through obsessive passion. The entrepreneur's resilience directly contributes to entrepreneurial success.

6.8. Significance of this research

The research represents an early effort to investigate the role of passion in Australian entrepreneurship, and consequently contributes to the entrepreneurship literature in general. More specifically, by empirically addressing the relationships between

cognitive and affective processes and entrepreneurial outcomes this research contributes to a growing field of interest in the entrepreneurship literature.

Firstly, this research adds to the entrepreneurship literature by providing empirical evidence of passion in entrepreneurship. Whilst theoretically passion is recognised as an important contributor to effective entrepreneurship, empirical tests of how it contributes are in the nascent stage. This research uses a conceptualisation of passion as a phenomenon that is dualistic in nature and provides an early test of The Passion Scale on a population of entrepreneurs. In so doing, this research provides insights into how the dualistic nature of the entrepreneurs' passion contributes to their capacity to sustain entrepreneurial action and experience entrepreneurial success. Furthermore, this research enables broad comparisons between the levels of passion of entrepreneurs compared with other population samples.

Additionally, this research extends the literature on The Passion Scale; by giving it a test in a domain where it has had few tests (entrepreneurship), on a national culture seemingly untested using this scale, and with a sample size large enough to assure statistical stability of the results.

Secondly, this research explored a phenomenon that appears to be under described in the literature, that of obsession as experienced by normal populations. In Study 1 it was observed that entrepreneurs appear to have to intrusive thoughts about their ventures which are difficult to control, unwelcome, generate feelings of anxiety and motivate them to action. Thus, the idea that entrepreneurs might be able to sustain entrepreneurial action because of the strength of their obsession was explored in Study 2. Taking a cue from Maslow, who suggested that to know a phenomenon one must look beyond those made ill by it (Maslow 1970, p. 33) and respected scholars who call for the exploration of new, interesting or inexplicable conditions of entrepreneurship (Lumpkin 2011; Wiklund *et al.* 2010), this research attempted to capture and test a phenomenon initially described as entrepreneurial obsession and later revised to entrepreneurial intrusive thoughts. This construct (EIT) was put in an explanatory model of entrepreneurial success. In so doing, a relationship emerged between EIT and obsessive passion, and EIT and entrepreneurial success, suggesting another contribution to our knowledge about how cognitions might influence passion and success.

Thirdly, this research uses statistical techniques to confirm the presence of resilience in entrepreneurs. Thus, it adds to the entrepreneurship literature that proposes entrepreneurs are resilient people, by confirming through the administration of a well-

accepted resilience scale the presence of factors proposed to comprise resilience and then demonstrates how resilience influences entrepreneurial success and sustained entrepreneurial action.

Fourthly, this research attempts to capture and describe two key aspects of entrepreneurship: sustained entrepreneurial action and entrepreneurial success. It does so by first allowing these constructs to emerge from qualitative interview data, and then by testing them quantitatively. In the case of SEA this research constructs two formative indices, a method gaining momentum for constructs formed by their indicators as opposed to reflected by their indicators. As such, this work offers a contribution towards the use and development of formative indicators, and towards the description and measurement of two important entrepreneurial phenomena.

The final contribution of this research is its methodology. A project using mixed methods, it attempts to explore what is meant when entrepreneurs speak of their “passion” for their ventures, and helps to understand how that passion contributes to their capacity to sustain entrepreneurial action and achieve entrepreneurial success. The emergent data from the interviews was used to inform the development of the survey completed by 215 entrepreneurs. The survey comprised established measures that tested known constructs, and measures developed from the qualitative data and the literature. The results of the quantitative study further refined the understanding of how passion contributes to success in entrepreneurship. At this stage in the development of the domain’s understanding of passion, this is one of the few research projects to use mixed methodology to explore, examine and test passion’s contribution to entrepreneurial success.

Ultimately, this research contributes to the field of entrepreneurship by providing some insights into why some and not others are able to succeed at entrepreneurship, and how passion may contribute to entrepreneurial success.

6.9. Implications

This research was exploratory in nature and resulted in a model proposed to explain the relationships between the variables and entrepreneurial success. In so doing, it has several implications for entrepreneurship’s practitioners, educators and policy makers.

By describing a phenomenon termed entrepreneurial intrusive thoughts, and articulating its elements, this research suggests that entrepreneurs experience intrusive

venture-related cognitions that might influence their behaviour. This may have implications for the health and well-being of entrepreneurs by reinforcing the need for training and intervention programs that focus on management strategies for intrusive thoughts. It may also shed light on the entrepreneurs' capacity for sustained entrepreneurial action in terms of the amount of time they invest working in and on their ventures, thus adding to the observations in the literature of a productive aspect to obsession.

The evidence of resilience as part of the explanatory pathway towards entrepreneurial success provides an opportunity to enlighten prospective entrepreneurs and educators to the need for personal resilience. Indeed, the findings about the presence for all three key variables (passion, resilience and obsession) strengthens a call for the inclusion in entrepreneurship education programs of information about these phenomena, how they may influence an entrepreneur, and how they may be managed or enhanced.

The surprising lack of association between sustained entrepreneurial action and entrepreneurial success has practical implications for entrepreneurs. It may be helpful for entrepreneurs to be aware of the lack of association between these two phenomena. It suggests that the amount of personal time the entrepreneur invests working in/on their business (SEATime) does not facilitate achievement of business performance metrics (the elements of SEABusiness) or their perceptions of success. Whilst this idea is not new knowledge to the management and business literature, such a clear quantitative result can send a strong message to current and prospective practitioners. Knowing this may lead entrepreneurs who need it to proactively seek balance in their work lives. The knowledge may also facilitate the capacity to delegate responsibility for work to others, which in turn may ultimately lead to business growth, itself a desirable economic outcome.

Moreover, the lack of significant relationship between SEA and ES statistically reinforces for the entrepreneurship community that success is not dependent upon the achievement of business metrics. The lack of significant relationship between the two components of SEA (SEATime and SEABusiness) statistically reinforces the futility of using individual level variables to predict business performance.

6.10. Future research

This research provides a number of opportunities for future research arising from the exploration of passion, resilience and obsession and their contribution to entrepreneurial action and entrepreneurial success.

In general, research could be undertaken to improve and further develop the constructs of, and scales for: sustained entrepreneurial action, entrepreneurial success, and entrepreneurial intrusive thoughts. Future research could examine these scales on another representative sample or using a longitudinal research design.

The results from The Passion Scale suggest an opportunity for further research to examine the lack of association between harmonious and obsessive passion found in this research, and to capitalise on the findings regarding the dualistic nature of the entrepreneurs' passion and the role of each passion type in successful entrepreneurship.

The suggestion emerging from Study 1, that venture-related cognitions influence the behaviour of entrepreneurs, is interesting. To support this observation, entrepreneurship academics note that venturing is a form of occupation that causes burnout, involves personal sacrifices, creates huge workloads and can be a long, slow slog (Timmons *et al.* 2009). Thus, the possibility of venture related intrusive thoughts and their impact could be an interesting area to examine further, particularly in the context of work-life balance or psychological well-being. Its relationship with entrepreneurial success is particularly interesting and gives support to the suggestion that there is an upside to obsession.

Although this research has explored the suggestion of entrepreneurial intrusive thoughts, it is very much nascent work on the construct. Whether the suggestion of entrepreneurial intrusive thoughts resonates with other researchers, so that some may continue to explore the suggestion that obsession might influence entrepreneurial action and success, remains to be seen. If others are interested in exploring this suggestion further, another contribution of this research would be the development of an initial measure for entrepreneurial intrusive thoughts awaiting confirmation and validation through further testing.

6.11. Limitations of this research

There are several limitations to this research that need to be taken into account by readers of this work.

Firstly, variation in age and experience of participating entrepreneurs may potentially affect or bias the research findings, and the self-selecting nature of the sample (ie people opted in to the survey) may generate results that are not representative of the wider population of entrepreneurs (Saunders *et al.* 2007). However, entrepreneurs and entrepreneurship are characterised by heterogeneity (Davidsson 2007), making it difficult to find a group that is representative of the population of entrepreneurs. On the other hand, that these entrepreneurs choose to participate in the research may not be uncharacteristic, as entrepreneurs are recognised as being generous with their time and advice (Timmons *et al.* 2009). Nonetheless, caution is required if the results of this work are to be compared to results from other groups defined as entrepreneurs.

The self-report nature of the survey raises other potential limitations. Firstly the survey relies in part on recall, and participating entrepreneurs may experience memory decay and hindsight bias in providing their responses (Davidsson *et al.* 2011). Additionally, there is a view that self-report surveys are susceptible retrospective bias (Shepherd *et al.* 1999). However, reviews of the literature have also demonstrated that biasing factors, negative affect and acquiesces do not have strong, consistent effects (Conway *et al.* 2010) and therefore a self-report survey is not always inappropriate. In this research, a self-report survey is an appropriate method to collect data as the constructs explored are of a personal nature; they are phenomena experienced by the individual; and so they are not objectively measureable. Furthermore, the potential for common methods bias is addressed by confirming construct validity of all constructs, demonstrating a lack of overlap between constructs measured in the same instrument via discriminant validity measures, and ensuring methodological separation of measurement by separating items relating to the same construct in the survey (Conway *et al.* 2010), as demonstrated in Chapter 5.

There are limitations of this research based on the use of SEM. A SEM is at best an approximation of reality, its theory is merely the abstract set of ideas that link together the concepts that comprise the SEM (Bollen *et al.* 1991). At the best the model and the theory can only be approximately right, and the model can only ever be rejected, not proved to be valid, as its relationships from cause and effect cannot be proved in isolation of all other possible influences (Bollen *et al.* 1991). Many other explanations may exist for model fit, other than the one offered in this research. Furthermore, the variables selected for the research influence the outcome, and the question remains as to whether important explanatory variables have been omitted from this model.

Qualitative research forms an important component of this study. It is limited by the experience, understandings, expectations and interpretations of one researcher. Another researcher faced with the same information may well have identified and constructed a different set of variables proposing to explain the relationships and pathways, which may have resulted in the testing of a different or altered SEM. The attention given to the qualitative methodology and analysis, and the return to the literature for further insight into emerging data, is offered in mitigation of this limitation.

This research employs three new constructs (sustained entrepreneurial action, entrepreneurial success, and entrepreneurial intrusive thoughts) that emerged from the qualitative data and as such, this research is the initial exploration and development of these constructs. The presence of new constructs as dependent variables may represent a limitation of this research. However, they are constructs for well-accepted entrepreneurial outcomes and as such need to be conceptualised in order they may be captured and included in future research. In an attempt to mitigate these limitations, best practice in qualitative and quantitative methodology has been adopted and applied at each stage of the research process.

Finally, the subjective opinion of the respondents was used to discern the level of achievement and growth in the business metrics that underpin the SEA construct. Therefore, these reported levels may be the result of, or affected by, the individual biases of the entrepreneur thus presenting another limitation of this research.

6.12. Summary

In this research, the research questions were explored and an understanding has emerged, although without definitive resolution. To conduct this research constructs were identified and statistically confirmed, and interrelationships between constructs tested in a SEM process. The implications of the resulting best-fit model have been highlighted, and the contributions of this research and the possibilities for future research have been raised.

This research provides an initial framework for future research into passion, resilience, entrepreneurial intrusive thoughts, sustained entrepreneurial action, and entrepreneurial success. As passion is an emerging field of research within entrepreneurship that is likely to evolve further, this research sheds some light into key areas where further research is required.

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Appendix 1 Ethics Approval Study 1

From: Keith Wilkins [KWilkins@groupwise.swin.edu.au]
Sent: Tuesday, 24 March 2009 11:55 AM
To: Rosemary Fisher; Janice Langan-Fox
Subject: SUHREC Project 2009/025 Ethics Clearance

To: Prof Janice Langan-Fox/Ms Rosemary Fisher, FBE

Dear Janice and Rosemary

SUHREC Project 2009/025 Passion, Knowledge and Uncertainty in Successful Entrepreneurial Action Prof Janice Langan-Fox, FBE; Ms Rosemary Fisher Approved Duration: 24/03/2009 To 31/12/2012

I refer to the ethical review of the above class project protocol undertaken on behalf of Swinburne's Human Research Ethics Committee (SUHREC) by a SUHREC Subcommittee (SHESC4). Your responses to the review, as emailed yesterday and today, were given consideration by a Subcommittee delegate.

I am pleased to advise that, as submitted to date, the project may proceed in line with standard on-going ethics clearance conditions here outlined.

- All human research activity undertaken under Swinburne auspices must conform to Swinburne and external regulatory standards, including the current National Statement on Ethical Conduct in Research Involving Humans and with respect to secure data use, retention and disposal.

- The named Swinburne Chief Investigator/Supervisor remains responsible for any personnel appointed to or associated with the project being made aware of ethics clearance conditions, including research and consent procedures or instruments approved. Any change in chief investigator/supervisor requires timely notification and SUHREC endorsement.

- The above project has been approved as submitted for ethical review by or on behalf of SUHREC. Amendments to approved procedures or instruments ordinarily require prior ethical appraisal/ clearance. SUHREC must be notified immediately or as soon as possible thereafter of (a) any serious or unexpected adverse effects on participants and any redress measures; (b) proposed changes in protocols; and (c) unforeseen events which might affect continued ethical acceptability of the project.

- At a minimum, an annual report on the progress of the project is required as well as at the conclusion (or abandonment) of the project.

- A duly authorised external or internal audit of the project may be undertaken at any time.

Please contact me if you have any queries about on-going ethics clearance. The SUHREC project number should be quoted in communication.

Best wishes for project.

Yours sincerely

Keith Wilkins
Secretary, SHESC4
Research Ethics Officer
Swinburne Research (H68)
Swinburne University of Technology

Appendix 2 Open Ended Questions Entrepreneur - Study 1

- How would you describe yourself? (whatever way you feel best describes you as a person)
- How would you describe passion?
- Are you a passionate person in general?
- Could you please describe a critical decision you had to make in your business – one that had a make or break role in the business.
- On a scale of 1-5, how important was this decision ie how critical was it to the success of your business?
- To what extent did you experience uncertainty and risk surrounding that decision?
- What do you think others thought about the decision – did their view differ from yours?
- Was the decision you made successful or not?
- Please describe the role you think passion played in that critical decision?
- How emotional was the critical decision-making process for you?
- How did you feel when you were in the process of making that decision?
- What did you do to facilitate coping with the decision making process?
- Do you have a passion for your business?
- How do you think passion comes into the day to day aspects of your business?
- Would you describe your passion for your business as obsessive?
- Does being obsessively passionate benefit
 - your business –how or why?
 - you –how and why?
 - your relationships –how and why?
- Do you think there is a downside to your feelings of passion? If so, what are they?

I want to move on now to talk about your childhood, and some of the experiences you had:-

- What was your early childhood like (eg., your parents, their child rearing practices, the wider environment you lived in, particular indelible impressions, other significant adults)?
- What would you say marked out the predominant and important attitudes and views of your parents?
- Did you feel different to other children? (if so, Why?)
- How did you feel about being different when you were a child?
- Can you remember how you felt or thought about the things that other children had, that you didn't have?
- Did you experience any great sadness or anxiety as a child that has lodged itself in your memory?
- Did undertake moneymaking activities as a child? If so How? Why? Were you successful at making money?
- Have the experiences of your childhood contributed to your feelings of passion? If so, how?

I want to move on now to talk about business success:-

- Do you think you have achieved business success?
 - If yes – why do you think you have achieved business success?
 - If no - why do you think you have not achieved business success?
- How would you define success?
 - Do you think you are successful?

- If yes - why?
 - If not - why not?
- Does work-life balance apply to you in running your business? Please expand on how work life balance does/does not apply to you.
- What advice would you give to someone wanting to be an entrepreneur about the downside of entrepreneurship?
- Do you have any comments you would like to make about this research?
- Is there anything else you would like to say?

Appendix 3 Open Ended Questions Referent - Study 1

- E has nominated you/suggested I speak to you as you are a person important to him/her. Can you tell me what it is about your relationship with E that results in you being a key person to him/her?
- How would you describe E as a person?
- E has told me about a critical decision X. Can you tell me about that decision, the period surrounding that decision, and how it impacted E?
- Was the decision a successful one for E and/or the business? Why?
- In your view is E a passionate person? If so, how do you and others experience E's passion?
- Where do you think E's passion come from?
- Does E's passion help or hinder him/her in the business?
- Do you think E is an obsessive person?
- Does being obsessive/not obsessive help or hinder E as an entrepreneur?
- Do you think E's business is a successful one?
 - If yes – why do you think E's business is successful?
 - If no - why do you think E's business is not successful??
- Is E a successful entrepreneur?
 - If yes – why do you think E is successful?
 - If no - why do you think E is not successful?
- Is there anything else you would like to say?

Appendix 4 Research Proposal Entrepreneur

16 January 2012
J B Citizen
XYZ Pty Ltd
32 A Street
Suburb 3121

Dear Person

I would like to invite you to participate in a research project, conducted under the auspices of Swinburne University of Technology, which will explore how passion contributes to decision-making and entrepreneurial success.

As a successful founding entrepreneur you are particularly well placed to comment on the difficulties and demands of establishing and growing a business that contributes to the economy. As you know, it is through the insights and experiences of successful practitioners that others are both encouraged and able to learn; and through which policies and incentives are influenced.

If you were willing to participate in this project I would be pleased to meet you at your business premise, or a nominated location, at a time and date convenient to you. A telephone conversation is a feasible alternative should that be preferable to you. I have attached a brief outline of the project for your information.

I can be contacted on 03/9214 4619, mobile 0409 169 950, or 1070754@student.swin.edu.au and I look forward to your reply.

Yours sincerely



Rosemary Fisher

Enc

**Faculty of Business &
Enterprise**

Mail H25
PO Box 218 Hawthorn
Victoria 3122 Australia

Telephone +61 3 9214 4619

Facsimile +61 3 9214 5336
<http://www.swin.edu.au>

Critical Decision Making and Entrepreneurial Success

Brief description of project

This study will interview 10 entrepreneurs in order to examine the nature of entrepreneurial success and passion particularly in the context of a critical business decision.

While we see and hear in the press entrepreneurs experience passion for their businesses in general, our understanding of the implications of that passion, its origins and consequences, are not well understood and have not been systematically addressed. It is suggested that passion is a necessary but insufficient determinant of entrepreneurial success; that passion is established through a combination of the personality characteristics and childhood experiences of the entrepreneur and that successful entrepreneurs have a degree of insight and self-reflection that moderates their passion and in so doing contributes to their success. I am hoping that by interviewing successful entrepreneurs I will gain the insights needed to shed some light on the nature of entrepreneurial decision-making and the role of passion in entrepreneurial success.

Volunteer entrepreneurs from a cross section of industries are sought for this research project, and interviews of up to 1 hour will be conducted in person at the entrepreneur's place of business or by telephone. Where feasible, interviews will also be conducted with referents of the entrepreneur. Anonymity of all participants is guaranteed.

Benefits anticipated from the project

In exchange for their participation, entrepreneurs will be offered copies of articles produced from the research, and the executive summary of the research will be made available to the participating entrepreneur.

Primarily this project is being undertaken to fulfil the requirements of an academic course (Phd). The research will ask the entrepreneur to describe their 'journey', and therefore provide an opportunity to reflect on the success of their business and how certain factors do or do not contribute to their success. We expect this process to provide illuminations about how a business can be successful (or more successful) and that information in turn can contribute to advice, training and mentoring of future entrepreneurs and students of entrepreneurship.

Questions for the Entrepreneur

In this interview you will be asked to speak about:

- Yourself
- A critical decision (make or break for the business) that you made
- Your feelings of passion
- Your childhood experiences
- Your sense of work life balance
- Your perceptions of success

PROJECT INFORMATION STATEMENT

Project Title - Critical Decision Making and Entrepreneurial Success

Investigators

Professor Janice Langan-Fox
Professor Dean Shepherd
Assoc Professor Soma Pillay
Ms Rosemary Fisher

Introduction to Project

This project is being undertaken to develop some insights into the nature of entrepreneurial passion, its impact on entrepreneurial decision-making, and ultimately passion's contribution to entrepreneurial success.

What this project is about and why it is being undertaken

It is suggested that passion is a necessary but insufficient determinant of entrepreneurial success; that passion is established through a combination of the personality characteristics and childhood experiences of the entrepreneur and that successful entrepreneurs have a degree of insight and self-reflection that moderates their passion and in so doing contributes to their success. While we see and hear in the press entrepreneurs experience passion for their businesses in general, our understanding of the implications of that passion, its origins and consequences, are not well understood and have not been systematically addressed. I am hoping that through interviewing 10 successful entrepreneurs I will gain the insights needed to conduct further research with 140 entrepreneurs. The results of both studies will be used to shed some light on the nature of entrepreneurial decision-making and the role of passion in entrepreneurial success.

The aims of this research are to:

- Establish how passion impacts on critical decision making of entrepreneurs.
- Develop a set of principles that explains the role of passion in entrepreneurship.
- Inform the contents of an interview schedule for use in a future study with 140 entrepreneurs to test the propositions arising from this research.

Project interests

The purpose of the project is mainly to satisfy the requirements for an academic qualification. However it is hoped that this activity will also give participating entrepreneurs an opportunity to reflect on the nature of their passion about their business/s.

What participation will involve

You will be asked to give up to 1 hour of your time to participate in an interview designed to:

- Collect demographic data on your business
- Identify the nature of the entrepreneur's passion and illuminate aspects of the passion, its possible origins, and its effect on the entrepreneur and his/her business
- Understand the effects of passion on entrepreneurial decision making
- Create a set of criteria for use in determining entrepreneurial and business success

The information gained from the project will be:

- Aggregated to form a view of passion in the context of entrepreneurship
- Used to develop an interview schedule that will form the basis of interviews with up to a further 140 entrepreneurs.

The results of all interviews will be analysed and used to inform a variety of publications including but not restricted to research papers, journal articles thesis and academic forums. **Your name and the name of your company/ies will not be mentioned in any report, thesis, journal article, or any publication whatsoever.**

Participant rights and interests

The investigators conducting this research abide by the principles governing the ethical conduct of research. This form and the accompanying participant information package provide an outline of the research project and the benefits to yourself and the community.

You will be asked to sign a release form throughout the process of this research. If so, your response should indicate that:

- You have received the subject information package and have read its contents.
- You clearly understand the nature of this study and that you have been given an opportunity to discuss the project with the researcher prior to your participation.
- Your participation over the duration of this project is voluntary and may be terminated by yourself in writing at any time without comment or penalty.
- You may direct further enquiries about the project to the researchers (details below). You may direct enquiries or complaints regarding the ethical conduct of this investigation to the Swinburne Research Ethics Officer, telephone +61 3 9214 5218.

Participant Rights and Interests – Free Consent/Withdrawal from Participation

Participation in this research is voluntary, and free from any coercion or perceived coercion. You are free to participate or not.

Volunteer entrepreneurs have been sought via entrepreneurship and/or innovation networks, peak industry bodies, personal and academic/educational networks, and direct targeting of individuals as consequence of recent media exposure. Volunteer entrepreneurs have been sought from Victoria, New South Wales and South Australia. Potential volunteers will be recruited through a number of methods:

- Telephone call to arouse interest in participating and to arrange a date/time to meet.
- Personal introductions from mutual contacts.
- Personalised letter inviting them to participate and advising that the researcher will contact them by telephone to determine their willingness to participate (contact details gained via industry/professional/network association)

Your valid consent will be obtained through signing of the Consent Form.

You are able to withdraw from participation in the research at any time, and have your data and/or interview material withdrawn from the research, without question or explanation, should you request.

Participant Rights and Interests – Privacy & Confidentiality

Your responses will be anonymous and confidential. Your name will be replaced by a code.

All identifiable data will be kept in secure, locked conditions at either Swinburne or the researcher's home. Electronic data will be stored in encrypted form. Following completion of this study all identifiable data will be destroyed. Only de-identified data will be kept, and this will be stored in a locked cabinet at Swinburne University by the first investigator as required by ethical approval procedures.

Your signed consent form will be stored separately to the data collected, to contribute to anonymity through the separation of the data and consent form, accessible only to the listed first and fourth researchers.

Research Output

Research output will include journal articles, conference papers and presentations. While results from the study may appear in publications such as journals and conference proceedings, it will not be possible to identify individual participants through these publications. Participants are welcome to ask for, and receive, an executive summary of the final research findings, as well as copies of any publications arising from the research.

Further information about the project – who to contact

If you would like further information about the project, please do not hesitate to contact:

Rosemary Fisher
C/- Research Office
Faculty of Business and Enterprise,
Swinburne University of Technology,
Level 6, 60 Williams Street
Victoria 3122, Australia
Telephone: 03 9214 4619
Mobile: 0409 169 950
Email - 1070754@student.swin.edu.au

Professor Janice Langan-Fox, PhD
Professor of Management,
Faculty of Business and Enterprise,
Mail H25,
Swinburne University of Technology,
PO Box 218, Hawthorn,
Victoria 3122, Australia
Telephone: 03 9214 4619
Email - JaLanganFox@groupwise.swin.edu.au

Concerns/complaints about the project – who to contact:

This project has been approved by or on behalf of Swinburne's Human Research Ethics Committee (SUHREC) in line with the *National Statement on Ethical Conduct in Human Research*. If you have any concerns or complaints about the conduct of this project, you can contact:

Research Ethics Officer, Swinburne Research (H68),
Swinburne University of Technology, P O Box 218, HAWTHORN VIC 3122.
Tel (03) 9214 5218 or +61 3 9214 5218 or resetethics@swin.edu.au

SIGNED CONSENT FORM

Project Title: Critical Decision Making and Entrepreneurial Success

Principal Investigator(s): Professor Janice Langan-Fox

Ms Rosemary Fisher

1. I consent to participate in the project named above. I have been provided a copy of the project information statement and this consent form and any questions I have asked have been answered to my satisfaction.

2. ***Please circle your response to the following:***

- | | | |
|----------------------------------------------------------------------|------------|-----------|
| ▪ I agree to be interviewed by the researcher | Yes | No |
| ▪ I agree to allow the interview to be recorded by electronic device | Yes | No |

3. I acknowledge that:

- (a) my participation is voluntary and that I am free to withdraw from the project at any time without explanation;
- (b) the project is for the purpose of research and not for profit;
- (c) any personal or health information about me which is gathered in the course of and as the result of my participating in this project will be (i) collected and retained for the purpose of this project and (ii) accessed and analysed by the researcher(s) for the purpose of conducting this project;
- (d) my anonymity is preserved and I will not be identified in publications or otherwise without my express written consent.

By signing this document I agree to participate in this project.

Name of Participant:

.....

Signature & Date:

Appendix 5 Consent Materials Referent

16 January 2012

J B Citizen
Macanudo Pty Ltd
32 James Street
Richmond 3121

Dear Person

I would like to invite you to participate in a research project, conducted under the auspices of Swinburne University of Technology, which will explore how passion contributes to decision-making and entrepreneurial success.

xxxx has already participated in an interview for this research, and has nominated you as an important person to him/her whom I should for an interview about xxxx.

If you were willing to participate in this project I would be pleased contact you by telephone at a time and date convenient to you. I have attached a brief outline of the project for your information.

I can be contacted on 03/9214 4619, mobile 0409 169 950, or 1070754@student.swin.edu.au and I look forward to your reply.

Yours sincerely



Rosemary Fisher
Enc

**Faculty of Business &
Enterprise**

Mail H25
PO Box 218 Hawthorn
Victoria 3122 Australia

Telephone +61 3 9214 4619

Facsimile +61 3 9214 5336
<http://www.swin.edu.au>

Critical Decision Making and Entrepreneurial Success

Brief description of project

This study will interview 10 entrepreneurs in order to examine the nature of entrepreneurial success and passion particularly in the context of a critical business decision.

While we see and hear in the press entrepreneurs experience passion for their businesses in general, our understanding of the implications of that passion, its origins and consequences, are not well understood and have not been systematically addressed. It is suggested that passion is a necessary but insufficient determinant of entrepreneurial success; that passion is established through a combination of the personality characteristics and childhood experiences of the entrepreneur and that successful entrepreneurs have a degree of insight and self-reflection that moderates their passion and in so doing contributes to their success. I am hoping that by interviewing successful entrepreneurs I will gain the insights needed to shed some light on the nature of entrepreneurial decision-making and the role of passion in entrepreneurial success.

Volunteer entrepreneurs from a cross section of industries are sought for this research project, and interviews of up to 1 hour will be conducted in person at the entrepreneur's place of business or by telephone. Where feasible, interviews will also be conducted with referents of the entrepreneur. Anonymity of all participants is guaranteed.

Benefits anticipated from the project

In exchange for their participation, entrepreneurs will be offered copies of articles produced from the research, and the executive summary of the research will be made available to the participating entrepreneur.

Primarily this project is being undertaken to fulfil the requirements of an academic course (Phd). The research will ask the entrepreneur to describe their 'journey', and therefore provide an opportunity to reflect on the success of their business and how certain factors do or do not contribute to their success. We expect this process to provide illuminations about how a business can be successful (or more successful) and that information in turn can contribute to advice, training and mentoring of future entrepreneurs and students of entrepreneurship.

Questions for the Entrepreneur

In this interview you will be asked to speak about:

- Your relationship with & perceptions of your Entrepreneur
- A critical decision (make or break for the business) made by your Entrepreneur
- Passion, obsession and success in relation to your entrepreneur

PROJECT INFORMATION STATEMENT

Project Title - Critical Decision Making and Entrepreneurial Success

Investigators

Professor Janice Langan-Fox

Professor Dean Shepherd

Assoc Professor Soma Pillay

Ms Rosemary Fisher

Introduction to Project

This project is being undertaken to develop some insights into the nature of entrepreneurial passion, its impact on entrepreneurial decision-making, and ultimately passion's contribution to entrepreneurial success.

What this project is about and why it is being undertaken

It is suggested that passion is a necessary but insufficient determinant of entrepreneurial success; that passion is established through a combination of the personality characteristics and childhood experiences of the entrepreneur and that successful entrepreneurs have a degree of insight and self-reflection that moderates their passion and in so doing contributes to their success. While we see and hear in the press entrepreneurs experience passion for their businesses in general, our understanding of the implications of that passion, its origins and consequences, are not well understood and have not been systematically addressed. I am hoping that through interviewing 10 successful entrepreneurs I will gain the insights needed to conduct further research with 140 entrepreneurs. The results of both studies will be used to shed some light on the nature of entrepreneurial decision-making and the role of passion in entrepreneurial success.

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- Establish how passion impacts on critical decision making of entrepreneurs.
- Develop a set of principles that explains the role of passion in entrepreneurship.
- Inform the contents of an interview schedule for use in a future study with 140 entrepreneurs to test the propositions arising from this research.

Project interests

The purpose of the project is mainly to satisfy the requirements for an academic qualification. However it is hoped that this activity will also give participating entrepreneurs an opportunity to reflect on the nature of their passion about their business/s.

What participation will involve

You will be asked to give up to 1 hours of your time to participate in an interview designed to:

1. Collect demographic data on your business
2. Identify the nature of the entrepreneur's passion and illuminate aspects of the passion, its possible origins, and its effect on the entrepreneur and his/her business

3. Understand the effects of passion on entrepreneurial decision making
4. Create a set of criteria for use in determining entrepreneurial and business success

The information gained from the project will be:

5. Aggregated to form a view of passion in the context of entrepreneurship
6. Used to develop an interview schedule that will form the basis of interviews with up to a further 140 entrepreneurs.

The results of all interviews will be analysed and used to inform a variety of publications including but not restricted to research papers, journal articles thesis and academic forums. **Your name and the name of your company/ies will not be mentioned in any report, thesis, journal article, or any publication whatsoever.**

Participant rights and interests

The investigators conducting this research abide by the principles governing the ethical conduct of research. This form and the accompanying participant information package provide an outline of the research project and the benefits to yourself and the community.

You will be asked to sign a release form throughout the process of this research. If so, your response should indicate that:

- You have received the subject information package and have read its contents.
- You clearly understand the nature of this study and that you have been given an opportunity to discuss the project with the researcher prior to your participation.
- Your participation over the duration of this project is voluntary and may be terminated by yourself in writing at any time without comment or penalty.
- You may direct further enquiries about the project to the researchers (details below). You may direct enquiries or complaints regarding the ethical conduct of this investigation to the Swinburne Research Ethics Officer, telephone +61 3 9214 5218.

Participant Rights and Interests – Free Consent/Withdrawal from Participation

Participation in this research is voluntary, and free from any coercion or perceived coercion. You are free to participate or not.

Volunteer entrepreneurs have been sought via entrepreneurship and/or innovation networks, peak industry bodies, personal and academic/educational networks, and direct targeting of individuals as consequence of recent media exposure. Volunteer entrepreneurs have been sought from Victoria, New South Wales and South Australia. Potential volunteers will be recruited through a number of methods:

- Telephone call to arouse interest in participating and to arrange a date/time to meet.
- Personal introductions from mutual contacts.
- Personalised letter inviting them to participate and advising that the researcher will contact them by telephone to determine their willingness to participate (contact details gained via industry/professional/network association)

Your valid consent will be obtained through signing of the Consent Form.

You are able to withdraw from participation in the research at any time, and have your data and/or interview material withdrawn from the research, without question or explanation, should you request.

Participant Rights and Interests – Privacy & Confidentiality

Your responses will be anonymous and confidential. Your name will be replaced by a code.

All identifiable data will be kept in secure, locked conditions at either Swinburne or the researcher's home. Electronic data will be stored in encrypted form. Following completion of this study all identifiable data will be destroyed. Only de-identified data will be kept, and this will be stored in a locked cabinet at Swinburne University by the first investigator as required by ethical approval procedures.

Your signed consent form will be stored separately to the data collected, to contribute to anonymity through the separation of the data and consent form, accessible only to the listed first and fourth researchers.

Research Output

Research output will include journal articles, conference papers and presentations. While results from the study may appear in publications such as journals and conference proceedings, it will not be possible to identify individual participants through these publications. Participants are welcome to ask for, and receive, an executive summary of the final research findings, as well as copies of any publications arising from the research.

Further information about the project – who to contact

If you would like further information about the project, please do not hesitate to contact:

Rosemary Fisher
Faculty of Business and Enterprise,
Swinburne University of Technology,
Level 6, 60 Williams Street
Victoria 3122, Australia

Concerns/complaints about the project – who to contact:

This project has been approved by or on behalf of Swinburne's Human Research Ethics Committee (SUHREC) in line with the *National Statement on Ethical Conduct in Human Research*. If you have any concerns or complaints about the conduct of this project, you can contact: Research Ethics Officer, Swinburne Research (H68), Swinburne University of Technology, P O Box 218, HAWTHORN VIC 3122. Tel (03) 9214 5218 or +61 3 9214 5218 or resethics@swin.edu.au

SIGNED CONSENT FORM

Project Title: Critical Decision Making and Entrepreneurial Success

Principal Investigator(s): Professor Janice Langan-Fox
Ms Rosemary Fisher

1. I consent to participate in the project named above. I have been provided a copy of the project information statement and this consent form and any questions I have asked have been answered to my satisfaction.

2. ***Please circle your response to the following:***

- | | | |
|----------------------------------------------------------------------|------------|-----------|
| ▪ I agree to be interviewed by the researcher | Yes | No |
| ▪ I agree to allow the interview to be recorded by electronic device | Yes | No |

3. I acknowledge that:

- (a) my participation is voluntary and that I am free to withdraw from the project at any time without explanation;
- (b) the project is for the purpose of research and not for profit;
- (c) any personal or health information about me which is gathered in the course of and as the result of my participating in this project will be (i) collected and retained for the purpose of this project and (ii) accessed and analysed by the researcher(s) for the purpose of conducting this project;
- (d) my anonymity is preserved and I will not be identified in publications or otherwise without my express written consent.

By signing this document I agree to participate in this project.

Name of Participant:

.....

Signature & Date:

Appendix 6 Survey Instrument Study 2

Dear Entrepreneur

We are asking you to participate in a 20-minute* unique research survey inquiring into the characteristics of the Australian entrepreneur, conducted under the auspices of Swinburne University of Technology.

Entrepreneurs are special people. Establishing and growing a business venture is difficult, and local, national and international factors constantly challenge the process. *Not everyone can do it.*

This survey will generate some insights into understandings of how Australian entrepreneurs continue in the face of many difficulties and challenges.

In the following pages you will find:

1. Consent Information Statement – detailing the research, and the key contact personnel associated with it.
2. The survey itself, which comprises 8 sections.
 - a. We request you complete each question in each section.
 - b. We recommend you complete the survey in one sitting, but have divided it into sections so that you can have breaks between the sections if necessary.
 - c. We know you are a very busy person but ask if you commence the survey, that you please complete it.

I look forward to your generous participation in this research. It is through the participation of entrepreneurs in research that practical insights and experiences emerge so that others can be encouraged and through which policies and incentives can be considered.

Yours sincerely



Rosemary Fisher

**Faculty of Business &
Enterprise**

Mail H25
PO Box 218 Hawthorn
Victoria 3122 Australia

Telephone +61 3 9214 4619

Facsimile +61 3 9214 5336
<http://www.swin.edu.au>

* To read this letter and the consent information statement, and fill in the survey (everything!) takes approximately 20 minutes.

Consent Information Statement

Project Title *Passion, Knowledge and Uncertainty in Entrepreneurial Action*

Investigators

Professor Janice Langan-Fox, Professor Dean Shepherd, Assoc Professor Soma Pillay, Ms Rosemary Fisher

Introduction to Project and Invitation to Participate

How, when and why passion is good for business?

This project is being undertaken to develop some insights into the nature of entrepreneurial focus and entrepreneurial passion. In particular whether focus and passion exist as clear and unequivocal components of entrepreneurial behaviour; if so which characteristics indicate their presence, and how focus and passion might contribute to entrepreneurial success.

What this project is about and why it is being undertaken:

It is suggested that entrepreneurial focus is a necessary determinant of entrepreneurial success, that focus is established through a combination of the personality characteristics and passion of the entrepreneur, and that a particular form of passionate focus motivates the sustained action necessary for entrepreneurship.

While we see and hear in the press that entrepreneurs experience passion for their businesses in general, our understanding of the implications of that passion are not well understood and have not been systematically addressed. I am hoping that the results of this study will be used to shed some light on the role of passion and focus in entrepreneurial success.

The aims of the research are to:

- Develop an understanding of focus and passion in entrepreneurial success.
- Identify key characteristics of the entrepreneur
- Establish how entrepreneurs perceive success, their understanding of passion's role in that perception, and how they understand their passion impacts sustained entrepreneurial action and entrepreneurial success.

Project interests:

The purpose of the project is to satisfy the requirements for an academic qualification (PhD). However it is hoped that this activity will also give participating entrepreneurs an opportunity to reflect on the nature of their passion for their business/s.

What participation will involve – time, effort, resources, costs, compensatory payments, etc

You will be asked to give up around 30 minutes of your time to complete a questionnaire with the following sections:

1. **My Current Business Activity** – you are asked to indicate the extent to which you believe phrases describing how people view their business apply to you eg *This business allows me to live a variety of experiences.*

2. **Life Adaptations** – asks you to indicate the extent to which you agree with statements about how people adapt in life eg *I have at least one close and secure relationship that helps me when I am stressed*
3. **Entrepreneurial Focus** - In a series of interviews, entrepreneurs discussed how they think about their businesses. You are asked to indicate the extent to which you believe phrases people use about their focus on their business apply to you eg *I find myself thinking about my business instead of thinking about what I am doing; I am passionate about my business.*
4. **Demographic information** – questions about your business and yourself eg *age, gender, ROI, growth rates, business type.*
5. **Entrepreneurial Success** – you are asked to indicate the extent to which statements taken from interviews with entrepreneurs reflect your view of entrepreneurial success eg *Today I am a successful entrepreneur*

By seeking a large sample of entrepreneurs to complete the questionnaire it is anticipated that data will be generated that can examine ideas about the path to entrepreneurial success.

The information gained from the project will be aggregated (grouped) to form a view of passion and focus in the context of entrepreneurship and will be used to inform a variety of publications including but not restricted to research papers, journal articles thesis and academic forums. Your name and the name of your company/ies will not be mentioned in any report, thesis, journal article, or any publication whatsoever.

Participant rights and interests – Risks & Benefits/Contingencies/Back-up Support

The investigators conducting this research abide by the principles governing the ethical conduct of research. This form and the accompanying participant information package provide an outline of the research project and the benefits to yourself and the community.

Your consent to participate is implied by the completion of this anonymous questionnaire. Your consent implies that:

- You have received this information package and have read its contents.
- You clearly understand the nature of this study and that you have been given an opportunity to discuss the project with the researcher prior to your participation.
- Your participation over the duration of this project is voluntary and may be terminated by yourself in writing at any time without comment or penalty.

You may direct further enquiries about the project to the researchers (details below).

You may direct enquiries or complaints regarding the ethical conduct of this investigation to the Swinburne Research Ethics Officer, telephone +61 3 9214 5218.

Although it is not expected that this research will raise any issues that may cause concern, if you feel that you require assistance please contact the Swinburne Psychology clinic on (03) 9214 8653 for low cost counselling or Lifeline on 131 114.

Participant rights and interests – Free Consent/Withdrawal from Participation

Participation in this research is voluntary, and free from any coercion or perceived coercion. You are free to participate or not.

Volunteer entrepreneurs have been sought via entrepreneurship and/or innovation networks, peak industry bodies, personal and academic/educational networks, and direct targeting of individuals as consequence of recent media exposure. Volunteer entrepreneurs have been sought from Victoria, New South Wales and South Australia. Potential volunteers will be recruited through a number of methods such as:

- Telephone call to arouse interest in participating, followed by forwarding of questionnaire materials/links
- General invitation to participate/publicity article contained in an industry/professional association/network communication channel, and/or
- Personalised letter inviting participation and containing questionnaire materials/links

Your valid consent will be inferred by your completing and returning this questionnaire.

You are able to withdraw from participation in the research, and have your data withdrawn from the research, without question or explanation, should you request to do so.

Participant rights and interests – Privacy & Confidentiality

Your responses will be anonymous and confidential. Your name will not be collected. All data will be kept in secure, locked conditions at either Swinburne or the researcher's home. Electronic data will be stored in encrypted form. Following completion of this study de-identified data will be kept in a locked cabinet at Swinburne University by the first investigator as required by Ethical approval procedures.

Research output

Research output will include journal articles, conference papers and presentations. While results from the study may appear in publications such as journals and conference proceedings, it will not be possible to identify individual participants through these publications.

Participants are welcome to ask for, and if so will receive, an executive summary of the final research findings.

Further information about the project – who to contact

If you would like further information about the project, please do not hesitate to contact:

Rosemary Fisher
Faculty of Business and Enterprise,
Swinburne University of Technology,
PO Box 218, Hawthorn
Victoria 3122, Australia
Telephone: 03 9214 4619
Email - rlfisher@groupwise.swin.edu.au

Concerns/complaints about the project – who to contact:

This project has been approved by or on behalf of Swinburne's Human Research Ethics Committee (SUHREC) in line with the National Statement on Ethical Conduct in Human Research. If you have any concerns or complaints about the conduct of this project, you can contact: Research Ethics Officer, Swinburne Research (H68), Swinburne University of Technology, P O Box 218, HAWTHORN VIC 3122.Tel (03) 9214 5218 or +61 3 9214 5218 or resethics@swin.edu.au

My Current Business Activities

While thinking of your business venture and using the scale below, please *circle the number* that indicates your level of agreement with each item.

	Not Agree at All	Very Slightly Agree	Slightly Agree	Moderately Agree	Mostly Agree	Strongly Agree	Very Strongly Agree
1. This business is in harmony with the other activities in my life.	1	2	3	4	5	6	7
2. I have difficulties controlling my urge to do my business activities.	1	2	3	4	5	6	7
3. The new things that I discover with this business allow me to appreciate it even more.	1	2	3	4	5	6	7
4. I have almost an obsessive feeling for this business.	1	2	3	4	5	6	7
5. This business reflects the qualities I like about myself.	1	2	3	4	5	6	7
6. This business allows me to live a variety of experiences.	1	2	3	4	5	6	7
7. This business is the only thing that really turns me on.	1	2	3	4	5	6	7
8. My business is well integrated in my life.	1	2	3	4	5	6	7
9. If I could, I would only do my business.	1	2	3	4	5	6	7
10. My business is in harmony with other things that are part of me.	1	2	3	4	5	6	7
11. This business is so exciting that I sometimes lose control over it.	1	2	3	4	5	6	7
12. I have the impression that my business controls me.	1	2	3	4	5	6	7
13. I spend a lot of time doing this business.	1	2	3	4	5	6	7
14. I like this business.	1	2	3	4	5	6	7

	Not Agree at All	Very Slightly Agree	Slightly Agree	Moderately Agree	Mostly Agree	Strongly Agree	Very Strongly Agree
15. This business is important for me.	1	2	3	4	5	6	7
16. This business is a passion for me.	1	2	3	4	5	6	7

Life Adaptations

Please indicate, by *circling a response*, how much you agree with the following statements as they applied to you over the last month. If a particular situation has not occurred recently, answer according to you how think you would have felt.

	Not true at all	Rarely true	Sometimes true	Often true	True nearly all the time
1. Able to adapt when changes	1	2	3	4	5
2. Close and secure relationships	1	2	3	4	5
3. Sometimes fate or God can help	1	2	3	4	5
4. Can deal with whatever comes	1	2	3	4	5
5. Past success gives confidence for new challenges	1	2	3	4	5
6. See the humorous side of things	1	2	3	4	5
7. Coping with stress strengthens	1	2	3	4	5
8. Tend to bounce back after illness or hardship	1	2	3	4	5
9. Things happen for a reason	1	2	3	4	5
10. Best effort no matter what	1	2	3	4	5
11. You can achieve your goals	1	2	3	4	5
12. When things look hopeless, I don't give up	1	2	3	4	5
13. Know where to turn for help	1	2	3	4	5
14. Under pressure, focus and think clearly	1	2	3	4	5
15. Prefer to take the lead in problem solving	1	2	3	4	5
16. Not easily discouraged by failure	1	2	3	4	5

	Not true at all	Rarely true	Sometimes true	Often true	True nearly all the time
17. Think of myself as a strong person	1	2	3	4	5
18. Can make unpopular or hard decisions	1	2	3	4	5
19. Can handle unpleasant feelings	1	2	3	4	5
20. Have to act on a hunch	1	2	3	4	5
21. Have a strong sense of purpose	1	2	3	4	5
22. In control of your life	1	2	3	4	5
I like challenges	1	2	3	4	5
23. Work to attain your goals	1	2	3	4	5
24. Pride in your achievements..	1	2	3	4	5

Entrepreneurial Focus

In a series of recent interviews, entrepreneurs discussed how they think about their business. The following statements are derived from these interviews. Please respond to each statement - some statements appear to be very similar to other statements. Please indicate, *by circling a response*, the extent to which each statement reflects you in relation to your business venture. Your first response will be your best answer; please do not take too much time to reflect on each statement.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. My business has the greatest significance for me	1	2	3	4	5
2. My business is not work, it is pleasure	1	2	3	4	5
3. I think about my business 24/7	1	2	3	4	5
4. I like it when thoughts of my business intrude into other activities I am doing	1	2	3	4	5
5. My passion lifts me out of the day-to-day aspects of my business	1	2	3	4	5
6. I am intensely passionate about many things in my life	1	2	3	4	5
7. I understand why I have these intrusive thoughts but sometimes I wish I could just turn them off	1	2	3	4	5
8. Intruding thoughts of my business are not welcome	1	2	3	4	5

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
9. My passion for my business is intense	1	2	3	4	5
10. I have these thoughts about my business because I want to think about my business	1	2	3	4	5
11. My business brings me the greatest pleasure in my life	1	2	3	4	5
12. It is difficult to control intruding thoughts about my business	1	2	3	4	5
13. A particular thought about my business recurrently intrudes into my thoughts	1	2	3	4	5
14. My business gives me a reason to get up every day	1	2	3	4	5
15. I am passionate about my business	1	2	3	4	5
16. I feel enthusiastic about working for my business	1	2	3	4	5
17. I am used to thoughts of my business intruding into my head	1	2	3	4	5
18. When I have these intrusive thoughts I must work on my business to relieve the feelings they generate inside me	1	2	3	4	5
19. I have recurring thoughts about my business that just come into my head	1	2	3	4	5
20. I try to dismiss intruding thoughts about my business from my mind	1	2	3	4	5
21. I can't stop thoughts about my business so I just got used to it happening	1	2	3	4	5
22. Intruding thoughts of my business distress me	1	2	3	4	5
23. These intrusive thoughts make me feel compelled to work on my business	1	2	3	4	5
24. A sense of anxiety accompanies intruding thoughts about my business	1	2	3	4	5
25. Intrusive thoughts about my business are a product of my interest in my business	1	2	3	4	5
26. The strong feelings I get when business thoughts intrude into my mind are positive and energising feelings	1	2	3	4	5
27. I have learnt to live with thoughts of my business intruding into my mind	1	2	3	4	5
28. My passion drives me to do the less enjoyable aspects of my business	1	2	3	4	5
29. I don't understand why I have these thoughts about my business	1	2	3	4	5
30. I work to keep thoughts of my business in perspective with thoughts about the rest of my life	1	2	3	4	5
31. When thoughts about my business intrude into my mind, I get strong feelings	1	2	3	4	5

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
32. Intrusive thoughts are like fuel for me to take action on my business	1	2	3	4	5
33. I can't concentrate on anything else because thoughts of my business fill my head	1	2	3	4	5
34. I find myself thinking about my business instead of thinking about what I am doing	1	2	3	4	5
35. Working on my business relieves the strong feelings that build inside me	1	2	3	4	5
36. My passion for my business is like a fuel for me	1	2	3	4	5
37. Intruding thoughts of my business generate feelings of passion for my business	1	2	3	4	5
38. I have to train myself to think about things other than my business	1	2	3	4	5
39. Thoughts of my business insinuate themselves into my head, against my will	1	2	3	4	5
40. I do not know where these thoughts about my business come from	1	2	3	4	5
41. Intruding thoughts of my business make me feel uncomfortable	1	2	3	4	5
42. My business is the most significant thing to me	1	2	3	4	5
43. Thoughts of my business interfere with other activities I am doing	1	2	3	4	5
44. I set rules for myself about how much time I spend thinking about my business	1	2	3	4	5
45. Intrusive thoughts about my business give me energy to work on my business	1	2	3	4	5
46. I have these intruding thoughts about my business because the business generates anxiety within me	1	2	3	4	5
47. The intrusive thoughts of my business build pressure to act inside me	1	2	3	4	5
48. I am only passionate about my business	1	2	3	4	5
49. My business has overwhelming significance for me	1	2	3	4	5
50. I consciously quarantine thoughts about my business so I can focus on other activities	1	2	3	4	5
51. I couldn't do what I do if I were not passionate about my business	1	2	3	4	5
52. My passion for my business gives me a reason to get up everyday	1	2	3	4	5
53. My business is an extension of who I am as a person	1	2	3	4	5

Demographic Details

The following questions collect anonymous demographic data that will be used to build a picture of entrepreneurial characteristics. Please answer in relation to your primary business.

Please complete each question by selecting the appropriate response. *Place a tick in the correct box:*

1. My gender is:	<input type="checkbox"/> Male <input type="checkbox"/> Female
2. My highest level of education is:	<input type="checkbox"/> Did not go to school <input type="checkbox"/> Primary School <input type="checkbox"/> Year 8 or below <input type="checkbox"/> Year 9 or equivalent <input type="checkbox"/> Year 10 or equivalent <input type="checkbox"/> Year 11 or equivalent <input type="checkbox"/> Year 12 or equivalent <input type="checkbox"/> TAFE certificate <input type="checkbox"/> Bachelor degree <input type="checkbox"/> Trade certificate/apprenticeship <input type="checkbox"/> Honours <input type="checkbox"/> Graduate Diploma <input type="checkbox"/> Masters <input type="checkbox"/> PhD/Doctorate
3. My age group is:	<input type="checkbox"/> 18-30 years <input type="checkbox"/> 31-40 years <input type="checkbox"/> 41- 50 years <input type="checkbox"/> 51 – 60 years <input type="checkbox"/> 61- 70 years <input type="checkbox"/> 71+ years
4. I have this business because I:	<input type="checkbox"/> Purchased a franchise <input type="checkbox"/> Purchased an existing business <input type="checkbox"/> Bought into an existing partnership/business <input type="checkbox"/> Created a business that previously didn't exist <input type="checkbox"/> Other (please describe) _____ _____
5. I owned _____ % of my business when operations commenced.	
6. This business has been operational for _____ years.	
7. On average I spend _____ hours per week at my place of work.	

Demographic Details

8. In addition to my average working hours at my place of work, I average (*circle response below*) hours per week working on my business whilst I am supposed to be ~~on~~ duty".

5hrs 10hrs 15hrs 20hrs 25hrs 25+hrs

Please rank your agreement with the statements in 9 and 10 below:

9. I am working on my business when I am on holiday

Strongly Disagree

Strongly Agree

1

2

3

4

5

10. I am working on my business even if I am sick

Strongly Disagree

Strongly Agree

1

2

3

4

5

11. In 2008, the approximate number of full time and part time staff employed in this business was:

12. Over the period 2006-2008 average staff numbers:

- ☐ Increased
☐ Decreased
☐ Remained Constant
☐ Varied

13. Approximate average annual turnover for the period 2006-2008 was:

- ☐ Less than \$500,000 pa
☐ \$500,001 - \$2,000,000 pa
☐ \$2,000,001 to \$10,000,000 pa
☐ \$10,000,001 - \$20,000,000 pa
☐ Over \$20,000,001 pa

14. Approximate average annual turnover for this period had:

- ☐ Increased
☐ Decreased
☐ Remained Constant
☐ Varied

15. In the period 2006-2008, the average rate of growth pa for this business was:

- ☐ Less than 5% pa
☐ More than 5% pa
☐ More than 15% pa

Demographic Details	
	<input type="checkbox"/> More than 30% pa <input type="checkbox"/> More than 45% pa <input type="checkbox"/> More than 60% pa <input type="checkbox"/> More than 85% pa <input type="checkbox"/> More than 100% pa <input type="checkbox"/> More than 150% pa
16. In the period 2006-2008, return on investment for this business:	<input type="checkbox"/> Increased significantly <input type="checkbox"/> Increase moderately <input type="checkbox"/> Increased marginally <input type="checkbox"/> Not changed <input type="checkbox"/> Decreased significantly <input type="checkbox"/> Decreased moderately <input type="checkbox"/> Decreased marginally

Entrepreneurial Success

In interviews with entrepreneurs, entrepreneurial success was discussed. Please indicate the extent to the following statements, taken from those interviews, reflect your view of entrepreneurial success.

17. Today, I am a successful entrepreneur: <i>(circle your response below)</i>				
Strongly Disagree	Neither agree nor disagree			Strongly Agree
1	2	3	4	5

18. I am a successful entrepreneur if I: *(circle as appropriate for each statement)*

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Build a business sustainable beyond my personal involvement	1	2	3	4	5
Receive public recognition from others eg awards, remunerated board seats, speaker invitations	1	2	3	4	5
Exit, or sell some of, my business for profit	1	2	3	4	5
Do only that which I want to do in life and business	1	2	3	4	5
Continually grow my business	1	2	3	4	5

Am personally satisfied with my life and business	1	2	3	4	5
Achieve the business goals I set out to achieve in founding at least one business	1	2	3	4	5
Exceed the business goals I set out to achieve in founding at least one business	1	2	3	4	5
Never fail	1	2	3	4	5

THANKYOU!

I greatly appreciate you taking the time to complete this comprehensive survey.

If you would like to contact me, or receive papers developed from the data, or the executive summary of the thesis, or provide any other comment, please send an email to RLFisher@groupwise.swin.edu.au.

Table of Constructs and Measures

Construct	Author	Cronbach's α	Item number	Item	Factor Loading
Harmonious Passion	Vallerand et al , 2003	0.79	cba1	This business is in harmony with the other activities in my life	0.74
			cba3	The new things that I discover with this business allow me to appreciate it even more.	removed
			cba5	This business reflects the qualities I like about myself	0.44
			cba6	This business allows me to live a variety of experiences	removed
			cba8	My business is well integrated in my life.	0.81
			cba10	My business is in harmony with other things that are part of me.	0.83
Obsessive Passion	Vallerand et al , 2003	0.71	cba2	I have difficulties controlling my urge to do my business activities	0.45
			cba4	I have almost an obsessive feeling for this business	0.63
			cba7	This business is the only thing that really turns me on.	0.62
			cba9	If I could, I would only do my business.	removed
			cba11	This business is so exciting that I sometimes lose control over it.	0.66
			cba12	I have the impression that my business controls me.	0.52
Presence of Passion	Vallerand et al , 2003	0.71	cba13	I spend a lot of time doing this business	0.39
			cba14	I like this business	0.78
			cba15	This business is important for me.	0.86
			cba16	This business is a passion for me.	0.63

Construct	Author	Cronbach's α	Item number	Item	Factor Loading
Resilience	Connor and Davidson 2003	0.85 for higher order model of 12 remaining items			
<i>Fatalist</i>		0.54	La1	Close and secure relationships	removed
			La3	Sometimes fate or God can help	removed
			La6	See the humorous side of things	removed
			La9	Things happen for a reason	removed
<i>Adaptable tenacity</i>		0.76	La2	Able to adapt to change	0.6
			La4	Can deal with whatever comes	0.64
			La8	Tend to bounce back after illness or hardship	0.58
			La7	Coping with stress strengthens	0.61
			La16	Not easily discouraged by failure	0.67
<i>Emotional cognitive control</i>		0.71	La5	Past success gives confidence for new challenges	0.55
			La14	Under pressure, focus and think clearly	0.65
			La22	In control of your life	0.59
			La24	You work to attain your goals	0.63
<i>Self efficacy</i>		0.72	La10	Best effort no matter what	0.65
			La11	You can achieve your goals	0.79
			La12	When things look hopeless, I don't give up	0.62
			La13	Know where to turn for help	removed
			La15	Prefer to take the lead in problem solving	removed
			La17	Think of myself as a strong person	removed
			La18	Can make unpopular or hard decisions	removed

Construct	Author	Cronbach's α	Item number	Item	Factor Loading
			La19	Can handle unpleasant feelings	removed
			La20	Have to act on a hunch	removed
			La21	Have a strong sense of purpose	removed
			La23	I like challenges	removed
			La25	Pride in your achievements.	removed
Entrepreneurial Intrusive Thoughts	New construct				
<i>Intrusive thoughts</i>		0.82	ef33	I can't concentrate on anything else because thoughts of my business fill my head	0.76
			ef34	I find myself thinking about my business instead of thinking about what I am doing	0.79
			ef39	Thoughts of my business insinuate themselves into my head, against my will	0.75
			ef40	I do not know where these thoughts about my business come from	0.44
			ef43	Thoughts of my business interfere with other activities I am doing	0.71
<i>Difficult to control</i>		0.6	ef44	I set rules for myself about how much time I spend thinking about my business	0.41
			ef50	I consciously quarantine thoughts about my business so I can focus on other activities	1.19
<i>Unwelcome</i>		0.72	ef20	I try to dismiss intruding thoughts about my business from my mind	0.64
			ef7	I understand why I have these intrusive thoughts about my business but sometimes I wish I could just turn them off	0.68
			ef8	Intruding thoughts of my business are not welcome	0.73
<i>Adapt to</i>		0.82	ef17	I am used to thoughts of my business intruding into my head	0.79
			ef19	I have recurring thoughts about my business that just come into my head	0.71
			ef21	I can't stop thoughts about my business intruding so I just got used to it happening	0.63
			ef25	Intrusive thoughts about my business are a product of my	0.59

Construct	Author	Cronbach's α	Item number	Item	Factor Loading
				interest in my business	
			ef27	I have learnt to live with thoughts of my business intruding into my mind	0.78
			ef3	I think about my business 24/7	removed
			ef13	A particular thought about my business recurrently intrudes into my thoughts	removed
			ef12	It is difficult to control intruding thoughts about my business	removed
			ef38	I have to train myself to think about things other than my business	removed
			ef29	I don't understand why I have these thoughts about my business	removed
			ef46	I have these intruding thoughts about my business because the business generates anxiety within me	removed
			ef10	I have these thoughts about my business because I want to think about my business	removed
			ef30	I work to keep thoughts of my business in perspective with thoughts about the rest of my life	removed
			ef4	I like it when thoughts of my business intrude into other activities I am doing	removed
Confirming Intrusive Thoughts	New construct				
<i>Generates Anxiety</i>		0.78	ef22	Intruding thoughts of my business distress me	0.89
			ef41	Intruding thoughts of my business make me feel uncomfortable	0.71
			ef24	A sense of anxiety accompanies intruding thoughts about my business	0.67
<i>Imbued with great personal significance</i>		0.72	ef11	My business brings me the greatest pleasure in my life	0.83
			ef14	My business gives me a reason to get up every day	0.62
			ef1	My business has the greatest significance for me	0.58
<i>Motivates action</i>		0.74	ef18	When I have these intrusive thoughts I must work on my business to relieve the feelings they generate inside me	-0.81
			ef23	These intrusive thoughts make me feel compelled to work on my business	-0.74

Construct	Author	Cronbach's α	Item number	Item	Factor Loading
			ef35	Working on my business relieves the strong feelings that build inside me	-0.58
			ef26	The strong feelings I get when business thoughts intrude into my mind are positive and energising feelings	Removed
			ef37	Intruding thoughts of my business generate feelings of passion for my business	removed
			ef31	When thoughts about my business intrude into my mind, I get strong feelings	removed
			ef32	Intrusive thoughts are like fuel for me to take action on my business	removed
			ef45	Intrusive thoughts about my business give me energy to work on my business	removed
			ef47	The intrusive thoughts of my business build pressure to act inside me	removed
			ef2	My business is not work, it is pleasure	removed
			ef42	My business is the most significant thing to me	removed
			ef49	My business has overwhelming significance for me	removed
			ef53	My business is an extension of who I am as a person	removed
Sustained Entrepreneurial Action	New construct				
<i>SEABusiness</i>			SEA1	This business has been operational for (In-text element: years)	global question
			SEA2	In 2008, the approximate number of full time and part time staff employed in this business _____	n/a
			SEA4	Approximate average annual turnover for the period 2006-2008 was: _____	n/a
			SEA6	In the period 2006-2008, the average rate of growth pa for this business was _____	n/a
<i>SEATime</i>			SEA11	I am working on my business even if I am sick.	global question

Construct	Author	Cronbach's α	Item number	Item	Factor Loading
			SEA8	On average, I spend ____ hours per week at my place of work.	n/a
			SEA9	In addition to my average working hours at my place of work, I average ____ hours per week working on my business whilst I am supposed to be off duty.	n/a
			SEA10	I am working on my business when I am on holiday	n/a
			SEA3	Over the period 2006-2008 average staff numbers	removed
			SEA5	Approximate average annual turnover for this period has	removed
			SEA7	In the period 2006-2008, return on investment for this business (In-text element: investment)	removed
Entrepreneurial success	New construct	0.72	es5	Do only that which I want to do in life and business	0.61
			es6	Continually grow my business	0.63
			es7	Am personally satisfied with my life and business	0.73
			es9	Exceed the business goals I set out to achieve in founding at least one business	0.57
			es2	Build a business sustainable beyond my personal involvement	0.38
			es1	Today, I am a successful entrepreneur	removed
			es3	Receive public recognition from others eg awards, remunerated board seats, speaker invitations	removed
			es4	Exit, or sell some of, my business for profit	removed
			es8	Achieve the business goals I set out to achieve in founding at least one business	removed
			es10	Never fail	removed

Appendix 8 Rankings Applied to Indicators

SEA1 - Q 162/Q6 Pg 11: *This business has been operational for _____ years."*

1-5 years = 1

6-10 years = 2

11-20 years = 3

21+ yrs = 4

SEA2 - Q167/Q11 Pg 12: *In 2008, the approximate number of full time and part time staff employed in this business was _____."*

< 10 = 1

10 - 50 = 2

51 - 1,000 = 3

>1,000 = 4

SEA 3 – Q168/Q12 Pg 12: *Over the period 2006-2008 average staff numbers:"*

Increased = 4

Decreased = 1

Remained Constant = 3

Varied = 2

SEA 4 - Q169/Q13 Pg 12: *Approximate average annual turnover for the period 2006-2008 was:"*

Less than \$500,000 pa = 1

\$500,001 - \$10,000,000 pa = 2

\$10,000,001 - \$20,000,000 pa = 3

Over \$20,000,001 pa = 4

SEA 5 - Q170/Q14 Pg 12: *Approximate average annual turnover for this period had:"*

Increased = 4

Decreased = 1

Remained Constant = 3

Varied = 2

SEA 6 - Q171/Q15 Pg 12: *In the period 2006-2008, the average rate of growth pa for this business was:"*

< 20% pa = 1

21% - 50% pa = 2

51% - 80% pa = 3

>81% pa = 4

SEA 7 - Q172/Q16 Pg 12: *In the period 2006-2008, return on investment for this business:"*

Increased significantly = 4

Decreased significantly, moderately, marginally = 1

Not changed = 3

Increased moderately, marginally = 2

SEA 8 – Q163/Q7 Pg11: *On average I spend _____ hours per week at my place of work"*

0 to 20 hours = 1

21 to 48 hours = 2

49 to 60 = 3

61+ hours = 4

SEA 9 – Q164/Q8 Pg11: *“In addition to my average working hours at my pace of work, I average _____ hours per week*

- 0 to 10 hours per week = 1
- 11 to 20 hours per week = 2
- 21 to 30 hours per week = 3
- 30+ hours per week = 4

AGE – Q159/3 Pg11: *“My age group is”:*

- 18 to 30 years = 1
- 31 to 40 years = 2
- 41 to 50 years = 3
- 51 to 60 years = 4
- 61 to 70 years = 5
- Over 70 years = 6

EDN – Q158/Q2 Pg11: *“My highest level of education is”:*

- Year 7-8 or equivalent = 1
- Year 9 or equivalent = 2
- Year 10 or equivalent = 3
- Year 11 or equivalent = 4
- Year 12 or equivalent = 5
- TAFE/Trade certificate = 6
- TAFE/Trade apprenticeship = 7
- Graduate Diploma/Certificate = 8
- Bachelors/Undergraduate degree = 9
- Honours degree = 10
- Masters degree = 11
- PhD/Doctorate = 12

CE1 – Q160/Q4 Pg11: *“I have this business because I”:*

- Created a business that previously didn't exist = 1
- Bought into an existing partnership/business = 2
- Other (please describe) = 3
- Purchased a franchise = 4
- Purchased an existing business = 5

CE3 – Q161/Q5 Pg11: *“I owned _____% of my business when operations commenced”:*

- 50-100% = 1
- 30-49% = 2
- < 30% = 3

To: Professor Janice Langan-Fox, FBE/Ms Rosemary Fisher

SUHREC Project 2009/194 Passion, Knowledge and Uncertainty in Successful Entrepreneurial Action

Professor Janice Langan-Fox, FBE/Ms Rosemary Fisher

Approved Duration: 29/09/2009 To 28/02/2013 [Adjusted]

I refer to the ethical review of the above project protocol undertaken on behalf of Swinburne's Human Research Ethics Committee (SUHREC) by SUHREC Subcommittee (SHESC1) at a meeting held on 28 August 2009. Your responses to the review, as e-mailed on 7 and 23 September 2009 were put to a nominated SHESC1 delegate for consideration.

I am pleased to advise that, as submitted to date, the project has approval to proceed in line with standard on-going ethics clearance conditions here outlined.

- All human research activity undertaken under Swinburne auspices must conform to Swinburne and external regulatory standards, including the National Statement on Ethical Conduct in Human Research and with respect to secure data use, retention and disposal.
- The named Swinburne Chief Investigator/Supervisor remains responsible for any personnel appointed to or associated with the project being made aware of ethics clearance conditions, including research and consent procedures or instruments approved. Any change in chief investigator/supervisor requires timely notification and SUHREC endorsement.
- The above project has been approved as submitted for ethical review by or on behalf of SUHREC. Amendments to approved procedures or instruments ordinarily require prior ethical appraisal/ clearance. SUHREC must be notified immediately or as soon as possible thereafter of (a) any serious or unexpected adverse effects on participants and any redress measures; (b) proposed changes in protocols; and (c) unforeseen events which might affect continued ethical acceptability of the project.
- At a minimum, an annual report on the progress of the project is required as well as at the conclusion (or abandonment) of the project.
- A duly authorised external or internal audit of the project may be undertaken at any time.

Please contact me if you have any queries about on-going ethics clearance. The SUHREC project number should be quoted in communication. Chief Investigators/Supervisors and Student Researchers should retain a copy of this e-mail as part of project record-keeping.

Best wishes for the project.

Kaye Goldenberg

Secretary, SHESC1

Appendix 10 Cold Call Approach

From: Rosemary Fisher [Rosemary.Fisher@FisherSeidler.com]

Sent: Saturday, 17 July 2010 9:20 PM

To: [Name suppressed]

Subject: for [Name Suppressed]

Dear Mr X

I came across your business via an internet search for Australian entrepreneurs.

Would you participate in my PhD research survey inquiring into the characteristics of Australian entrepreneurs, conducted under the auspices of Swinburne University of Technology?

It takes about 20 minutes, is anonymous, and is accessed by clicking this link

<http://opinio.online.swin.edu.au/s?s=7756>

I would greatly appreciate your participation and would be pleased to send you papers arising from the results.

kind regards

Rosemary Fisher

Papers and Presentations

The following are developed from this work:

Papers (in progress):

Is Entrepreneurial Passion Obsessive or Harmonious in Nature?

Sustained Entrepreneurial Action and Entrepreneurial Success – A Conceptualisation

Conference Participation:

- | | |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2011 | 2011 Annual Meeting of the Academy of Management August 2011 - Fisher R, <i>Is Entrepreneurial Passion Obsessive in Nature?</i> |
| 2010 | 7th AGSE International Entrepreneurship Research Exchange Feb 2010 - Fisher R, Langan-Fox J, & Shepherd D, <i>The Contribution of Deprivation and Disadvantage to Entrepreneurial Success</i> .
2010 Annual Meeting of the Academy of Management August 2010 - Fisher R, Langan-Fox J, <i>Passion's Contribution to Entrepreneurial Success</i> . |
| 2009 | 6th AGSE International Entrepreneurship Research Exchange - Fisher R, Langan-Fox J <i>Passion and Uncertainty in Successful Entrepreneurial Action</i> |

Presentations:

- | | |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| July 2011 | Fisher R, Maritz A, Lobo A, <i>Passion, Resilience, Obsession, & Sustained Entrepreneurial Action: the Path to Entrepreneurial Success</i> , Swinburne Research Higher Degrees End of Candidature Review |
| Oct 10, May 2011 | Fisher R, <i>What Makes Entrepreneurs Different?</i> The University of Melbourne, Melbourne Business School, presentation to MBA Entrepreneurship students |
| Aug 2010 | Fisher R, Langan-Fox J, Shepherd D, <i>Passion, Knowledge and Uncertainty in Successful Entrepreneurial Action</i> , Swinburne Research Higher Degrees Mid Candidature Review |
| Aug 2009 | Fisher R, Langan-Fox J, Shepherd D, <i>Passion, Knowledge and Uncertainty in Successful Entrepreneurial Action</i> , Swinburne Research Higher Degrees Mid Candidature Review |
| Nov 2008 | Fisher R, <i>Passion, Knowledge and Uncertainty in Successful Entrepreneurial Action</i> , Swinburne Research Higher Degrees Candidature Proposal Review Mini-Conference |