

# **BUSINESS OWNERSHIP EXPERIENCE, ENTREPRENEURIAL BEHAVIOUR AND PERFORMANCE: NOVICE, HABITUAL, SERIAL AND PORTFOLIO ENTREPRENEURS**

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## ABSTRACT

Recent media reports have drawn attention to entrepreneurs who have successfully owned several businesses. Entrepreneurs who have owned at least two businesses are known as 'habitual entrepreneurs'. However, not all habitual entrepreneurs are consistently successful. Further, studies show that habitual entrepreneurs are heterogeneous. A distinction has been made between portfolio entrepreneurs (i.e., those who own multiple businesses simultaneously) and serial entrepreneurs (i.e., those who have owned multiple businesses sequentially).

It has been argued that to really understand entrepreneurship, there is a need to understand habitual entrepreneurs because they have been able to move down the experience curve with respect to the problems and processes of owning a business. If habitual entrepreneurs are distinct from other groups of entrepreneurs such as novice entrepreneurs (particularly in terms of superior performance), then there may be advantages associated with identifying their practices. Practitioners, such as providers of finance, can make sure that the qualities of habitual entrepreneurs are present in the entrepreneurs they chose to fund. Policy-makers wanting to maximise the return on their investments may provide financial support to this group. In addition, guided by the knowledge of how habitual entrepreneurs behave, support can be directed to novice entrepreneurs to encourage best practice.

In this study, the theoretical rationale for distinguishing between these groups is provided using human capital theory. Business ownership experience is viewed as one component of an entrepreneur's specific human capital. In particular, it is argued that as a result of their experience, habitual entrepreneurs may have had an opportunity to develop other aspects of their human capital to a greater extent than novice entrepreneurs. Consequently, one objective of the thesis was to identify differences in the human capital profile of habitual and novice entrepreneurs. The results of the study show that while similarities exist, habitual entrepreneurs display different human capital characteristics than novice entrepreneurs. Further, portfolio entrepreneurs also display different human capital characteristics than serial entrepreneurs.

The thesis also explored the relationship between business ownership experience and entrepreneurial behaviour as well as performance. The evidence indicates that habitual entrepreneurs do not search for more information than novice entrepreneurs but they do use different sources of information. Further, habitual entrepreneurs (in particular portfolio entrepreneurs) identify and pursue a significantly greater number of opportunities in a given period. Using a variety of entrepreneur and firm-level performance measures, habitual entrepreneurs do not out-perform their novice counterparts. Interestingly, neither those habitual entrepreneurs who had been consistently successful, nor those who had previously failed, report superior performance to novice entrepreneurs.

On the basis of the findings presented in this study, a number of policy suggestions can be made. Unfortunately, as no particular group of entrepreneur was associated with superior performance, the recommendation that financial support be targeted to a certain group could not be made. However, given relationships between other aspects of human capital and performance, some suggestions for support, particularly in terms of training are offered. Given identified differences in the human capital and behavioural profile of novice, habitual, serial and portfolio entrepreneurs, a case for tailored support is made.

## CHAPTER ONE

### INTRODUCTION

*“Experience is not what happens to a man; it is what a man does with what happens to him”.*

*Aldous Huxley (1932)*

The entrepreneurial process, involving all the functions and activities associated with the identification and exploitation of opportunities (Bygrave and Hofer, 1991; Shane and Venkataraman, 2000), has generated considerable interest from academics and practitioners. It is widely believed that the entrepreneurial function is a vital component in the process of economic growth (Schumpeter, 1950; Baumol, 1968; Casson, 1982; Reynolds et al., 1994). In 1998, the OECD published a document entitled *Fostering Entrepreneurship* which stated that:

Entrepreneurship is central to the functioning of market economies. Entrepreneurs are agents of change and growth in a market economy and they can act to accelerate the generation, dissemination and application of innovative ideas. In doing so, they not only ensure that efficient use is made of resources, but also expand the boundaries of economic activity (p. 12)

The promotion of entrepreneurship has also been seen as a means of combating unemployment and poverty (Storey, 1982; 1994). Further, the OECD (1998: 34) highlighted that:

...the promotion of entrepreneurship is perceived to yield additional benefits such as raising the degree of competition in a given market, fuelling the drive for new economic opportunities, and helping to meet challenges of rapid change in a globalising economy...Promoting entrepreneurship is thus viewed as part of a formula that will reconcile economic success with social cohesion.

The importance of new firms to the process of job creation and long-term economic growth is widely recognized. In several developed economies, policy-makers and practitioners actively intervene to stimulate entrepreneurship as a means of promoting economic well being (Storey, 1994; Bridge et al., 1998). Market

intervention is deemed necessary to address attitudinal, resource, operational and strategic barriers to new firm formation and growth. A wide variety of instruments have been introduced to encourage new firm formation and growth in the UK, leading to a 'patchwork quilt' collection of policies (Storey, 1994). These measures range from macro-level policies (e.g., changes in taxation) to 'hard' financial support (e.g., grants, premises etc.) and 'soft' support (e.g., information and training) (Storey, 1994; Bridge et al., 1998; Wren and Storey, 2002). The effectiveness of support policies is, however, still unclear. To evaluate the effectiveness of a particular policy initiative, there is a need to specify the objectives of policy (Storey, 2000). For example, while some initiatives attempt to focus on enterprise creation (e.g., the Scottish Birth Rate Strategy), others may strive to maximise wealth creation (e.g., policies that focus on high growth businesses). Further, policy makers also need to acknowledge that the effectiveness of various policies appears to be influenced by the heterogeneity of entrepreneurs and the firms they own. Wren and Storey (2002) found that one particular 'soft' support instrument (i.e., marketing consultancy) was effective (i.e., inducing growth in sales turnover and employment) for medium-sized businesses but less so for their smaller counterparts. Policy-makers seeking to "create an enterprising society" (Storey, 2000) need to acknowledge the presence of different types of entrepreneurs. For example, some entrepreneurs may own several businesses. Taking the stock of businesses as an indication of whether an enterprising society exists may over-estimate the level of entrepreneurship and hence the effectiveness of various policies. We can reasonably infer here that policy initiatives should to be tailored towards the needs of entrepreneurs and firms.

Of particular concern for many policy-makers, is the issue of what the appropriate unit of policy analysis should be. Some scholars have suggested that the entrepreneur, rather than solely the firm, should be increasingly considered as the unit of academic and policy analysis (Rosa and Scott, 1998; Westhead and Wright, 1999). Both research and policy have hitherto tended to focus on the former. Some policy-makers and practitioners are now considering whether resources could be more effectively and efficiently utilized, if they were targeted towards certain groups of entrepreneurs, rather than the provision of additional initiatives to increase the pool of new businesses (Westhead et al., 2003b). Most notably, heterogeneity among

entrepreneurs needs to be appreciated rather than trying to implement a blanket policy to all entrepreneurs, irrespective of aspirations, needs and resources.

Recent media reports provide profiles of individuals that have successfully owned several businesses (e.g., in the *Economist*, *FORBES*, *Business Week* and the *Director*). These individuals are known as habitual entrepreneurs, to reflect their ownership in more than one business, either sequentially (i.e., serial entrepreneurs) or concurrently (i.e., portfolio entrepreneurs). In particular, a distinction has been made in the academic literature between nascent (i.e., individuals considering entrepreneurship) (Reynolds, 1997; Delmar and Davidsson, 2000), novice (i.e., individuals owning their first business) and habitual (i.e., individuals who own or have owned two or more businesses) entrepreneurs (Westhead and Wright, 1998a, b, 1999). Nascent and novice entrepreneurs, by definition, have limited experience of starting or purchasing businesses and may be disadvantaged relative to their experienced counterparts (i.e., habitual entrepreneurs). Initiatives may be required to help nascent and novice entrepreneurs overcome various obstacles to (subsequent) business ownership. Further, a shift in the allocation of resources towards habitual entrepreneurs, rather than the provision of additional initiatives to increase the pool of nascent and novice entrepreneurs may yield greater returns. For example, some financial institutions and enterprise agencies screen applications for assistance (Wright et al., 1997a, b) on the basis on the entrepreneur's experience.

There is an increasing recognition that habitual entrepreneurs own a sizeable proportion of new business start-ups. Estimates have indicated that habitual entrepreneurship is an important phenomenon. Studies conducted in the UK suggest that between 12% and 44% of respondents in private firms are habitual entrepreneurs (Westhead et al., 2003b). This wide variation in the UK may be attributed to differences in definitions and samples used. Some studies reported figures relating to specific regions within the UK, while others report figures relating to representative samples in Great Britain. Where representative samples are used, the figures tend to oscillate around 37% but tend to focus on habitual founders of firms alone. A survey in Great Britain found that serial and portfolio entrepreneurs respectively owned 25% and 12% of independent firms (Westhead and Wright, 1998). Evidence from the USA,

Australia and Malaysia suggests that 51%, 49% and 38% of respondents respectively are habitual entrepreneurs (Schollhammer, 1991; Taylor, 1999).

Although habitual entrepreneurs are widespread and have received media attention, there has been limited conceptual and theoretical understanding of this group. This study seeks to address this void by utilising human capital theory to compare habitual entrepreneurs with novice entrepreneurs. Due to their ownership of multiple businesses, habitual entrepreneurs may have had an opportunity to develop additional knowledge and skills resulting in potentially more diverse human capital (Becker, 1975) than novice entrepreneurs. With only one experience, novice entrepreneurs are unable to move down the experience curve with respect to the problems and processes of identifying and exploiting entrepreneurial opportunities (i.e., to start or purchase a business) (MacMillan, 1986). These views led MacMillan to argue that to really learn about entrepreneurship, there is a need to study habitual entrepreneurship. As a result of their experience and associated human capital, habitual entrepreneurs need to be considered as an important sub-group of entrepreneurs who have the potential to make a fundamental contribution to the process of wealth creation in society (Scott and Rosa, 1996a, 1996b) and aid our understanding of entrepreneurship.

Assuming that all habitual entrepreneurs will out-perform novice entrepreneurs because of their experience may, however, be too simplistic (Ucabasarn et al., 2003a). Earlier studies viewed human capital as including skills and abilities with performance enhancing potential (Becker, 1975). More recently, however, human capital is used as a concept to reflect both positive and negative attributes of individuals (and firms) (Becker, 1993). In the context of habitual entrepreneurs, there is an understanding that business ownership experience (one component of human capital) may result in the acquisition of assets *and* liabilities (Starr and Bygrave, 1991). While business ownership experience can result in the acquisition of human capital enhancing assets such as additional managerial and entrepreneurial experience, an enhanced reputation (if successful), access to additional resources (such as networks and finance), it may also lead to the acquisition of several liabilities. These liabilities can include hubris and staleness, whereby the entrepreneur becomes either over-confident and / or relies on routines

that appeared to work well in his / her previous venture even though the circumstances may have changed.

There is considerable policy discussion surrounding whether the barriers to subsequent business ownership imposed on people whose earlier business(es) had failed, should be relaxed to encourage the supply of experienced habitual entrepreneurs (Enterprise Act, 2002). Though arguments to the contrary exist, it has been suggested that those entrepreneurs who have failed may have an advantage over others because they are forced to reflect on what went wrong and modify their subsequent actions (Sitkin, 1992). The possibility of business ownership experience being associated with both assets and liabilities suggests that we should not blindly assume that habitual entrepreneurs will report superior entrepreneur and firm performance than novice entrepreneurs. A novel contribution of this study is to explore this theme by examining the behaviour and contributions of different types of entrepreneurs based on the level and nature of business ownership experience.

In this study, habitual entrepreneurs are defined as individuals who currently have a minority or majority ownership stake(s) in one or more independent business(es), and who own or have owned a minority or majority equity stake in another independent business. This definition reflects the growing recognition that entrepreneurship is not solely confined to the creation of new businesses (Cooper and Dunkelberg, 1986; Robbie and Wright, 1996, Rosa, 1998, Ucbasaran et al., 2001). A sizeable proportion of entrepreneurs have minority or majority equity stakes in one or more independent businesses that they have established, purchased or inherited. Minority equity stakes should not be excluded because they may reflect team-based activity, quite common among entrepreneurs (Birley and Stockley, 2000). Consequently, there is a need to appreciate that the ownership of an independent business may not be the result of a start-up, may not be a solo activity, and may not be a one-time entrepreneurial action for individual entrepreneurs (Westhead and Wright, 1998a). When formulating policies to encourage entrepreneurship, policy-makers may benefit from acknowledging that there may be a number of paths to ownership and that there may be differences among entrepreneurs resulting from variations in the level and nature of ownership experience.



Although habitual entrepreneurs are increasingly considered to be important Westhead and Wright, 1998a, 1999; Westhead et al., 2003a), there is limited comparative information currently available surrounding the characteristics, behaviours and performance of novice and habitual entrepreneurs. To address gaps in our knowledge surrounding the habitual entrepreneur phenomenon, this study provides fresh evidence on the human capital characteristics, behaviours, and performance contributions of habitual and novice entrepreneurs in Great Britain. The study builds on extant (exploratory) research to provide a theoretically grounded understanding of habitual entrepreneurship using data collected from the owners of a large representative sample of independent businesses in Great Britain.

This thesis seeks to improve our knowledge by making the following contributions. First, guided by economic concepts of human capital, a human capital framework for studying entrepreneurship is developed. Given the absence of explicit theoretical frameworks in previous studies on habitual entrepreneurs, this thesis makes a theoretical contribution to the academic debate on habitual entrepreneurship. A distinction is made between an entrepreneur's general and specific human capital. Most notably, an entrepreneur's specific human capital is explored with regard to entrepreneurship-specific human capital and venture-specific human capital for the first time. Consequently, this study refines existing notions of human capital that have been used in previous entrepreneurship studies.

Second, the thesis examines behavioural differences among entrepreneurs with particular emphasis on how and to what extent opportunities are identified and pursued. Despite recent consensus amongst scholars that the study of entrepreneurship should focus on the identification and exploitation of opportunities (Venkataraman, 1997; Shane and Venkataraman, 2000; Hitt et al., 2001; Ardichvili et al., 2003), there has been limited empirical work in this area. This thesis makes an empirical contribution by investigating this theme.

Third, the thesis provides a detailed investigation of the performance of different types of entrepreneurs based on their experience. In particular, the study extends previous research by examining both the performance of the surveyed businesses owned by the entrepreneurs and the performance of the individual. As a

result of these contributions, the entrepreneur, the entrepreneurial process and outcomes are examined within the same study.

Fourth, the study highlights the importance of acknowledging the heterogeneity amongst entrepreneurs and their activities. In addition to exploring differences between habitual and novice entrepreneurs, the study examines the extent of heterogeneity among habitual entrepreneurs. A theoretical and empirical distinction is made between serial entrepreneurs and portfolio entrepreneurs. By establishing the extent to which entrepreneurs are heterogeneous, this study may aid researchers and policy-makers by providing a more precise understanding of entrepreneurs. MacMillan (1986) argued that not distinguishing between entrepreneurs on the basis of their experience is a fundamental flaw in many studies. By failing to acknowledge the heterogeneity of entrepreneurs, empirical studies may produce biased, static, and inconsistent results. Further, policy-makers may try to implement policies which are inappropriate for certain groups of entrepreneurs. This study also examines heterogeneity in terms of the activities of entrepreneurs. In contrast to many previous studies, entrepreneurship is considered to involve not only new firm formation but also the purchase of existing businesses. In addition, the study takes into account team-based entrepreneurship by including entrepreneurs who have minority as well as majority ownership stakes. While studies show that team-based entrepreneurship is widespread, it is a theme that is under-researched in the academic literature (Birley and Stockley, 2000; Ucbasaran et al., 2004a).

Fifth, the study takes a broader view of entrepreneurship by considering both the entrepreneur and the firm as the unit of analysis. Since the venture cannot be initiated without the entrepreneur (Shook et al., 2003), ignoring the entrepreneur would provide an incomplete view of entrepreneurship. At the same time, since the venture is often a reflection of the entrepreneur's behaviour, ignoring the firm may also result in an incomplete view of entrepreneurship. By examining both the firm and the entrepreneur, this study circumvents these problems.

Sixth, the study is based on sound methodology. It is based on a random stratified sample from which results can be generalised to the population. It utilises valid and reliable measures. In contrast to many previous studies in the area, it

deploys both bivariate and multivariate analysis to test the hypotheses. The multivariate analysis allows us to establish the relative importance of business ownership experience, vis-à-vis other human capital variables.

Finally, the study has implications for researchers and practitioners. If habitual entrepreneurs are found to out-perform their novice counterparts, policy-makers wishing to maximise the return on their investments may chose to target this group. The identification of skills accumulated and learnt by successful habitual entrepreneurs is important as these can then be disseminated to encourage best entrepreneur and business practice. In contrast, if habitual entrepreneurs do perform better, then the actual need for (financial) assistance by this group may be questioned (Holtz-Eakin, 2000). If differences between novice, habitual, serial and portfolio entrepreneurs are established, future studies must at least control for the type of entrepreneur. Further, if these entrepreneurs are a distinct 'breed', then there may be a need for future researchers to develop alternative theoretical explanations for these differences. Implications for practitioners, policy-makers and researcher are discussed at length in the concluding chapter of this study.

Overall, the above contributions are made by seeking to address the following broad research question:

*What is the nature of the relationship between business ownership experience, human capital, entrepreneurial behaviour and performance?*

In order to address this research question and make the contributions listed above, the thesis is structured as follows. Chapter two sets the thesis in context by firstly providing a review of the entrepreneurship literature. The evolution of entrepreneurship research is discussed. Here it is suggested that entrepreneurship research has tended to be dominated by a variety of disciplines during different periods. The alternative theoretical perspectives are then integrated within a human capital perspective of entrepreneurship. The entrepreneur is defined in terms of his / her human capital, where human capital is defined as the achieved attributes, accumulated experience as well as habits and cognitive characteristics that may have a positive or negative effect on productivity (Becker, 1975; 1993; Alvarez and

Busenitz, 2001). Productivity is viewed in terms of business opportunity identification and pursuit; entrepreneur performance and firm performance.

Chapter 3 focuses on the issue of business ownership experience. This chapter outlines the theoretical and practical case for distinguishing between different types of entrepreneurs in terms of the extent and nature of their business ownership experience. The chapter presents figures relating to the scale of habitual entrepreneurship in a variety of country settings. Further, the definitions of novice, habitual, serial and portfolio entrepreneurs adopted in this study are reported.

In Chapter four, the human capital framework developed in Chapter two is utilised to derive a range of hypotheses. These hypotheses propose differences between novice and habitual entrepreneurs, and then serial and portfolio entrepreneurs in terms of their human capital, behaviour and individual and firm-level outcomes.

Chapter five details the methodology utilised to test the presented broad research question and hypotheses. The overall paradigm underlying the study is highlighted. This is followed by a description and justification of the research instrument used, namely a postal questionnaire. Finally, the 'trustworthiness' of the cross-sectional study is assessed by establishing the generalisability of the results (by examining the representativeness of the sample), and the validity and reliability of the measures used.

In Chapters six, seven and eight, the hypotheses developed in Chapter 4 are tested using a variety of bivariate and multivariate statistical techniques. In Chapter six hypotheses relating to human capital-based differences between the groups of entrepreneurs are tested. The extent to which novice and habitual entrepreneurs display different profiles in terms of their general and specific human capital is established. Among the habitual entrepreneurs, the human capital profiles of serial and portfolio entrepreneurs are also identified.

Following a similar pattern, Chapter seven presents the results of the hypothesis testing relating to behavioural differences between the groups of

entrepreneur. In particular, differences in the information search patterns of the entrepreneurs, their attitudes towards opportunity identification and extent of their opportunity identification are tested. Novice, habitual, serial and portfolio entrepreneurs are also compared in terms of the extent to which they pursued business opportunities (i.e., invested time and effort into evaluating the feasibility of the identified opportunity) and the mode of exploitation they selected for the surveyed business (i.e., a start-up or the purchase of an existing business).

Differences between the groups of entrepreneurs in terms of entrepreneur and firm level performance are presented in Chapter eight. Several objective and subjective performance indicators were selected. As intimated above, a key objective of the study was to explore whether experienced habitual entrepreneurs reported superior levels of performance than novice entrepreneurs. Evidence presented will be used to guide policy-maker and practitioner support towards habitual and novice entrepreneurs. Here, the refinement of some of the definitions relating to habitual entrepreneurs was deemed necessary. To check for definitional sensitivity, the hypotheses were tested with regard to whether entrepreneurs were habitual entrepreneurs or not, as well as a continuous variable indicator of prior business ownership experience. In addition, novice entrepreneurs were compared with those habitual entrepreneurs who had consistently failed, or were consistently successful.

In the final chapter (Chapter nine), the findings presented in the results chapters (Chapters six, seven and eight) are summarised and reflected upon. Implications of the findings for policy-makers and practitioners are presented. The limitations of the study are then highlighted, some of which offer avenues for future research. These avenues for future research, among other avenues, are presented in the final section of the concluding chapter.

## **CHAPTER TWO**

### **LITERATURE REVIEW AND SYNTHESIS**

#### **2.1 INTRODUCTION**

Economics suggests that unexploited profit opportunities exist when resources have been misallocated, resulting in some kind of social “waste” (Kirzner, 1982). A profit opportunity implies a pre-existing waste, and entrepreneurship is seen as a mechanism for correcting this waste. It is widely believed that this entrepreneurial function is a vital component in the process of economic growth (Baumol, 1968; Casson, 1982; 1990; Hornaday, 1990; OECD, 1998). In the industrialised nations, entrepreneurship has been a key to growth in productivity and per capita incomes (Baumol, 1986; Hamilton and Harper, 1994). Nevertheless, evidence from the United Kingdom suggests that only a small proportion of businesses have the potential for wealth creation and job generation (Reynolds, 1987; Storey et al, 1987; Storey and Johnson, 1987). As a result, there has been a call for a more efficient use of resources. Instead of simply increasing the supply of entrepreneurs, resources may be used more efficiently by “picking winners” and targeting resources to potentially high-flying businesses. Further, support may be tailored to match the skills, abilities and contributions offered by different types of businesses, by providing ‘hard’ (e.g., financial) and/or ‘soft’ (e.g., information, consultancy) support (Bridge et al., 1998). In many instances, the drivers of wealth creation are ignored. Resource allocation decisions need to consider the entrepreneur as an important unit of policy analysis. An examination of the potential contributions of ‘winning entrepreneurs’ has been neglected. This study addresses this gap in the knowledge base by focusing on the entrepreneur (as well as the firm) as the unit of policy and academic analysis.

There is a vast body of research in the area of entrepreneurship. However, the nature of this research has been highly diverse. There is a lack of an agreed definition and theory of entrepreneurship, and a concern over what entrepreneurship constitutes as a field of study (Gartner, 1990, 2001; Low, 2001). Entrepreneurship is heterogeneous, and involves the creation of new businesses (Gartner, 1990; Reynolds, et al., 1994), business inheritance (Chaganti and Schneer, 1994; Westhead

and Cowling, 1998) and the purchase of established businesses (Cooper and Dunkelberg, 1986; Shane and Venkataraman, 2001). Furthermore, entrepreneurship may not be a single-event action, suggesting one source of heterogeneity among entrepreneurs. Several scholars have suggested that there is a need to distinguish between novice (i.e., individuals with no prior business ownership experience) and habitual entrepreneurs (i.e., individuals with prior business ownership experience) (MacMillan, 1986; Birley and Westhead, 1993b; Westhead and Wright, 1998a,b, 1999).

One of the difficulties faced by entrepreneurship scholars in developing an appropriate theory is due to the multi-disciplinary nature of the phenomenon. Any theory of entrepreneurship must be rooted in the social sciences of psychology, sociology, economics and politics (Amit et al., 1993; Bygrave, 1993). “There is no doubt that a theory of entrepreneurship should reflect a range of decision theoretic, economic and psychological dimensions. It is unclear, however, what core aspects of entrepreneurship should be reflected in such a theory and how the various perspectives can be effectively integrated” (Amit et al., 1993: 824). Low and MacMillan (1988) argued that any theoretical model or research design should integrate the outcomes of entrepreneurial efforts and the processes that led to those outcomes. Given the difficulties associated with trying to integrate various disciplinary perspectives to provide a complete theoretical model, several scholars have attempted to identify key themes / areas that entrepreneurship scholars should focus upon. Stevenson and Jarillo (1990) propose three main categories of research have emerged:

1. Research attempting to explain *what* happens when the entrepreneur acts and the effect upon the general economic system and the development of the market system.
2. Research attempting to explain *why* they act.
3. Research attempting to explain *how* they act.

With varying degrees of emphasis over time, entrepreneurship research has attempted to address these questions. The extent to which emphasis has been placed on

addressing one or more of the above questions, has been influenced by the dominant discipline guiding the approach. For example, the economic approach has tended to explore the first question, while the psychological and sociological approaches have tended to focus on the second question. Until recently, much less work has been undertaken to address the third question. Opportunity-based conceptualisations of entrepreneurship have recently been presented (Hitt et al., 2001, Shane and Venkataraman, 2001). Accordingly, it has been argued that entrepreneurship research should focus on explaining the entrepreneurial process, which is largely viewed in terms of opportunity identification and exploitation (Shane and Venkataraman, 2001). Given the recent popularity of this approach, it will be discussed in greater detail later in this chapter.

The objectives of this chapter are twofold. The first objective is to provide an overview of entrepreneurship research. The second objective is to synthesise this literature and develop an integrative framework to guide the rest of the study. The evolution of entrepreneurship research at points in time is associated with predominant discipline paradigms. Section 2.2 provides a discussion of the economic approach to entrepreneurship. Section 2.3 investigates the psychological aspects of the entrepreneur. The personality / 'trait' school of thinking is discussed and reference is made to cognitive issues. Section 2.4 provides an overview of contextual approaches to entrepreneurship, which suggest that the entrepreneur cannot be separated from the environment in which he/she is operating. Here, the sociological perspective is discussed. In section 2.5, behavioural approaches to entrepreneurship are reviewed. These behavioural approaches saw the resurgence of the psychological paradigm but with evidence of significant advancements since the trait-based approach. In particular, a cognitive lens is used to offer explanations of the behavior and decisions of entrepreneurs. Themes highlighted in previous sections are evaluated and integrated in Section 2.6. A Human Capital Framework for entrepreneurship is presented to guide this study. Finally, Section 2.7 provides some concluding remarks.



## 2.2 THE ECONOMIC APPROACH

The study of the entrepreneur and entrepreneurship was initially influenced largely by economists. As we will see in later sections, however, entrepreneurship as a field has evolved and continues to do so by drawing on many other disciplines. For now, however, the economic perspective shall be discussed.

Cantillon (1755) was the first known scholar to introduce the term entrepreneur into economic theory. He associated risk and uncertainty with the administrative decision making processes of entrepreneurs (Binks and Vale, 1990). Close to this period, the term entrepreneur was also used to refer to an individual's ability to coordinate and combine various factors of production (Say, 1803). The entrepreneur was portrayed as a specialist at accommodating the unexpected and overcoming problems. During this period, the entrepreneur was often associated with a merchant, adventurer or employer. The term was popularised in England by considering direction, control, superintendence, and risk bearing (Mill, 1848). Efforts were made to distinguish the entrepreneur from the business manager. There was a growing appreciation that the entrepreneur was the ultimate source of all formal authority within the organisation (Weber, 1917).

In the post-Second World War period, the 'disappearance' of the entrepreneur from the economic literature, has been attributed to the dominance of the neoclassical school of economic thought (Casson, 1987). The unit of analysis increasingly became the economic system, not the entrepreneur. The focus was on equilibria and the circular flow and hence, away from the adjustment process.

The Austrian School emphasised the entrepreneur's need for information and his/her ability to analyse this information successfully in order to allocate resources correctly and efficiently. Hayek (1937) proposed a world in which there was a continuous process of discovery most of which are minor discoveries about the needs of individual. Markets were seen as allowing individuals to communicate their discoveries and to learn about discoveries made by others, which in turn enabled individuals to coordinate their decisions and thereby move toward a state of

equilibrium. Hayek failed to model the process by which prices are set, and by which they are adjusted toward an equilibrium (Casson, 1982). Kirzner (1973), however, developed Hayek's ideas and suggested that if the wrong price prevailed in the market, this would create opportunities for profit and hence scope for profitable arbitrage. According to Kirzner, 'alertness' to disequilibrium and the ability to engage in profitable arbitrage was the main distinguishing characteristic of the entrepreneur. If an economy is not in equilibrium, there are gains to be made from trade. Possibilities for profitable exchange exist because of imperfect knowledge. Kirzner suggests that information gaps exist but the entrepreneur has special knowledge not possessed by others. By utilising this special knowledge, entrepreneurs can identify (i.e., be 'alert' to) opportunities for profitable exchange and by exploiting these opportunities, move the economy towards equilibrium.

The role of risk and uncertainty in the entrepreneurial process has also been highlighted, particularly by those following the Chicago tradition. The ability of the entrepreneur to handle uncertainty has been largely associated with the work of Knight (1921). Uncertainty is assumed to be a situation where the probabilities of alternative outcomes cannot be determined either by a priori reasoning or by statistical inference. Knight refers to risks as measurable uncertainty. The entrepreneur may be prepared to take risks in an uncertain world. Knight defined the entrepreneur as a calculated risk-takers and the recipient of pure profit, where profit is seen as the reward for bearing the costs of uncertainty. Entrepreneurs are seen as making judgements based on their superior information and knowledge.

In contrast to the work of Kirzner, the German – Austrian tradition associated with the work of Schumpeter (1934) was concerned with instability and economic development. Schumpeter suggested that entrepreneurs are the source of all dynamic change. An entrepreneur is viewed as a special person who has the ability to bring about extraordinary events. The function of the entrepreneur is to innovate or carry out new combinations. Schumpeter identified five types of innovation: i) the introduction of *new goods* (or an improvement in the quality of an existing good); ii) the introduction of a *new method of production*; iii) the opening of a *new market* (especially an export market); iv) the discovery/ creation of a *new source of supply* of

raw materials or half-manufactured goods and; v) the creation of a *new type of industrial organisation*. These innovations may lead to what Schumpeter (1934) termed the creative destruction of existing combinations of resources due to new combinations superseding them. Schumpeter was also adamant in pointing out that risk-bearing was not a crucial function of the entrepreneur since he believed that both entrepreneurs and managers were subject to the risk of failure, and that risk bearing was the function of the capitalist who lends funds to the entrepreneur.

Leibenstein (1968) suggested that the entrepreneur can play a crucial role in the functioning of an economy both in terms of running existing businesses and causing change. Based on the concept of X-efficiency (i.e., the degree of inefficiency in the use of resources within the firm and consequently the extent to which the firm fails to realise its productive potential), two roles of the entrepreneur are identified: Input completion and gap-filling. Input completion refers to making available inputs, which improve the efficiency of existing production methods or facilitate the introduction of new ones, an example being the improvement of information flows within an organisation. Gap-filling on the other hand is akin to the arbitrage function emphasised by Kirzner. In Leibenstein's vision of the entrepreneur, we see evidence of the Kirznerian arbitrageur, the Schumpeterian innovator, the Weberian formal authority and the traditional managerial role of the entrepreneur as associated with Say.

Important insights into understanding and defining the entrepreneur and his/her role have been provided (Casson, 1982; Drucker, 1986). Casson (1982) proposes two approaches to defining the entrepreneur: i) a functional approach (an entrepreneur is what an entrepreneur does) and; ii) an indicative approach (by providing a description of the entrepreneur by which he/she may be recognised). Arguing that problems in defining the entrepreneur arise from a failure to integrate these two approaches, he attempts to integrate them by offering a definition of an entrepreneur as "someone who specialises in taking judgmental decisions about the coordination of scarce resources" (Casson, 1982: 23). Casson emphasises the key role and economic contribution of the entrepreneur as one of allocation and reallocation of factors of production. His analysis enables certain predictions to be

made about entrepreneurial behaviour and the possible strategies which are used by the individual under conditions of uncertainty and incomplete information (Binks and Vale, 1990).

The above discussion highlights the diversity of views relating to entrepreneurship and its role in the economic system. Table 2.1 provides a summary of the themes related to entrepreneurship identified by economists.

**Table 2.1 Approaches / Themes Related to Entrepreneurship Highlighted by Economists**

THEME	AUTHORS
Assumes risk associated with uncertainty	Cantillon, Thunen, Mangolt, Mill, Hawley, Knight, Mises, Cole, Shackle
Supplies financial capital	Smith, Turhot, Bohm-Bawerk, Edgeworth, Pigou, Mises
Innovator	Baudeau, Bentham, Thunen, Schmoller, Sombart, Weber, Schumpeter
Decision-maker	Cantillon, Menger, Marshall, Wieser, Amasa, Walker, Francis Walker, Keynes, Mises, Shackle, Cole, Schultz
Industrial leader	Say, Saint-Simon, Amasa Walker, Francis Walker, Marshall, Wieser, Sombart, Weber, Schumpeter
Manager or superintendent	Say, Mill, Marshall, Menger
Organiser and co-ordinator of economic resources	Say, Walras, Wieser, Schmoller, Sombart, Weber, Clark, Davenport, Schumpeter, Coase
Owner of an enterprise	Quensay, Wiser, Pigou, Hawley
Employer of factors of production	Amasa Walker, Francis Walker, Wieser, Keynes
Contractor	Bentham
Arbitrageur	Cantillon, Walras, Kirzner
Allocator of resources among alternative uses	Cantillon, Kirzner, Schultz

*Source:* Derived from Herbert and Link (1988)

In an attempt to summarise and bring commonality to the themes and characteristics of the entrepreneur presented above, Binks and Vale (1990) present three categories of entrepreneur. The first category refers to those entrepreneurs who may be classed as being 'reactive', i.e., those who respond to market signals and in doing so convey and facilitate the market process. They may be considered the agents of adjustment (consistent mainly with the views of Say, Hayek, Kirzner, Knight, Menger and the Austrian school). The second category, almost the reversal of the 'reactive' group, consists of those entrepreneurs who cause economic development by introducing and innovating ideas which fundamentally rearrange the allocation of factors of production (associated mainly with Schumpeter and to some extent Leibenstein). Finally, there are those entrepreneurs who in their management cause improvements of a gradual nature to existing products and processes (associated with Mill, Weber and Leibenstein). These entrepreneurs do more than merely purvey the market process, they change it but in a gradualistic rather than a fundamental manner (Binks and Vale, 1990).

Having provided a brief overview of the themes associated with the entrepreneur by economists, the following sections will draw on alternative approaches. The following section discusses the 'trait' / personality approach. This is an approach dominated by psychology.

## **2.3 THE 'TRAIT' APPROACH**

The economic approach highlighted above has been criticised on grounds of ignoring important characteristics associated with the individual entrepreneur and focusing too much on the significance of the entrepreneur as a means of achieving economic development. In response to this void, a substantial body of research, drawing largely on the psychology discipline and in particular personality theories, has been conducted in an attempt to understand the characteristics of the entrepreneur. This section provides a review of this research.

### **2.3.1 Psychological Models of the Entrepreneurial Personality (the ‘Trait Approach’)**

Researchers following the trait approach have set out to identify a single personality trait or constellation of traits capable of successfully predicting entrepreneurial behaviour patterns and distinguishing the entrepreneur from other groups. Within this approach, the basic unit of analysis is the entrepreneur, and the entrepreneur’s traits and characteristics are seen as the key to explaining entrepreneurship as a phenomenon (Gartner, 1989).

An extensive number of traits have been examined in the literature such as leadership, conformity, autonomy, independence, aggression, tolerance of ambiguity, need-for-support and endurance. The discussion below provides a flavour of the trait approach by focusing on those traits that have received most attention in the entrepreneurship literature. These traits are the need for achievement, the locus of control and the risk-taking propensity.

#### **2.3.1.1 Need for Achievement (‘n-Ach’)**

One of the most widely discussed traits is the ‘need for achievement’ (n- Ach). McClelland’s (1961) work was a pioneering effort to determine whether entrepreneurs display a certain psychological profile. He defined ‘n-Ach’ as a desire to do well for the sake of an inner feeling of personal accomplishment. Also, he suggested that entrepreneurs should have high n-Ach, as he found that the young men in his sample with a high n-Ach score tended to prefer the occupational status of a business executive as opposed to that of a specialist or professional. McClelland interpreted these results to suggest that high n-Ach would influence a young person to select an entrepreneurial position (Brockhaus, 1982). In an attempt to confirm his findings, in a second longitudinal study, McClelland (1965) found that 83% of men in entrepreneurial positions had demonstrated high n-Ach 14 years earlier, while only 21% of men in non-entrepreneurial positions had demonstrated high n-Ach. Hence, McClelland concluded that a high n-Ach does indeed influence the decision to enter entrepreneurial occupations. McClelland also believed that n-Ach could be increased

and it is in response to this belief that there was a rise in training programmes designed to increase achievement motivation with the aim of increasing the probability of business success and hence economic development (Brockhaus, 1982).

McClelland's work has, however, faced substantial criticisms from a variety of sources. His arguments regarding economic growth (i.e., improving n-Ach can increase the probability of business success and hence economic growth) and the validity of his findings have been questioned on the grounds of biased data selection, analysis, and interpretation (Schatz, 1971), and for seriously underestimating the impact of social factors while overestimating the importance of a single psychological variable in the economic growth equation (Frey, 1984). The Thematic Apperception Test (TAT) used by McClelland to measure n-Ach has also been criticised for low predictive validity, low test-retest reliability, subjectivity and lack of consistency (Stanworth et al, 1989; Johnson, 1990). McClelland's definition of the entrepreneur has also been questioned. McClelland (1965) considered the following occupations as entrepreneurial: commissioned salesmen, management consultants, fund-raisers, executives in large companies, as well as owner/managers of new or small ventures. This definition suggests that McClelland did not directly relate n-Ach with the decision to own and manage a business. This would suggest that McClelland did not actually compare like-with-like, in that senior managers and business founders are not directly compared.

Johnson (1990) provides a review of studies that have been carried out on achievement motivation, and finds that there is considerable variability in the samples of entrepreneurs studied, different operationalisations of n-Ach, and a lack of consistency in the measurement of the achievement motive. Nevertheless, twenty of the twenty-three studies examined revealed a positive relationship between achievement motivation (however defined and measured) and some type of entrepreneurial behaviour or inclination. "It would seem reasonable to draw the tentative conclusion that a positive relationship exists between the motive under study and entrepreneurship. However, it is not possible to state that the case has been proven" (Johnson, 1990: 47). A number of reasons are put forward: Firstly, given the wide variety of measures of achievement motivation used in studies, it cannot be

assumed that they are all measuring the same construct. Secondly, the purpose of most of the research has been to distinguish between entrepreneurs and non-entrepreneurs on the basis of psychological predisposition and motivational inclination. This line of inquiry, as noted by Gartner (1985) assumes that all entrepreneurs and their ventures are basically the same. In reality there is much heterogeneity among entrepreneurs and their ventures (this heterogeneity will be discussed later in the study).

#### 2.3.1.2 Locus-of-Control

Liles (1974) argues it is the potential entrepreneur's perception of a specific situation, as opposed to the actualities involved that influence the decision to engage in an entrepreneurial venture. Because subjective perception of both risk and ability to affect results are crucial to the ultimate decision, it follows that we ought to study the concept of perception of control (Brockhaus, 1982). Studies exploring the locus-of-control (i.e., the extent to which individuals believe that they control their own destinies) as a trait, are largely based on Rotter's (1966) locus-of-control theory. According to this theory an individual perceives the outcome of an event as being either within or beyond his/her personal control and understanding.

Rotter related McClelland's concept of n-Ach to the belief in internal locus-of-control. He claimed that people with a high n-Ach score tended to believe in their own ability to control/influence the outcome of their efforts, and in the efficacy of their own behaviour rather than external forces like luck and destiny. Hence, Rotter hypothesised that individuals with a high internal locus-of-control would be more likely to strive for achievement than individuals with a high external locus-of-control. McGhee and Crandall (1968), Gurin et al., (1969), and Lao (1970) found that individuals with a high internal locus-of-control do in fact have a higher achievement motivation than those with a high external locus-of control. It follows therefore, that if high n-Ach can be associated with entrepreneurial behaviour, so can internal locus-of-control.



Berlew (1975) suggested that entrepreneurs perform better in situations where they have a greater personal responsibility for results (relatively more internal locus-of-control). While studies of locus-of-control have met with similar criticisms to those associated with n-Ach, it is argued that measures of locus-of-control are relatively more consistent and high measures of 'internal' locus-of-control correlate positively with business success (Stanworth et al, 1989). While some studies have been able to suggest that entrepreneurs are more 'internal' than non-entrepreneurs (e.g., Borland, 1974; Brockhaus, 1975; Shapero, 1975; Panday and Tewary, 1979), others have found no significant difference between entrepreneurs and non-entrepreneurs in terms of locus-of-control (e.g., Brockhaus and Nord, 1979; Hull et al., 1980; Mescon and Montanari, 1981; Sexton and Bowman, 1985). Because successful corporate managers who display administrative rather than entrepreneurial skills, also exhibit high levels of internal locus-of-control, Stanworth et al, (1989) claim that internal locus-of-control does not distinguish between entrepreneurs and non-entrepreneurs. However, while internal locus-of-control may fail to uniquely distinguish entrepreneurs from non-entrepreneurs, it may distinguish between successful and unsuccessful entrepreneurs (Brockhaus, 1982).

Stanworth et al (1989) highlight two issues requiring further elaboration. Firstly, locus-of-control scores may shift over time in relation to longer-term successes or setbacks suggesting locus-of-control is essentially an indicator of current optimism and self-confidence. Secondly, existing confusion in distinguishing between 'administrative behaviour' in large firms and 'entrepreneurial behaviour' in small firms may say more about differences in *firm size* than actual behaviour patterns (the relevant behaviours recorded in large firms may in fact approximate to what is known as 'intrapreneurship').

#### 2.3.1.3 Risk-taking Propensity

In Section 2.2, 'assuming risk' was identified as an entrepreneurial theme in the economic literature. Palmer (1971) argued that the entrepreneurial function primarily involves risk measurement and risk-taking. Liles (1974) argues that by becoming an entrepreneur, an individual risks financial well-being, career opportunities, family

relations, and psychic well-being. However, despite these arguments and the general perception of high risk-taking by entrepreneurs, McClelland (1961) argued that individuals with a high n-Ach were characterised as having moderate risk-taking propensities, since high levels of internal locus-of-control and a high achievement motivation create a relatively low perception of the probability of failure. Sexton and Bowman (1985) found no significant difference between those students studying to be entrepreneurs and those who were not, in terms of their tolerance to risk. It should be noted, however, that students who are not yet involved in business may not be in a suitable position to carry out risk evaluation.

Brockhaus (1980a) attempted to compare the risk taking propensities between managers and entrepreneurs by administering the Choice Dilemmas Questionnaire (CDQ) developed by Kogan and Wallach (1964). He failed to determine any significant difference between the two groups. The outcome suggests that risk-taking propensity is not a distinguishing feature of the entrepreneur from the manager. Low and MacMillan (1988) suggested that entrepreneurs should be seen as capable risk managers whose abilities defuse what others may perceive as being high risk ventures/strategies.

How risk-taking propensity is measured has also received attention. Brockhaus' (1980) study has been criticised on grounds that the measure used to measure risk-propensity (i.e., the CDQ) only captures one component of risk, that is the general risk-taking propensity. Other components of risk include the perceived probability of failure for a specific venture and the perceived consequences of failure (Mancuso, 1975). In his defence, Brockhaus (1982) argued that the perception held about these latter components of risk may relate more to environmental factors than to personality-related factors. A given individual may alter his perceived probability of failure for a specific venture if he acquires additional information about the competition, the amount of capitalisation required, the managerial skills and technical knowledge required, or other aspects of the venture. Moreover, the individual may alter his perception of the consequences of failure by learning about individuals who started ventures which subsequently failed (Brockhaus, 1982).

Schwer and Yucelt (1984) extended Brockhaus' (1980) study by evaluating general risk-taking propensity (as in Brockhaus' study) alongside business risk, personal risk, career risk and trivial risk situations. Risk-taking propensities were found to vary depending on the type of risk studied. In addition, significant differences were found in risk-taking propensities according to differences in respondents' age, years of business experience, education, years the business was owned, and the size and type of their business. Risk-taking propensities were found to vary significantly according to respondents' motivational state (i.e., how they feel about themselves, the probability of improving themselves, and the probability of accomplishing something useful). These findings suggest that considerable heterogeneity may exist among entrepreneurs. This latter theme will be explored in greater depth later in this study.

Shaver and Scott (1991) argued that most of the studies discussed above fail to identify / distinguish entrepreneurs in terms of their risk-taking propensity as a result of placing insufficient emphasis on the person as a unit of analysis which encompasses both techniques *and* processes. According to Shaver and Scott (1991), behaviour should be regarded as the consequence of person-situation interactions. They call for a "cognitive process" approach. According to the trait approach, it is assumed that everyone agrees on the level of riskiness and some are more willing to take that risk than others. The cognitive processes approach argues for the possibility that those who found businesses do not consider risk in statistical terms and that there are social cognitive processes involved in constructing representations of the external world.

Using cognitive theory Palich and Bagby (1995) argued that entrepreneurs do not necessarily prefer to engage in more risky behaviour. Rather, their behaviour is the result of framing a given situation more positively than negatively, thereby focusing on the high probability of favourable outcomes and responding to these perceptions. Their empirical evidence, however, produced no significant differences between entrepreneurs and non-entrepreneurs with regard to their responses to a risk propensity scale. Since risk perception influences risk taking, Simon et al (1999) argued that it is important to determine what leads to variations in risk perception.

Specifically, they examined the role of cognitive biases in influencing risk perception. An illusion of control and a belief in the law of small numbers (also known as representativeness) was found to lower the perception of risk associated with a venture.

The cognitive approach has provided a more fruitful avenue for exploring risk-taking behaviour than the trait-based approach. The cognitive approach has also provided insights into other dimensions of entrepreneurial behaviour and has also increased in popularity. The cognitive approach is discussed in greater detail in Section 2.5 below.

### **2.3.2 Critique of the Trait Approach**

Despite its popularity at the time, the trait approach has caused substantial controversy and debate in the field of entrepreneurship. The main criticisms directed at the trait approach are discussed below.

The first set of criticisms relates to definitional and methodological concerns. Many (and often vague) definitions of the entrepreneur have been used, with very few studies employing the same definition. Gartner (1989) identified a number of studies where the entrepreneur was not even defined at all.

Gartner (1990) explored the underlying meanings held by researchers and practitioners about entrepreneurship and identified a number of themes, which characterised the major issues and concerns about entrepreneurship as a field of study. At the end of his study, Gartner concluded that no clear definition of entrepreneurship could be presented as a wide range of beliefs and perceptions about entrepreneurship existed. He called for entrepreneurship researchers to make clear what they are talking about when discussing entrepreneurship (Gartner, 1990: 28).

The lack of agreement as to who the entrepreneur is has led to the selection of samples of “entrepreneurs” that are not necessarily homogeneous or comparable. This lack of homogeneity may be found not only across the various samples, but also

*within* single samples. Sample sizes, methodologies adopted, industries and geographical settings have varied substantially. Robinson et al (1991) argued that the research methodologies employed in the trait approach were not developed for or specifically intended to be used for researching / measuring entrepreneurship. Rather, they were borrowed from psychology and applied to the area of entrepreneurship, sometimes inappropriately and often ineffectively, and in all cases they carried with them the theoretical and meta-theoretical assumptions of the theory from which they came (Robinson et al., 1991). Furthermore, Robinson et al assert that personality theories are intended for use across a broad spectrum of situations. Measuring general tendencies and applying such theories to a specific domain such as entrepreneurship are, therefore, likely to result in the personality measurements losing their efficacy. Indeed, Chell (1987) argued that most studies based on the trait approach to entrepreneurship are characterised as being equivocal and inconclusive, suggesting that a very low correlation exists between the assessment of the trait(s) and actual behaviour.

A second area of concern relates to the efficacy of comparing managers with entrepreneurs. Watson (1995) argues that the distinction between entrepreneurship and professional management is fatal, since the success, growth and survival of any business, whether it be large or small, depends on the quality of its management. Further, Watson argues that organisational activities may be more or less 'entrepreneurial' depending on the extent to which those in charge choose or perceive the need to act in an entrepreneurial manner (i.e., creating new economic activities associated with novel products and services). Managers may need to be entrepreneurial just as entrepreneurs may need to be managerial in order to survive.

A third area of criticism directed towards the trait approach relates to the over-emphasis on the individual entrepreneur at the expense of contextual (i.e., environmental and social) issues. Johnson (1990) argued that there were strong voices in the field of entrepreneurship research suggesting that the individual entrepreneur should be de-emphasised as the focal point of research. Rather, more sophisticated multidimensional models of venture creation and growth should be developed that consider, at a minimum, the individual, the venture, and the external

environment or social context. Aldrich and Zimmer (1986) point out that lessons can be learnt from the research on leadership, where after three decades of study using the trait approach, identifying leaders outside the group context was found to be virtually impossible. While the “person” is of crucial importance in entrepreneurship, the trait approach largely ignores important external environmental interactions. There are many relevant factors that result in the venture creation other than personality variables, like the external environment, the perceptions and interpretations of the external circumstances and, the earlier choices made by the individual. In an attempt to address this issue, an alternative approach which emphasises the role of contextual issues in inducing and influencing entrepreneurship dominated entrepreneurship research. This approach is discussed in the next section (i.e., Section 2.4).

While many have criticised and found fault with the trait approach, a number of authors have argued against its dismissal entirely. In response largely to Gartner’s (1988) paper entitled “‘Who is an Entrepreneur?’ is the Wrong Question’, within which the trait approach is criticised, Carland et al (1988) argue that there are two caveats to Gartner’s arguments. Firstly, “we must be careful never to propose any action which would close or deter any pursuit of knowledge. It is only through our disagreement that we can learn” (Carland et al., 1988: 38). And secondly, “we must never succumb to egotism. It is right that we demand a rigorous and logical theoretical base and a sound methodological approach from our peers. But, we can never presume that our knowledge is adequate to close the door of debate on other thinkers” (Carland et al., 1988: 38). Similarly, Sexton and Bowman (1986) argued that adequately designed and executed studies that employ valid test instruments may yet reveal a unique set of psychological characteristics that differentiate entrepreneurs from non-entrepreneurs.

There appears to be a continuing debate relating to the efficacy of the trait based approach. On the one hand, it is argued that the entrepreneur is the energiser of the entrepreneurial process and therefore should not be overlooked. On the other hand as argued by Gartner and others, research on the entrepreneur should focus on what the entrepreneur *does* and not who the entrepreneur *is*. Despite criticisms raised

about the personality / trait approach, psychological approaches towards understanding entrepreneurship still offer avenues for further exploration. Indeed, cognition-based approaches, which originate from the psychological paradigm and where the emphasis is still on the individual, have recently been heralded as an extremely fruitful way of exploring entrepreneurial behaviour and decision-making processes (Baron, 2004). Despite the concerns about the trait approach, the psychological paradigm has become important once again. One way of explaining this trend is to adopt a 'swings of the pendulum' approach used by Hoskisson et al. (1999). Accordingly, with each swing of the pendulum, a field / domain sees the dominance of a particular paradigm. Each pendulum swing enlarges the domain, allowing later research paradigms to benefit from earlier ones, thereby enriching the field's total body of knowledge. Even if the pendulum swings back to what appears to be the starting point, the level of sophistication and maturity reflects the extent to which the field has advanced. Adopting a similar approach, it can be argued that with the emphasis on cognitive approaches, there has been a swing in the pendulum back to the psychological paradigm. Though the trait-based and cognitive approaches share in common a psychological paradigm, they are quite different. However, only by building on and analysing earlier work could the cognitive approach develop. Before this swing back to the psychological paradigm, however, there was a swing in the pendulum away from the psychological paradigm where the emphasis was on the individual, towards the sociological paradigm where the emphasis was on the context / environment. These contextual approaches are the focus on the next section. This is followed by a discussion of cognitive approaches (section 3.5) whereby the primary focus of entrepreneurship research became the explanation of the entrepreneurial process and entrepreneurial behaviour.

## **2.4 CONTEXTUAL APPROACHES: SOCIOLOGICAL AND ENVIRONMENTAL PERSPECTIVES**

As intimated earlier, one of the main criticisms of the trait approach was the lack of acknowledgement of contextual issues. Several models have been developed to integrate the role of the context within which entrepreneurship takes place. Two broad strands within this approach exist. First, socio-cultural approaches suggest that

an individual's *social context* (i.e., family and ethnic background, gender, education, and incubator employment experience) can shape aspirations and career choices. Second, environmental approaches examine the interaction between the entrepreneur and his/her *operating* (micro and macro) environment.

#### **2.4.1 Socio-cultural Approaches**

Kets de Vries (1977) presented a psychodynamic / social marginality view of the entrepreneur. He describes entrepreneurial behaviour with respect to early childhood experiences. Frustrations and perceived deprivations experienced in early stages of life can impact on an individual's personality. In later life, these individuals may be associated with low self-esteem and low self-confidence. Distrust and suspicion of those in positions of authority make it difficult for such individuals to pursue careers in large structured organisations. In many instances, these individuals perceive the only feasible career option is to create an organisation that is structured around them. The end result is the emergence of an independent economic unit as an act of 'innovative, non-conformist rebelliousness'. Kets de Vries' entrepreneur can be imaginative and highly creative but can also be highly rigid, unwilling to change, hostile, aggressive and impulsive which in the long run may be detrimental to the performance of the business involved in. In contrast to Schumpeter (1934), Kets de Vries suggests some entrepreneurs are pushed into entrepreneurship and they are not 'special people' with unique technical skills and a desire to encourage economic development.

Within the model of the entrepreneur described by Kets De Vries and Schumpeter there appears to exist a perceived incongruity between the individual's personal attributes and the role(s) (s)he holds in society. This incongruity may provide the necessary impetus for such individuals to become entrepreneurs. For such people, there is clearly the 'pull' of assuming a more attractive, socially esteemed role in society, and the 'push' of reducing the incongruity between self-image and socially conferred role image (Chell, 1985: 45).



Gibb and Ritchie (1981) have, however, argued that the stereo-typical notion of the prospective entrepreneur being a behaviourally deviant employee has proved to be of very limited applicability. The main theoretical problem with the psychodynamic / social marginality models is that they ultimately reduce the entrepreneur to a stereo-type who is unable to fit comfortably into conventional organisational life (Stanworth et al, 1989). Further, it describes the extreme of a given population and leaves the vast majority untouched (Robbins, 1979). If the psychodynamic / social marginality perspective was valid, it would follow that a particular set of reasons for engaging in entrepreneurial activity could be identified. However, evidence suggests that motives for business formation are diverse (Chell and Haworth, 1985; Birley and Westhead, 1994).

Stanworth et al., (1989) suggested that entrepreneurship may be induced through an inter-generational inheritance of enterprise culture. Schere et al (1989) using social learning theory, investigated the link between a parent role model and the development of a preference for an entrepreneurial career. They found that the presence of a parent entrepreneurial role model was associated with increased education and training aspirations, task self-efficacy, and expectancy for an entrepreneurial career. Several studies have found that a relatively higher percentage of entrepreneurs had at least one parent who had owned a business or was self-employed (Susbauer, 1969; Collins and Moore, 1970; Roberts and Wainer, 1971; Jacobowitz and Vidler, 1982; Shapero and Sokel, 1982; Donckels and Dupont, 1986; O'Farrell, 1986; Cooper and Dunkelberg, 1987; Curran and Burrows, 1988).

Storey and Jones (1987) and Hamilton (1989) have suggested that individuals may be 'pushed' into starting a new venture or becoming self-employed due to threats of business closures, layoffs, mergers, relocation, rejection of the individual's ideas, and reduced job satisfaction / enjoyment. While several studies carried out in the UK found that between 15 and 30 percent of the business founders were previously unemployed (Binks and Jennings, 1986; Hakim, 1988; Mason, 1989; Storey et al., 1989; Turok and Richardson, 1991), other studies found no evidence of a link between an individuals propensity to be self-employed or new firm founders or unemployed (Gould and Keeble, 1984; Pickles and O'Farrell, 1986). Hamilton

(1989) argued that there is a critical level of unemployment (estimated to be around 20%), beyond which, falling levels of venture formation may be expected.

Gibb and Ritchie (1981) proposed a social development model of entrepreneurship. The supply of entrepreneurs is considered in relation to the types of situation encountered and the social groups to which individuals relate. While their model acknowledges the formative nature of early life experience in creating basic traits and drives, it places equal emphasis on the way adulthood itself may shape entrepreneurial ideas and ambitions. Gibb and Ritchie proposed the following four types of entrepreneurs based on their analysis: the *Improvisors*, which are seen as the small business owners at the early stages of their lives / careers; the *Revisionists*, who are slightly older and close to mid career; the *Superceders*, who are generally into the second half of their life and a new career; and finally the *Reverters*, who are typically older, in late or post careers, and are in the final stages of the life cycle. This perspective appreciates change and the influence of the environment. However, this approach is associated with several weaknesses. While claiming to account for the importance of early experiences in forming traits, the model is largely 'situational', in that it would appear to lose sight of the person by describing behaviour as a function entirely of social influences (Chell, 1985). Further, despite criticising the trait approach (and that of Kets de Vries) for attempting to create a stereotype with limited applicability, Gibb and Ritchie also discuss four stereotypes. Finally, the empirical data used to derive the four types of entrepreneurs was drawn with reference to a small and biased sample of entrepreneurs (Chell, 1985).

So far, several approaches to explaining an individual's decision to become an entrepreneur have been reviewed. Another possible route for explaining such a decision is to investigate the influence of networks. "Within complex networks of relationships, entrepreneurship is facilitated or constrained by linkages between aspiring entrepreneurs, resources and opportunities" (Aldrich and Zimmer, 1986: 8-9). Entrepreneurs are embedded in networks of social relationships. These networks can facilitate the transformation of an idea into a realistic plan; increase aspirations; stimulate ideas; and provide practical help and support (Dubini and Aldrich, 1991; Rush et al, 1987). Amit et al (1993) argue that network theory implies that the

entrepreneurial process can be explained in the context of broad social processes which are more comprehensive and dynamic than simple personality-based (trait) theories.

The incubator organisation has also been found to influence the likelihood and nature of entrepreneurial activity. Cooper (1985) used the term incubator organisation to describe the entrepreneur's place of employment immediately prior to the founding of the new venture. He asserted that incubator organisations influence the processes by which entrepreneurs, at particular times and places, leave to start new firms, hence calling for all organisations to be viewed as a potential incubator influencing its employees' preparedness and motivation to start a new venture. The incubator can provide the entrepreneur with direct and indirect access to the business network of the community, region, and industry. Birley (1985) found that 66% of the founders of new firms in her sample had some relationship to their previous employment, either as a customer, competitor or supplier. Turok and Richardson (1991) suggested that for 50% of the founders in their sample the main source of their ideas was derived from their previous employment or experience gained at work.

The above studies, despite their limitations, suggest that there is some relationship between the social and economic context of the individual and subsequent entrepreneurial decisions. The unit of analysis is extended from being solely the entrepreneur, to being the entrepreneur as well as the environment. An alternative approach which also emphasises the environment will be discussed below. These approaches adopt a more macro view of the environment and its relationship with entrepreneurship.

#### **2.4.2 Environmental Approaches: Resource Dependence Theory and Population Ecology Theory**

Two major theoretical approaches have been used to explore the relationship between the external environment and entrepreneurship: resource dependence theory and population ecology theory. Both these approaches focus on new firm creation. The

unit of analysis focuses on the firm and to a greater or lesser extent the environment, as opposed to the individual. Resource dependence theories view organisations as entering into transactional relationships with environmental factors because they cannot generate all necessary resources (such as finance, technology and customers) internally (Child, 1972; Pfeffer and Salancik, 1978; Pennings, 1982). Within this school of thought, the environment is dominant in determining the survival and development of the firm. The population ecology perspective views the organisation as being more active in its relationship with the environment. The organisation can adapt to its environment and vice versa. Population ecologists use the population of organisations as their unit of analysis to examine organisational birth and death rates as the workings of evolutionary variation and selection.

Central to the population ecology perspective is the concept of a niche, defined as a resource space and regarded as a variable property of the environment. According to the population ecology perspective, density (i.e., the number of organisations within a population which is determined by prior births and deaths), carrying capacity (which relates to the density or number of organisations competing for the same resources within a niche), legitimation and competition play a determining role in the size of organisational populations (Hannan and Freeman, 1977; Hannan and Carroll, 1992; Aldrich, 1990). Population ecologists view the inability of organisations to adapt to change as a dominant organisational characteristic and suggest that organisations which are well adapted to their environments will survive, while those that are not will die (Hannan and Freeman, 1977; Aldrich, 1990). Through this Darwinian selection mechanism, the environment determines the characteristics of the organisations and dictates the ultimate effect on the allocation of entrepreneurial resources (Baumol, 1990).

Amit et al (1993) argue that population ecology theory has developed into a framework capable of integrating other theoretical perspectives and that “ecological thinking” has challenged the previous assumption that success depends solely upon the decisions of individual entrepreneurs, and has increased the understanding of the entrepreneurial process. Several criticisms, however, have been directed towards the population ecology perspective (Bygrave and Hofer, 1991). The perspective fails to

explore what types of organisations are founded. It makes statistical predictions at the population level rather than the individual or organisational level and consequently cannot predict the fate of specific individuals and organisations. Further, it does not allow for the volition of the entrepreneur. Therefore, the population ecology model ignores the possibility of certain entrepreneurs or organisations being below or above the average level. Another major weakness of the perspective is its inability to predict future births and deaths in an industry with accuracy. In recent years, attempts to apply the population ecology perspective to new industries have proved unsuccessful. Finally, there are problems associated with having biological algorithms at the foundation of population ecology models (Bygrave and Hofer, 1991). Bygrave advises caution by arguing that “it is a fallacy to pluck theories from the basic sciences and leapfrog them over others in the hierarchy of sciences to apply them to social sciences without making the necessary logical links, step by step through the relevant sciences” (1993: 259).

## **2.5 THE BEHAVIOURAL / PROCESS APPROACH**

In the sections above the discussions have focused on mainly psychological and sociological arguments attempting to distinguish the entrepreneur from the non-entrepreneur. This earlier work implicitly assumes that entrepreneurs possess unique personality characteristics, and that these characteristics can be identified (Romanelli, 1989). Furthermore, these approaches assume that an entrepreneur is a “state of being” that doesn’t change (Gartner, 1988). Accordingly, this early work examined characteristics without linking them to entrepreneurial actions (Shook et al., 2003). At the other extreme, the environmental approaches reviewed in the previous section largely ignore the entrepreneur and his / her behaviour. These approaches have left many questions about entrepreneurs and their behaviour unanswered (MacMillan and Katz, 1992, Amit et al., 1993). Indeed, over the last decade researchers have ‘rediscovered’ the individual / entrepreneur (Davidsson et al., 2001). There is a clear acknowledgement that new ventures cannot be initiated without an individual or group of individuals (Shook et al., 2003). However, the emphasis now is on the behavioural / process (Gartner, 1990; Gartner et al., 1992) and cognitive aspects (Palich and Bagby, 1995; Busenitz and Barney, 1997) of entrepreneurs and

entrepreneurship, rather than personality characteristics. Bygrave and Hofer (1991) assert that the entrepreneurial process involves all the functions, activities, and actions associated with the perceiving of opportunities and the creation of organisations to pursue them. This section reviews the process / behaviour oriented approach to entrepreneurship (Aldrich and Zimmer, 1986; Low and MacMillan, 1988; Bygrave and Hofer, 1991; Bygrave, 1993; Davidsson et al., 2001;).

Researchers have started to revert to looking at the psychology of the entrepreneur but from the perspective of (social) cognitive theory. Cognitive theories, which date back to the early 1920s, developed largely by Carl Jung, examine human thought processes. In turn these thought processes can be used to predict certain types of behaviour. Studies are focusing on the cognitive processes reported by entrepreneurs and how they used in decision-making (Manimala, 1992; Palich and Bagby, 1995; Busenitz and Barney, 1997; Baron, 1998, Simon et al., 1999; Mitchell et al., 2002; Simon and Houghton, 2003). Studies generally show that entrepreneurs can be distinguished from other groups (mainly managers) in terms of their cognition (i.e., cognitive processes). Cognitive processes refer to the process by which knowledge is received and utilised, sometimes referred to as cognitive heuristics (Shaver and Scott, 1991; Schneider and Angelmar, 1993). The use of heuristics and biases has received considerable attention. Heuristics are simplifying strategies or informal 'rules of thumb' that individuals use to make strategic decisions, especially in complex situations where less complete or uncertain information is available (Tversky and Kahneman, 1974; Nisbett and Ross, 1980; Bazerman, 1990). Cognitive biases are often seen as subjective or predisposed opinions that emanate from specific heuristics (Bazerman, 1990). Commonly used heuristics include, representativeness, anchoring and adjustment, availability and over-confidence (Katz, 1992; Busenitz and Barney, 1997; Simon et al., 1999; Simon and Houghton, 2003). Biases and heuristics have been argued to have a great deal of utility in enabling entrepreneurs to make decisions that exploit brief windows of opportunity (Tversky and Kahneman, 1974; Stevenson and Gumpert, 1985; Baron, 1998). Entrepreneurs have been found to frequently use heuristics to piece together limited information to make convincing decisions in the face of turbulence (Busenitz and Barney, 1997).

Katz (1992) developed a “psychosocial cognitive model” of employment status choice. The model is considered to be *psychosocial* because it utilises an individual’s psychology in the form of values and decision-making processes, and social in that it relies on personal history and social context as factors contributing to the decision process. It is *cognitive* insofar as the decision processes utilise the cognitive heuristics to describe the process and decision likelihoods of the individual. According to the model, the decision process is initiated through any form of “changed awareness or dissonance which results from a filtering of intrapsychic and external changes through the person’s values” (1992: 31). When the decision process has started, the individual begins to consider the options/alternatives available to him/her. The source of these alternatives may be from memory (e.g., an individual who was brought up in a household of self-employed people will have more knowledge or examples of self-employment), or other external sources of information. Once the “alternative-gathering and construction process” has come to an end, the individual has to go through a selection process. The selection stage involves a heuristic process of attaching values reflecting the likelihood of success to each of the alternatives. The heuristics considered include representativeness, availability and anchoring and adjustment. In the final stage, the individual makes a choice, which becomes the one on which he/she acts.

Busenitz and Barney (1997) using the Kahneman and Tversky (1974) framework, compared the cognitive processes utilised by managers and entrepreneurs. They found that entrepreneurs were relatively more overconfident and were more willing to generalise from small, non-random samples (i.e., the ‘overconfidence’ and ‘representativeness’ heuristics, respectively). This is likely to be due to the fact that entrepreneurs tend to have less business related information relative to the manager. Therefore, entrepreneurs have to rely more on their own personal experience and judgement, and have to generalise from the limited information they do have. Furthermore, Busenitz and Barney (1997) argued that entrepreneurs faced greater uncertainty, making the use of such heuristics somewhat necessary and efficient given individuals’ limited information processing capacity. More importantly, they argue that new insights are rarely obtained from existing data and information. The authors argue that those who are more susceptible to the use of

biases and heuristics in decision making are the very ones who are likely to become entrepreneurs.

The adoption of a cognitive approach has led to the development of the term entrepreneurial cognition. This can be seen as the result of a combination of schematic factors, such as the perception of greater chances of success and more behavioural control, and heuristic factors, such as greater reliance on decision-making shortcuts (Busenitz and Lau, 1996). While alternative definitions of entrepreneurial cognition have been presented (e.g., Mitchell et al., 2002), there is an increasing belief that the cognition of entrepreneurs is distinct from that of other groups of individuals.

The cognitive approach has been deemed more successful than other approaches in distinguishing the entrepreneur from other groups of individuals. The approach also moves away from the “state of being” assumption of the personality / trait approach highlighted earlier (Shook et al., 2003). It uses cognition as a predictor of certain aspects of behaviour. However, studies adopting the cognitive approach, share with the personality / trait approach the assumption that entrepreneurs as a group are homogenous, despite evidence to the contrary (see Chapter 3) (Forbes, 1999). Furthermore, while these studies are of behaviour (to varying degrees), few studies have explicitly explored the relationship between entrepreneurial cognition and opportunity identification and exploitation. It has been argued that the boundaries of the field of entrepreneurship research should be drawn around the issue of opportunity identification and exploitation (Venkataraman, 1997; Shane and Venkataraman, 2000; Hitt et al., 2001; Ardichvilli et al., 2003). The field should involve the “scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated and exploited” (Shane and Venkataraman, 2000: 218). As such entrepreneurship research should focus on entrepreneurial individuals interacting with their environment and more specifically, on their actions in discovering, evaluating and exploiting opportunities (Hitt et al., 2001; Shook et al., 2003).



## 2.6 AN INTEGRATIVE HUMAN CAPITAL FRAMEWORK

The review of the literature provided above suggests four core dimensions associated with entrepreneurship (Cooper, 1993; Gartner, 1985; Low and MacMillan, 1988; Ucbasaran et al., 2001): the individual; the process; outcomes; and the context. In an attempt to incorporate these core dimensions deemed important to entrepreneurship research and address the limitations of the previous work highlighted within this chapter, an integrating framework is developed. The human capital framework discussed within this section addresses several concerns directed towards the approaches discussed earlier in this chapter. Firstly, it focuses on the individual entrepreneur as well as the firm as the unit of analysis. As intimated earlier, since ventures cannot be initiated without an individual (or group of individuals) (Davidson and Wiklund, 2001; Shook et al., 2003), ignoring the entrepreneur would provide an incomplete model of entrepreneurship. Furthermore, by focusing on the human capital of the entrepreneur (discussed below), it moves beyond personality characteristics (i.e., traits) and allows for the incorporation of cognition. Human capital can include cognition and can be modified over-time. Unlike most traits / personality characteristics human capital can be developed and change over-time. Secondly, the framework includes the entrepreneurial process, broadly defined in terms of opportunity identification and exploitation. Consequently, the model allows for the exploration of the behaviour of entrepreneurs. Thirdly, the human capital framework described below, meets the criteria stipulated by Low and MacMillan (1988) that, any research design should integrate the outcomes of entrepreneurial effort and the processes that led to those outcomes. Finally, the framework offers a means of identifying heterogeneous groups among entrepreneurs. In particular, this study utilises the human capital framework to distinguish between novice and habitual (experienced) entrepreneurs. This theme is explored in greater depth in the following chapters. The remainder of this section offers an overview of the human capital framework which will guide the remainder of this study.

In further discussions the emphasis is placed on the first three themes (i.e., the individual entrepreneur, the entrepreneurial process, and performance. This should not imply though that the external environmental context is unimportant. The

environment may be a source of opportunities (Kirzner, 1973; Gartner, 1985) and opportunity identification may be a function of the interaction between the individual and the environment (Shane and Venkataraman, 2000). Instead, this study focuses mainly on the relationship between the individual entrepreneur and opportunity identification and exploitation behaviour and subsequent outcomes. This approach is not uncommon (see Shook et al., 2003 for example). Where the empirical evidence is presented, however, the external environment is controlled for where deemed important.

Human capital includes achieved attributes (Becker, 1975), accumulated work and habits that may have a positive or negative effect on productivity (Becker, 1993) and the cognitive characteristics of entrepreneurs (Alvarez and Busenitz, 2001). Within the economic literature, productivity has been largely viewed in terms of earnings and human capital in terms of education and training (Mincer, 1974; Bates, 1990; Becker, 1993). This view of productivity and human capital may be too narrow for the context of entrepreneurship. Firstly, as the definition of human capital provided above implies, human capital can comprise dimensions beyond just education and training. Secondly, productivity within an entrepreneurial context may relate to a variety of outcomes and behaviours. A considerable amount of research suggests that the human capital of the entrepreneur is central to the development and survival of his/her venture (Brüderl, et al., 1992; Gimeno et al., 1997 and; Mosakowski, 1993; Bates, 1995). However, limited research has been conducted surrounding the relationship between human capital and behaviour (i.e., opportunity identification and exploitation). Furthermore, the relationship between human capital and various outcomes associated with entrepreneurship may be mediated (Baron and Kenny, 1986; Cohen et al., 2003) by entrepreneurial behaviour. Since human capital can be viewed as an input, the purpose of this section is to provide a framework that allows us to explore its relationship with various 'outputs' ranging from entrepreneurial behaviour to various outcomes.

Figure 2.1 below illustrates the relationships proposed within the framework. Accordingly, the entrepreneur is viewed in terms of his / her human capital endowment (Theme I). This is consistent with studies that view entrepreneurs with

respect to their resource endowments. In many businesses (especially smaller ones), the entrepreneur may be the key resource of the organisation (or a key constraint) (Castanias and Helfat, 1991; Brown and Kirchhoff, 1997). Furthermore, the entrepreneur can be viewed as both the “foundation and fountainhead” for all other resources that will become the organisation (Greene et al., 1999).

The nature and composition of the entrepreneur’s human capital is expected to be associated with both the processes (i.e., behaviours) and outcomes associated with entrepreneurship. Sarasvathy (2001) argues that entrepreneurship is best viewed from an effectuation perspective. She argues that effectual reasoning is different from causal reasoning where the individual has a given goal to achieve. Effectual reasoning begins with a given set of means and allows goals to emerge contingently over time from the varied imagination and diverse aspirations of the entrepreneur. What individuals know (i.e., the human capital associated with their education, expertise and experience) constitutes (at least partly) the means available to them. Accordingly, the composition and nature of an individual’s human capital is central in determining the ‘imagined ends’. The human capital of the entrepreneur, for example, is likely to be a central determinant of the likelihood, extent and nature of opportunity identification. Entrepreneurs with superior levels of human capital (e.g., in terms of amount and diversity) may be in a better position to both identify an opportunity and then subsequently exploit it (Path 1). Indeed, though there is limited evidence, Venkataraman (1997) argues that opportunity identification may be a function of the individual’s capacity to process information. This capacity, in turn is likely to be associated with their level of human capital. Shane (2000) found that prior knowledge (one aspect of human capital) influenced the ability of entrepreneurs to identify opportunities. Further, the nature and extent of the entrepreneurs human capital may be crucial in accessing and leveraging resources such as social, financial, physical and organisational resources necessary to exploit an identified opportunity.

The experiences, skills and competencies associated with the entrepreneur’s human capital are widely regarded as influencing organisational development, survival and performance (Mosakowski, 1993; Chandler and Hanks, 1994; Storey, 1994; Westhead, 1995; Gimeno et al., 1997; Bates, 1998) (Path 3). Alongside the

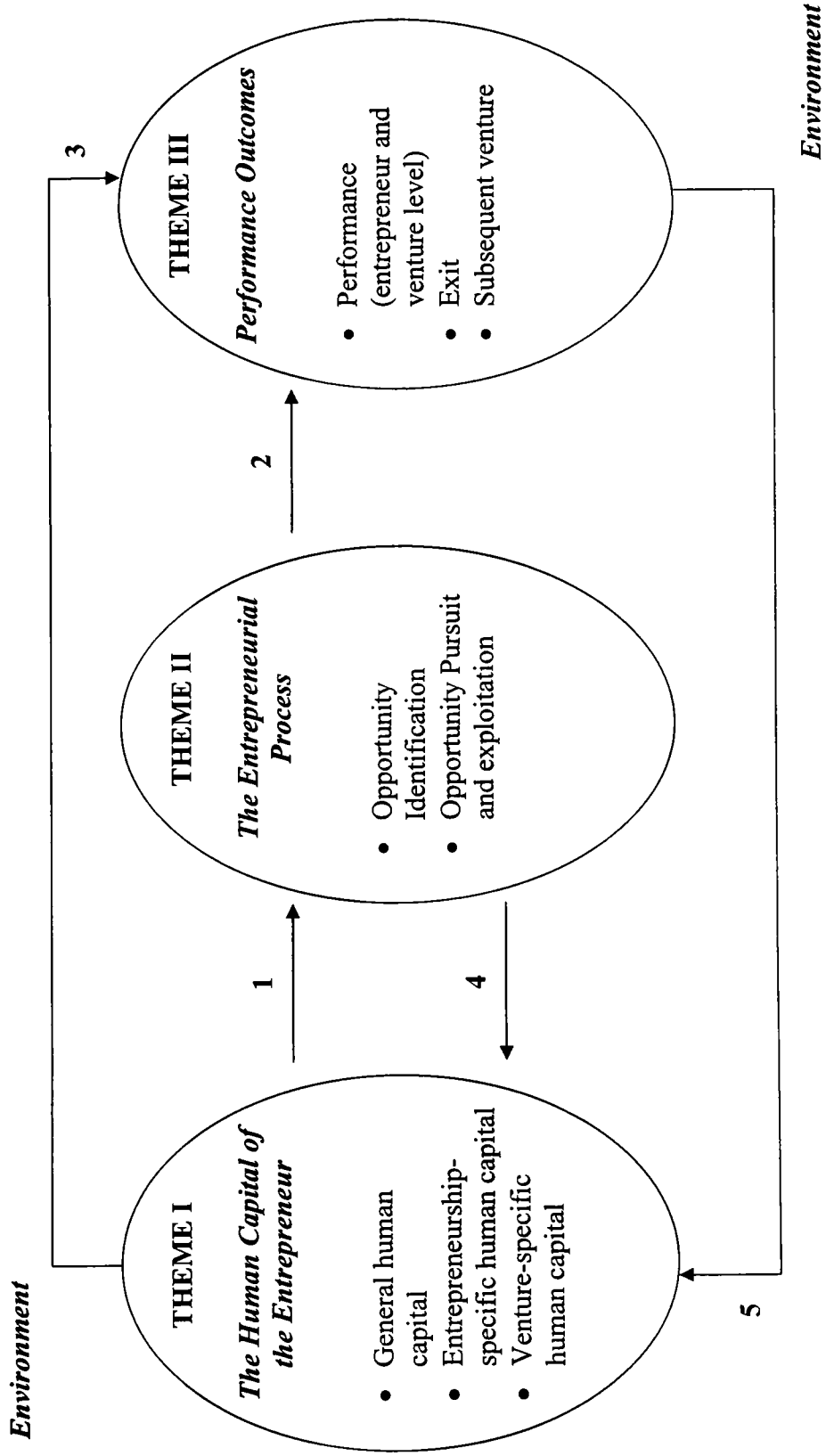
human capital characteristics of the entrepreneur, however, the actual decisions made by the entrepreneur (i.e., behaviours) are likely to influence the outcomes of entrepreneurship (Path 2). Furthermore, behaviours may mediate the relationship between human capital and outcomes.

Once the venture has come into fruition (i.e., the opportunity has been exploited), the entrepreneur is in a position to evaluate it. As a result of this evaluation, the entrepreneur may modify his/her behaviour (i.e., the way the opportunity is being exploited) (back to Path 1). For example, if the entrepreneur is not satisfied with the growth rate of the business having followed organic growth, he/she may opt for an acquisition-based growth strategy. Alternatively, depending on his/her performance threshold (Gimeno et al., 1997), the entrepreneur may choose to exit from the venture (e.g., close the business or sell it). In both situations (i.e., the decision to terminate the venture or modify behaviour), the course of action will be determined by the entrepreneur and therefore by the nature and composition of his/her human capital. This suggests that the entrepreneurial process is by no means static. It involves continuous reassessment and modification of behaviour. Furthermore, at every stage of the entrepreneurial process, the entrepreneur is accumulating knowledge and experience, which feeds back into his/her initial endowment of human capital (Paths 4 and 5). As Winston Churchill put it, “first we shape our structures and afterwards they shape us” (Ansoff, 1979: 203).

An additional source of dynamism relates to re-entry into the entrepreneurial cycle. Entrepreneurs may identify subsequent ventures, suggesting that entrepreneurship is not a single-event action (Birley and Westhead, 1993b; Scott and Rosa, 1996a; Rosa and Scott, 1998; Westhead and Wright, 1998a, 1998b, 1999). While involvement in a single venture offers experience and insights to the entrepreneur, involvement in additional ventures may allow the entrepreneur to gain access to more diverse experiences and also put into practice what they have learnt from the previous venture.

The three core themes illustrated in Figure 2.1 (i.e., the entrepreneur, behaviour and outcomes) and discussed above will now be explored in greater depth.

Figure 2.1 A Human Capital Framework for Understanding Entrepreneurship



### **2.6.1 Theme I: Human Capital of the Entrepreneur**

Human capital may comprise a range of aspects: The owner-founder's achieved attributes (Becker, 1975); family background characteristics (Greene and Brown, 1997); attitudes and motivations (Birley and Westhead, 1990b); education, gender and ethnic origin (Cooper et al., 1994); industry specific know-how (Cooper et al., 1994); competencies / capabilities (Chandler and Jansen, 1992); age (Bates, 1995); and cognition (Alvarez and Busenitz, 2001). Entrepreneurs can develop their human capital over time, which can then determine the extent to which other resources (i.e., financial, social, technological etc.) necessary for the identification and exploitation of a venture idea can be accessed and leveraged.

Becker (1993) argues that one of the most influential theoretical concepts in human capital analysis is the distinction between general and specific knowledge. In most cases, human capital has been viewed as consisting of a hierarchy of skills and knowledge with varying degrees of transferability across firms (Castanias and Helfat, 1992). These skills and knowledge can either be firm specific, which are difficult to transfer across firms, or generic, which are transferable across all industries and firms. This hierarchy can be adapted to reflect the entrepreneur as the unit of analysis. General human capital is generic to all types of economic activity and includes aspects of individual human capital such as education, age, gender and managerial and technical know-how. General human capital may provide access to general networks and may increase the problem-solving ability of the entrepreneur (Cooper et al., 1994). In contrast, an entrepreneur's specific human capital has a relatively more limited scope of applicability (Gimeno et al., 1997). While there is no consistent delineation even between general and specific human capital in the entrepreneurship literature (with the exception of Gimeno et al., 1997), two aspects of an entrepreneurs specific human capital can be proposed. Firstly, there is human capital that has most applicability in the domain of entrepreneurship (i.e., entrepreneurship- specific human capital). Entrepreneurship-specific human capital is seen to include business ownership experience, attitudes towards entrepreneurship, parental business ownership and entrepreneurial capabilities. Gimeno et al. (1997) focus on human capital that is specific to the venture in which the entrepreneur is involved. As such,

human capital specific to the venture comprises motivations specific to the venture (especially in terms of the motives for the purchase or start-up), and the level of business similarity (reflecting the level of experience / prior knowledge the entrepreneur has about the industry and skills needed). The various types of human capital and their components will be discussed in chapter 4. Table 2.2 below provides a summary of the key types and components of human capital utilised in this study.

**Table 2.2 Types and Components of Human Capital**

Type of Human Capital	Components
General Human Capital (GHK)	Education Gender and age Managerial human capital Managerial and technical capabilities
Human Capital Specific to entrepreneurship (SHK <sub>E</sub> )	Business ownership experience Parental business ownership Entrepreneurial capability
Human Capital Specific to the venture (SHK <sub>V</sub> )	Motivations for starting or purchasing the venture Business similarity

### 2.6.2 Theme II: The Entrepreneurial Process

One of the fundamental reasons for the fascination with entrepreneurs seems to centre round why and how they spot new business opportunities. An entrepreneurial opportunity invariably involves the development of some new idea that most others overlook. In the context of environmental change, those with entrepreneurial intentions (Bird, 1992; Krueger, 1993; Krueger and Brazeal, 1994) and (cognitive) orientation (Busenitz and Lau, 1996; Sarasvathy, 2001) often see new opportunities where most others are concerned with protecting themselves from emerging threats and changes resulting from uncertainty. While stocks of information (i.e., knowledge) create mental schemas providing a framework for recognizing new information, opportunity recognition and information search by entrepreneurs may be a function of an individual's capacity to handle complex information (Venkataraman,

1997). Various components of human capital may aid the development of mental schemas (i.e., the cumulative experience, learning and meanings an individual has encountered and constructed about a specific domain) conducive to the identification and exploitation of opportunities. For example, individuals with higher levels of human capital (especially entrepreneurship specific human capital), may have more developed mental schema, which they can use to make assessments, judgements or decisions surrounding opportunity identification and exploitation (Mitchell et al., 2002). As such, it can be argued that the ability of an entrepreneur to identify and exploit an opportunity will be a function of his/her human capital. The next section explores the role human capital can play in the identification of opportunities. This is followed by a discussion of the relationship between human capital and opportunity exploitation.

#### 2.6.2.1 Opportunity Identification

Several conceptual views of opportunity identification exist. Two broad approaches will be discussed here: the 'instantaneous' view and the 'process' view of opportunity identification.

The 'instantaneous' view is largely based on Austrian economist Kirzner's (1973) 'entrepreneurial alertness' concept. This 'alertness' approach to opportunity identification is an inductive one (Witt, 1998) where opportunities are available in the environment, and are waiting to be discovered. Kirzner (1973) used the term entrepreneurial alertness to describe the ability of certain individuals to see where products (or services) do not exist, or have unsuspectedly emerged as valuable. Alertness exists when one individual has an insight into the value of a given resource when others do not. From this perspective, entrepreneurial alertness refers to "flashes of superior insight" that enable one to recognise an opportunity when it presents itself (Kirzner, 1997). Research in the field of cognitive science has shown that people vary in their abilities to combine existing concepts and information into new ideas (see Ward et al., 1997 for a review). Recently, Gaglio and Katz (2001) have suggested that like most psychological constructs, alertness may also lie on a continuum with non-alert and alert being the two extremes. This suggests that there



may be variations among entrepreneurs in terms of their ability to be alert. This ability may, in turn be determined by the make-up of the individual's human capital. Indeed, adopting an Austrian view of opportunity identification, Shane (2000) found that those individuals with higher levels of prior knowledge (i.e., human capital) were more likely to discover opportunities.

Long and McMullan (1984) suggest that opportunity identification should be thought of as a process occurring over time, rather than a single moment of inspiration. Accordingly, opportunity identification is seen to be the result of a myriad of personal, social, cultural and technological forces, which somehow meld together and lead to the perception of a possible market opportunity. In this creative process, the first step is preparation, which represents the knowledge an individual acquires regarding the language and rules of the salient domain (Gaglio, 1997). The amount and kind of preparation an individual has is determined by their experience, knowledge and training (Long and McMullan, 1984). Opportunities are identified or created in an imaginative act by combining individual experience, subjective understanding and current information in a most complex associative way (Witt, 1998). Because human capital reflects such knowledge and experience and in turn can facilitate access to information, it is clear to see the relevance of human capital in understanding opportunity identification from a process perspective.

The view of opportunity identification as a process actually has a long-standing tradition in neo-classical economics. The neo-classical view of opportunity identification is based on search, where the entrepreneur is seen as an economic agent searching for opportunities for profit (Stigler, 1961). According to this 'search perspective', information search is a means of optimising performance. Discoveries are generally modelled to be the result of an extensive search targeted in the direction where the discovery is to be made (Stigler, 1961; Caplan, 1999). This stream of research generally assumes that entrepreneurs know *a priori* where the invention needs to be made and can accurately weigh the cost and benefits of acquiring new information relevant to the invention. The human capital of the entrepreneur may be critical in determining the extent to which the entrepreneur can 'know' where an invention needs to be made. Human capital may also be associated with the ability of

the entrepreneur to 'accurately weigh' the costs and benefits of acquiring new information.

Building on the search perspective, Herron and Sapienza (1992) assume that an individual will engage in conscious search for a profitable business opportunity only when they are motivated properly. As this search involves costs, the extent of this search will depend on the potential benefits. The actual opportunity is seen as emerging from some form of subconscious integration of information obtained during the search process. While Herron and Sapienza (1992) do not elaborate on how this subconscious integration occurs, those with superior levels of human capital may once again have an advantage because of their extensive knowledge, experience and skills.

The above discussion suggests that irrespective of which of these two approaches is adopted, human capital is likely to be associated with opportunity identification. While opportunity identification is a necessary condition for entrepreneurship it is not sufficient (Day, 1987; Shane and Venkataraman, 2000). The exploitation of the opportunity is also important. The following section explores this theme.

#### 2.6.2.2 Opportunity Exploitation

Variations in human capital can be related to the decision to exploit an opportunity and/or how it is exploited. Individuals consider the opportunity cost of pursuing alternative activities in reaching their decision to exploit an opportunity, and pursue an opportunity when the opportunity cost is lower (Reynolds, 1987; Amit et al., 1995). The transferability of information from prior experience to the opportunity (Cooper et al., 1989) as well as prior entrepreneurial experience (Carroll and Mosakowski, 1987), increases the probability of exploiting a business opportunity because learning reduces its cost (Shane and Venkataraman, 2000). Further, individual cognition can influence the decision to exploit an opportunity. Based on attribution theory, Ucbasaran et al., (2003a) suggest that the way in which entrepreneurs evaluate their experiences will determine their decision to exploit

subsequent ventures. Palich and Bagby (1995) found that people who exploit opportunities tended to have more positive perceptions of the opportunity and information relating to it. Moreover, optimism and in some cases over-confidence may increase the likelihood of an entrepreneur exploiting an opportunity (Cooper et al., 1988; Kaish and Gilad, 1991; Kahneman and Lovallo, 1994; Busenitz and Barney, 1997).

In addition to the decision to exploit an opportunity, the mode of exploitation must be considered. There is considerable heterogeneity among exploitation modes selected by entrepreneurs (Venkataraman and MacMillan, 1997; Shane and Venkataraman, 2000; Ucbasaran et al., 2001). Firm creation or the de-novo firm start-up is by far the most common mode of business opportunity exploitation. It has received attention from a perspectives ranging from organisational ecology (Aldrich, 1990), economics (Gerlowski, 1995; Caves, 1988) to organisational theory (Gartner, 1985; Katz and Gartner, 1988; Low and MacMillan, 1988). Entrepreneurship can, however, involve existing organisations (Casson, 1982; Cooper and Dunkelberg, 1986; Amit et al., 1993; Shane and Venkataraman, 2000; Ucbasaran et al., 2001). An opportunity for entrepreneurship can occur through corporate venturing / entrepreneurship; the purchase of an existing organisation (including the management buy-out and buy-in of an organisation) (Wright et al., 1992, 1996); franchising (Spinelli and Birley, 1996), and the inheritance and development of family firms (Westhead and Cowling, 1998). As ownership *and* opportunity identification are considered key to entrepreneurship in this study, the discussion throughout focuses on start-ups and purchases of businesses (further discussion of this follows in section 3.4).

As well as influencing the initial decision to exploit an opportunity, human capital can also influence the mode of exploitation. Chandler and Hanks (1994) suggested that businesses should select strategies to generate rents based upon their resource capabilities. In a similar vein, entrepreneurs should select a mode of exploitation that best suits their human capital endowment (Harvey and Evans, 1995). For example, an entrepreneur who has limited entrepreneurial experience may be able to reduce the perceived risks involved in entrepreneurship by purchasing an

existing business and transforming it as a means of exploiting a new opportunity rather than creating a new business from scratch (Shook et al., 2003). On the other hand, entrepreneurs with prior entrepreneurial experience may be able to raise financial capital more easily and in greater quantities making the purchase of a business as a mode of exploitation more feasible. The main motivation for entrepreneurship may also influence the mode of exploitation. An entrepreneur motivated by the desire to develop an idea, the desire for a challenge and autonomy may be more likely to opt for a start-up than the acquisition of an existing business.

### **2.6.3 Theme III: Outcomes**

The entrepreneurial process can lead to numerous outcomes. In this study, outcomes are viewed largely in terms of performance. Empirical studies exploring the outcomes of entrepreneurship have focused on various financial and non-financial yardsticks to measure firm-level growth and performance (Birley and Westhead, 1990b; Chandler and Hanks, 1993; Cooper, 1993; Bridge et al., 1998). Identifying factors associated with business performance has implications for prospective and practising entrepreneurs, policy-makers and investors. Firm performance studies face a number of challenges (Cooper, 1993). Entrepreneurs pursue a wide variety of goals, some of which are non-economic in nature (Birley and Westhead, 1994). Furthermore, the heterogeneity of firms in terms of scale and potential complicates the task of identifying factors associated with firm-level performance. Researchers have used a variety of performance indicators, making comparisons across studies problematic. Factors associated with survival, for example, may be very different to those associated with growth or profitability. In addition, firm performance studies may be insufficient to fully understand the outcomes associated with the entrepreneurial phenomenon. A number of indicators of venture performance, (such as performance relative to competitors and in particular growth and business volume), have been found to be relevant, and have good inter-rater reliability, internal consistency and external validity (Chandler and Hanks, 1993). They may, however, provide an incomplete picture of the outcomes of entrepreneurship. In the following sub-sections, three outcomes from the entrepreneurial process are discussed: performance of the entrepreneur, firm exit and entrepreneurial re-entry.

### 2.6.3.1 Entrepreneur Performance

Whilst several studies have focused upon the personality and traits of entrepreneurs, the performance of entrepreneurs has received limited research attention. Satisfaction is a fundamental measure of performance for the individual entrepreneur (Cooper and Artz, 1995). According to Cooper and Artz (1995), examining the satisfaction of entrepreneurs offers a number of practical benefits. It may bear upon decisions made by entrepreneurs about whether to continue or close down their venture(s), as well as whether to invest more time and money or cut back. Moreover, greater levels of satisfaction may translate into superior business performance, as more satisfied entrepreneurs may work more effectively with their stakeholders. Indeed, satisfaction with performance measures, have proven to show strong internal consistency and reliability (Chandler and Hanks, 1993; Cooper and Artz, 1995). Satisfaction with performance may be a function of the expectations of the founder about objective performance and may not, therefore, reflect objective performance (Chandler and Hanks, 1993). However, satisfaction measures which incorporate expectations have been developed (Naman and Slevin, 1993). Furthermore, even though satisfaction may not represent an objective performance measure, it does represent an outcome upon which the entrepreneur is likely to subsequently act (as explained above).

Davidsson and Wiklund (2001) as well as Venkataraman (1997) suggest that in order to distinguish what is truly attributable to the individual entrepreneur from the idiosyncrasies of the particular opportunity, the individual must be studied across several new enterprise efforts. Rosa (1998) has called for a measure of entrepreneurial performance in which aggregate value is assessed over all businesses owned by the entrepreneur, not just any single existing firm under study. Most notably, the performance of portfolio entrepreneurs should be assessed with reference to all the businesses they currently have an ownership stake in (Birley and Westhead, 1993b; Westhead and Wright, 1998a). Similarly, Davidsson and Wiklund (2001) suggest that 'entrepreneurial career performance' in terms of the number and proportion of successful new enterprise processes or the total net worth created, may be an effective means of avoiding the mismatch between independent and dependent

variables. Examining the performance of the most recent business of an entrepreneur may still, however, offer some insight. Because knowledge is cumulative, the performance of the final venture may reflect learning over ventures. Furthermore, focusing on a single venture avoids the problem of controlling for differing motives across ventures. Wright et al., (1997a) showed that the motives for starting / purchasing a venture may change for the individual entrepreneur. In addition, examining the individual across several ventures may not apply to novice entrepreneurs who by definition will have only owned one business.

Many studies fail to appreciate the diversity of entrepreneurs and organisations owned by entrepreneurs. This diversity raises opportunities for researchers because there is a need to learn more about how type of entrepreneur or type of organisation influencing relationships between predictors and outcomes (Cooper and Artz, 1995; Chandler, 1996). This study attempts to exploit this opportunity.

#### 2.6.3.2 Exit

Another important, though somewhat neglected outcome of the entrepreneurial process, is the issue of firm exit (Birley and Westhead, 1993a; Stokes and Blackburn, 2002). The term business exit has often been used synonymously with business failure. Defining organisational closure or 'failure', however, is a major problem and a variety of definitions has been utilized (Keasey and Watson, 1991). There is no universally accepted definition of the point in time when an organisation can be said to have closed (or 'failed'). For example, the development of management buy-outs of companies in receivership suggests that although a firm may have failed in terms of one configuration of resources, it may be possible to resurrect it in another form (Robbie et al, 1993). A detailed review of the small firm failure prediction literature by Keasey and Watson (1991) found that statistical models using firm-level data were able to predict the probability of firm closure better than human decision-makers using the same information sets. The major problem, however, is being able to obtain appropriate and representative samples of failed and non-failed firms. Brüderl et al., (1992) examined the contribution of human capital theory and

organisational ecology explanations of new firm failure. Their analysis suggests that variables reflecting the latter approach, such as number of employees, capital invested and organisational strategies are the most important determinants of firm survival. However, characteristics of the founder, notably years of schooling and work experience were also found to be important determinants. Human capital, therefore, may be associated with business failure.

As noted earlier, the entrepreneur's decision to exit from the current business may not strictly be the result of 'failure', or poor financial / economic performance. Ronstadt (1986) noted that 43% of businesses in his sample were exited due to liquidation. Interestingly, he found that 46% of the entrepreneurs in the sample exited by selling their businesses. Firm survival depends on an entrepreneur's own threshold of performance, which is determined by human capital characteristics, such as alternative employment opportunities, psychic income from entrepreneurship and the switching costs involved in moving to other occupations (Gimeno et al., 1997). If economic performance falls below this threshold, the entrepreneur may exit the business but if performance is above this threshold continue with the business. If we accept the perspective that entrepreneurship relates largely to the recognition and exploitation of opportunities, it follows that opportunities may emerge at any time, and in various forms. The option to exit from a firm may also be viewed as the exploitation of a strategic window of opportunity by the entrepreneur. Hence, the entrepreneur may choose to sell a firm if an attractive offer is put forward. Alternatively, the entrepreneur may choose to exit a firm if a more appealing venture (i.e., opportunity) is accessible.

#### 2.6.3.3 Entrepreneurial Re-entry

Once an initial opportunity has been exploited, an entrepreneur may choose to engage in a subsequent venture. It is widely believed that an entrepreneur only starts another business when the first one fails (Dyer, 1994), but as intimated above, exit from a venture may depend on an entrepreneur's own threshold of performance (Gimeno et al., 1997). Entrepreneurs may re-enter the entrepreneurial process either having exited from their previous venture, or by becoming involved in another venture

simultaneously. Entrepreneurs who re-enter the entrepreneurial process have been termed habitual entrepreneurs (Donckels et al., 1987; Birley and Westhead, 1993b; Hall, 1995; Westhead and Wright, 1998a, b). Furthermore, those who exit their first business and then subsequently become involved in another one have been termed serial entrepreneurs, while those who continue to own their initial business and concurrently own another business have been termed portfolio entrepreneurs (Hall, 1995; Westhead and Wright, 1998a, b). These different types of entrepreneurs are discussed in greater detail in the following chapter. Re-entry into the entrepreneurial process allows the entrepreneur to leverage the additional human capital they have acquired through their experience.

## **2.7 CONCLUSION**

In this chapter, several lenses through which entrepreneurship can be viewed have been summarised. While entrepreneurship is widely acknowledged as being a multi-disciplinary topic, an examination of the literature suggests that certain views have dominated entrepreneurship research at various points in time. In section 2.2, entrepreneurship from the economics lens dating as far back as the eighteenth century, was reviewed. In section 2.3, the personality / 'trait' approach relating to entrepreneurs and other groups of individuals was summarised. This approach generally ignored contextual issues. Section 2.4 reviewed studies that attempted to reconcile this problem by focusing on contextual issues. Socio-cultural approaches examined the role of family and society in influencing the decision to become an entrepreneur. The direct effects of the external environment, in terms of resource munificence and competition for resources, were also considered by examining the resource dependency and population ecology perspectives. It was illustrated here that these approaches represented an extreme move away from the emphasis on the entrepreneur. Section 2.5 reviewed behavioural / process approaches to entrepreneurship. The view that social cognition theory should be utilised to explore why entrepreneurs are different from other groups of individuals was presented. Further, social cognition theories were presented as a potentially fruitful framework for the examination of entrepreneurial behaviour.



To address the concerns associated with existing theoretical perspectives, a human capital perspective for understanding entrepreneurs and their behaviour was presented in section 2.6. A distinction between an entrepreneur's general and specific human capital was made. This distinction will be utilised in the remainder of this study to explore differences between types of entrepreneurs, their opportunity identification and exploitation behaviour, and firm and entrepreneur performance.

A recurring theme that emerged from the above review and which has also stifled entrepreneurship research relates to the heterogeneity of entrepreneurs. A vast amount of entrepreneurship research has viewed entrepreneurs as a homogeneous entity (or have ignored the heterogeneity of entrepreneurs), despite observations suggesting otherwise. To address this issue, this study utilises a human capital framework to explore differences between certain types of entrepreneurs. While a variety of categorisations have emerged, this study explores business ownership experience as a source of heterogeneity among entrepreneurs. The level and nature of an individual's business ownership experience may shape their behaviour and performance. Novice entrepreneurs with no prior business ownership experience do not have access to the idiosyncratic knowledge that experienced habitual entrepreneurs do. The rationale for distinguishing between novice and habitual, as well as serial and portfolio entrepreneurs, is the focus of the next chapter.

# **CHAPTER THREE**

## **HETEROGENEITY OF ENTREPRENEURS: NOVICE AND HABITUAL ENTREPRENEURS**

### **3.1 INTRODUCTION**

The view that entrepreneurs are not homogeneous suggests that there is a need to distinguish between different types of entrepreneurs. The purpose of this chapter is to explore this theme. In doing so, several typologies of entrepreneurs are initially discussed. A classification of entrepreneurs based on the level and nature of their prior business ownership experience is then presented.

While there has been some recognition that entrepreneurial acts are intermittent and that entrepreneurs may have to perform more routine tasks, there has been little analysis of their behaviour in moving from initial to subsequent ventures. Wright et al. (1997a) argue that this may be a result of insufficient exploration into the behaviour of the individual entrepreneur, and too much focus on the firm as the unit of analysis, or on the characteristics of the entrepreneur. In this chapter, it is argued that entrepreneurship is not necessarily a single-event action, and should be viewed as a dynamic process. A distinction is therefore made between experienced ('habitual') entrepreneurs and first-time ('novice') entrepreneurs. A number of studies have drawn attention to the experienced habitual entrepreneurship phenomenon in terms of incidence, performance and contributions to local and national economic development (Schollhammer, 1991; Birley and Westhead, 1993b; Kolvereid and Bullvag, 1993; Hall, 1995; Scott and Rosa, 1996a, b; Westhead and Wright, 1998a, b). While it has been suggested that habitual owners have had the opportunity to learn how to efficiently and swiftly overcome the stumbling blocks they encountered in the first place (MacMillan, 1986), to date there is insufficient evidence to conclude that experienced entrepreneurs are more successful than inexperienced novice entrepreneurs. Furthermore, the limited number of empirical studies that have been carried out have focused on business founders, ignoring numerous other entrepreneurial activities discussed in the previous chapter (e.g., the purchase of businesses).

Initial evidence suggests that habitual and novice founders are different from one another (Birley and Westhead, 1993b; Kolvereid and Bullvag, 1993; Alsos and Kolvereid, 1998; Westhead and Wright, 1998, b, 1999), particularly with regard to their motivations and background characteristics. In the following chapter, this earlier work and the human capital perspective developed in the previous chapter are used to derive hypotheses relating to differences between novice and habitual entrepreneurs. These hypotheses would be meaningless however, if there wasn't a strong justification for distinguishing between novice and habitual entrepreneurs in the first place. Consequently, the purpose of this chapter is to make a case for categorising entrepreneurs on the basis of their business ownership experience.

This chapter is structured as follows. In the following section, a review of the literature relating to typologies of entrepreneurs is presented. This is followed by an alternative means of categorising entrepreneurs based on their business ownership experience. A distinction is made between habitual and novice entrepreneurs. The habitual entrepreneur category is further sub-divided into serial and portfolio entrepreneurs. Section 3.3 presents definitions used to differentiate habitual (and serial and portfolio) entrepreneurs from novice entrepreneurs. The definitions operationalised in this study are stated in Section 3.4. The numeric importance of habitual entrepreneurs is highlighted in section 3.5. In section 3.6 a theoretical argument for distinguishing between novice, habitual, serial and portfolio entrepreneurs is presented. The chapter concludes with section 3.7.

## **3.2 TYPOLOGIES OF ENTREPRENEURS**

In Chapter 2 (Section 2.3), the personality / trait approach was criticised for attempting to identify the 'typical entrepreneur'. This is seen as being problematic because entrepreneurs, like individuals in general, are likely to differ from one another. Several classifications of entrepreneurs have been presented. Types of entrepreneurs have been identified with regard to the following variables: structure of the firm (Filley and Aldag, 1978); performance of the venture (Filley and Aldag, 1980; Lafuente and Salas, 1989); managerial practices (Lorraine and Dussault,

1987); degree of innovation (Davidsson, 1988); venture start-up process (Dunkelberg and Cooper, 1982); and the entrepreneur's perception of opportunities (Davidsson, 1988) (see Woo et al, 1991 for a review).

The 'classic' typology has been presented by Smith (1967) who made a distinction between craftsmen and opportunist entrepreneurs. Craftsmen tend to come from blue-collar backgrounds and generally have limited education and managerial experience. They usually prefer technical as opposed to administrative work, and are largely driven by the motivation to make a "comfortable living" (as opposed to "making a lot of money"). They tend to avoid risk-taking and seeking multiple investors or partners. Also, they tend to be less adaptive to change and their firms report lower growth rates (Woo et al, 1991). Conversely, opportunists are characterised as having higher levels of education and broader work experience. They tend to be motivated by financial rewards and the opportunity for building a successful organisation. Opportunists tend to be more responsive to the environment and adapt to changes quicker. They also tend to adopt diverse and innovative strategies and tend to draw on several different sources of finance (Woo et al, 1991).

A number of studies have identified more than two types of entrepreneur. Woo et al (1991) argue that even within these studies, craftsmen and opportunist entrepreneurs are the dominant types. Dunkelberg and Cooper (1982) identified three types: "craftsmen", "growth-oriented", and "independent" entrepreneurs. The first two represent the craftsmen-opportunist categories, while the "independents" were characterised as being largely driven by the need for independence. Lafuente and Salas (1989) identified four main types: "craftsmen" (i.e., motivated by the nature of the work), "family" (i.e., desiring family welfare and meeting a challenge), "managerial" (i.e., motivated by prestige and self-development), and "risk" (i.e., reporting high risk-taking propensity) entrepreneurs. The first two types resemble the craftsman entrepreneur while the latter two the opportunist entrepreneur.

Miner (1997) focusing upon psychological variables identified four types of entrepreneur: the personable achievers, the real managers, the expert idea generators and the empathic super-salespeople. He found variations in venture success and that

some types of entrepreneurs owned businesses that reported superior levels of performance (also see Westhead, 1990, 1995).

Woo et al (1991) examined the conceptual frameworks used and methods applied in developing entrepreneurial typologies. The conceptual argument for these types is often insufficiently justified. Further, Woo et al., (1991) found that major differences in the criteria used to classify entrepreneurs existed. "Craftsmen-opportunist classifications may be highly convenient ways of anchoring our classifications and descriptions of entrepreneurs, yet the polarity inherent in such a distinction was not supported in a large sample" (Woo et al, 1991: 109-110). This implies that typologies are highly sensitive to the classification criteria used, which creates doubt with respect to the wide-scale applicability of the craftsmen-opportunist typology. Further, given the extensive criteria these typologies are based on (e.g., motivations, backgrounds, behaviours, the nature of the venture, etc.) it may not be practical for researchers to control for variations among entrepreneurs, if the focus of the study requires additional variables. This problem may be particularly applicable to studies using questionnaires where the length of the questionnaire significantly influences response rates and the researcher must be prudent in selecting the questions to be included.

Nonetheless, it is undeniable that entrepreneurs are a heterogeneous group. Despite the methodological and practical limitations, taxonomies and typologies of entrepreneurs are potentially important areas for researchers and policy-makers, especially if these classifications can be utilised to identify high and low performing entrepreneurs (and firms). More importantly, to maximise returns from investments, policy support may be targeted towards 'winners' (i.e., successful entrepreneurs). Further, poorer performing entrepreneurs may be identified. These entrepreneurs can then be provided with the support they require to address barriers to business development. Typologies are, therefore, a mechanism which can be used to better allocate resources to entrepreneurs, depending on the objectives of policy-makers and practitioners.

As intimated above, in this study, types of entrepreneurs will be identified with regard to the nature of their prior business ownership experience (Birley and Westhead, 1993b; Kolvereid and Bullvag, 1993; Alsos and Kolvereid, 1998; Westhead and Wright, 1998a, b). The following section discusses a business ownership experience-based classification of entrepreneurs.

### **3.3 DEFINING NOVICE, HABITUAL, SERIAL AND PORTFOLIO ENTREPRENEURS**

Defining habitual entrepreneurs is problematic, especially since there has been limited consensus regarding the definition of the entrepreneur. No clearly agreed upon definition of habitual entrepreneurship exists. Numerous definitions have been utilised, making comparative research in the area difficult. MacMillan (1986) was one of the first to explicitly introduce the term habitual / multiple entrepreneurship. He argued that in order to understand entrepreneurship fully, it is necessary to study habitual entrepreneurs. MacMillan defined habitual entrepreneurs as those individuals who have had experience in multiple business start-ups, and are simultaneously involved in at least two businesses. Donckels et al. (1987), focusing on this 'multiplicity' aspect, used the term multiple business starters. They defined them as entrepreneurs who, after having started a first company, set up or participate in the start-up of (an) other firm(s). A similar definition is provided by Kolvereid and Bullvag (1993) who use the term 'experienced business founders' to describe those individuals who had established more than one business and still owned the most recent business prior to the start-up of the new current independent venture. Birley and Westhead (1993b) define novice founders as those individuals with no previous experience of founding a business, whilst habitual founders have established at least one other business prior to the start-up of the current new independent venture. Habitual entrepreneurs are observed to get bored once the business is established and running smoothly, hence they tend to hand over the business to professional managers and seek excitement and challenges associated with new venture creation (Alsos and Kolvereid, 1998).

It may be noted that the definitions cited above generally focus on business start-ups. Hall (1995) suggests that 'being a habitual' should encompass not only founding / start-ups, but also ownership of a business. He argues that in the small business context, starting or buying a new business may not be significantly different processes. Building on Hall's understanding of habitual entrepreneurs<sup>1</sup>, Westhead and Wright (1998a) extend the definition of habitual entrepreneurs to include individuals who have **established, purchased** and / or **inherited** more than one independent business. This is based on the understanding that entrepreneurship may involve the purchase and / or inheritance of an existing independent business (Cooper and Dunkelberg, 1986).

Habitual entrepreneur definitions used by MacMillan (1986) and Kolvereid and Bullvag (1993) included simultaneity (i.e., involvement in more than one business at a time). Hall (1995) addresses this issue by providing a further refinement to the definition of habitual entrepreneurship. He argues that two different types of habitual entrepreneurs exist. He made a distinction between 'serial' and 'portfolio' entrepreneurs. Serial entrepreneurs are those individuals who own one independent business after another but effectively only one business at a time. Previous businesses may have been sold, closed or had a legal outcome. Portfolio entrepreneurs are those who own more than one business at a time. Hall also made a distinction between voluntary serial owners (i.e., those who sold their previous business or businesses) and involuntary serial owners (i.e., those who have had their previous business closed for them through force of circumstance. Extending Hall's insightful definitions, Westhead and Wright (1998a) define serial entrepreneurs as those individuals who have sold / closed their original independent business but at a later date have established, purchased and / or inherited another independent business. Portfolio entrepreneurs, on the other hand, are defined as individuals who own two or more independent businesses at the same time - they retain their original business and establish, purchase and/or inherit another business. And finally, novice entrepreneurs are defined as those individuals who currently own one independent

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<sup>1</sup> It should be noted that Hall (1995) uses the term habitual owners not entrepreneurs. For simplicity, however, the term habitual entrepreneur is used which encompasses the habitual owner.

business and have no prior business ownership experience as a founder, purchaser or inheritor of a business.

So far the definitions of habitual entrepreneurship have tended to involve some kind of ownership. Corporate entrepreneurship involves managers creating new combinations of resources in existing firms (Schendel and Hofer, 1979; Guth and Ginsberg, 1990; Block and MacMillan, 1993) without the ownership of resources (Stevenson and Jarillo, 1990). Habitual corporate entrepreneurship may take place within an existing firm where managers / employees undertake repeated entrepreneurial initiatives and acts of new resource deployment (Wright et al., 1997a). It is acknowledged that corporate entrepreneurship may take place without involving ownership, however, for the purpose of this study, ownership is considered a necessary condition for entrepreneurship. This issue is discussed further in section 3.5. Table 3.1 below provides a summary of the definitions discussed above.

**Table 3.1      Types of Entrepreneurs by Independent Business Ownership Experience**

Nature of entrepreneurship	Single Activity	Multiple Activity	
	Novice entrepreneurs	Habitual entrepreneurs	
		Sequential Serial entrepreneurs	Simultaneous Portfolio entrepreneurs
Involving <i>New Businesses</i>	Novice founders  1	Serial founders  2	Portfolio founders  3
Involving <i>Existing Business</i>	Novice acquirers  4	Serial acquirers  5	Portfolio acquirers  6

Cells 1, 2 and 3 are relatively self-explanatory and have been discussed above. These entrepreneurs are involved in the founding of a new independent business. Novice founders (cell 1), by definition have only founded one business, while serial founders (cell 2) and portfolio founders (cell 3) have founded two or more independent



businesses sequentially and concurrently / simultaneously, respectively. The entrepreneurs in cells 4, 5 and 6 have an ownership stake(s) in established businesses. The term 'acquirer' is used to reflect the fact that ownership in the existing business is acquired even though this may take a variety of forms. Acquirers include individual entrepreneurs from outside, who undertake a straight purchase or a management buy-in (Robbie and Wright, 1996), and entrepreneurs from inside the firm who undertake a management buy-out. While novice acquirers (cell 4) may have only acquired a single business, serial acquirers (cell 5) and portfolio acquirers (cell 6) purchase more than one business sequentially or simultaneously, respectively. Some acquirers may initially buy the firm (i.e., buy-in or buy-out), sell it but remain as an employee and then repurchase it at a later date. Such entrepreneurs can be characterised as serial management buy-out (MBO) / management buy-in (MBI) entrepreneurs (Wright et al., 1997a).

Westhead and Wright (1998a) acknowledge the possibility of 'intermediate types' where some degree of ownership change and a mixture of new and existing firms may be involved. Entrepreneurs building a portfolio of businesses may dispose of some of them over time whereby they introduce a 'serial' element to their behaviour. Wright et al. (1997a) reveal, from their case studies, that considerable heterogeneity exists among serial entrepreneurs. Their examination of the entrepreneurial process suggests that serial entrepreneurs may be categorised into two groups: defensive serial entrepreneurs (i.e., venture repeaters) and opportunist serial venturers. Venture repeaters are distinguished from opportunist serial venturers in that they tend to undertake a second venture primarily for defensive reasons, in the same sector or even the same firm, often as a reflection of their loyalty to that firm. These latter entrepreneurs tend not to be active between their first and subsequent ventures. In contrast, opportunist serial venturers tend to be active between their first and second ventures. They tend to be motivated by financial gains, the challenge of developing a business, and achieving rapid growth of their ventures. There may be, therefore, a need to control for motivations in analysis when a distinction is being made between novice, serial and portfolio entrepreneurs.

The definitions operationalised in this study and the justification for them is provided in the next section.

### **3.4 DEFINITIONS USED IN THIS STUDY**

Gartner (1990) argued that only by making explicit what we believe can we begin to understand entrepreneurship. He called for entrepreneurship researchers to avoid unstated assumptions and be clear about the definitions they are using. In this study, three criteria were used to define an entrepreneur: ownership, evidence of an ability to identify and exploit at least one opportunity for creating or purchasing a business, and being a founder / owner who is a key decision-maker in the business.

The first criteria for being considered an entrepreneur used in this study related to ownership. Fama and Jensen (1983) argue that classic entrepreneurial firms are those that combine residual risk bearers and decision-makers in the same individuals. Even earlier than Fama and Jensen, Hawley (1907) argued that the entrepreneur needed to be the owner of an organisation. By creating an organisation, the entrepreneur establishes ownership rights over the means of production. Ownership rights are seen as being crucial for undertaking entrepreneurship as they allow the entrepreneur to make decisions about the co-ordination of resources. All material goods are necessarily in the possession of entrepreneurs who have an economic purpose in retaining them. No one can retain them in possession without assuming the risk of ownership, without becoming that is, an entrepreneur (Gartner and Shane, 1995). If the entrepreneur does not own the means of production, entrepreneurial profits will be made by those who do. To obtain an income or profit, the co-ordinator must own or control the resources / activities he co-ordinates. Entrepreneurial profit is seen as the residual between the cost of resources and the uncertain value they have once they have been combined. Hence entrepreneurial profit is the reward for bearing this uncertainty (Hawley, 1907). The potential entrepreneurial manager clearly differs from the entrepreneur in that he/she does not have ownership rights. Hence, they cannot make entrepreneurial profit because the uncertainty arising from the co-ordination of resources is not borne by him / her. Over recent decades more complex forms of remuneration are being offered to

managers in order to deal with agency problems and ensure appropriate incentives. Hence the use of share options and various other remuneration packages may allow the manager to have at least part ownership (Bruce and Buck, 1997). This ownership may not, however, be large enough to induce entrepreneurship. In a recent study, Muzyka et al. (1998) compared managing directors of management buy-outs (i.e., managers with significant ownership stakes) with corporate executives. They found differences between the two groups suggesting a more entrepreneurial attitude and behaviour on the part of MBO managers (e.g., more risk-taking, more autonomy and a higher willingness to trust). Indeed, there is evidence to suggest that the significant equity holdings by managers in buy-outs (relative to debt) are very important in instigating changes in goals, strategy, levels of entrepreneurship and performance (Wright et al., 1992, 2000; Dennis, 1994; Phan and Hill, 1995; Zahra, 1995). These findings lend support to Hawley's argument that ownership is central to entrepreneurship. Since a significant amount of entrepreneurial activity is team-based (Gartner et al., 1994; Birley and Stockley, 2000), the definitions used in this study include minority as well as majority ownership to reflect this.

As intimated earlier (section 2.6.2), entrepreneurship scholars have shown some agreement that entrepreneurship involves the identification and exploitation of opportunities. Accordingly, the second selection criterion for the entrepreneurs to be used in this study was that they had identified and exploited at least one opportunity for creating or purchasing a business. Therefore, though inheritors of businesses may show signs of entrepreneurial behaviour subsequent to their ownership (Westhead and Cowling, 1997), if they had only ever inherited (a) business(es), they were not included in this study. Thus, the entrepreneurs examined in this study had either purchased or established (or both) independent businesses.

Finally, only respondents who were key decision-makers in the businesses surveyed were included in the study. This criterion was used to ensure that business angels or sleeping partners were excluded from the analysis.

On the basis of this discussion, the following definitions of novice, habitual, serial and portfolio entrepreneurs (Westhead et al., 2003b, 2004) were operationalised in this study:

Novice entrepreneurs are individuals with no prior minority or majority business ownership experience either as a business founder or purchaser of an independent business who currently own a minority or majority equity stake in an independent business that is either new or purchased.

Habitual entrepreneurs are individuals who hold or have held a minority or majority ownership stake in two or more businesses, at least one of which was established or purchased. Habitual entrepreneurs were sub-divided as follows:

Serial entrepreneurs are individuals who have sold / closed at least one business which they had a minority or majority ownership stake in, and currently have a minority or majority ownership stake in a single independent business; and

Portfolio entrepreneurs are individuals who currently have minority or majority ownership stakes in two or more independent businesses.

### **3.5 INCIDENCE OF HABITUAL ENTREPRENEURSHIP**

While the number of studies investigating the phenomenon of habitual entrepreneurship is limited, Table 3.2 below summarises the frequency of the phenomenon reported in regional studies conducted in the UK.

Outside the UK, Kolvereid et al. (1993) reported that 34% of surveyed entrepreneurs in Norway were classed as habitual entrepreneurs. In the USA, Ronstadt (1986) reported 63% of respondents were currently practising habitual entrepreneurs. Schollhammer (1991) found that from a sample of entrepreneurs in the Southern California region, 51% had engaged in more than one entrepreneurial

initiative (defined as a person’s direct, managerial or financial involvement in the formation of a new, independent business venture).

While definitional limitations make comparisons between studies problematic, habitual entrepreneurship appears to be a widespread and important phenomenon warranting further research. It may also be noted that the majority of studies listed above solely focus upon habitual owners / founders and new firms. These studies may under-estimate the habitual entrepreneurship phenomenon because they fail to consider alternative forms of entrepreneurship highlighted in Table 3.1 and minority ownership (potentially reflecting team-based ownership).

**Table 3.2      Incidence of Habitual Ownership in The UK**

Locality	Percentage of respondents being habitual founders	Study
Great Britain	37	Westhead and Wright, 1998b
Great Britain	37	Birley and Westhead, 1993
South Hampshire	36	Mason, 1989, p. 337
Wales	34	Westhead, 1988, p. 732
Cleveland	32	Storey, 1982, p.116
Glasgow, London and Nottingham	30	Carter and Cannon, 1992, p.18
East Anglia	28	Keeble and Gould, 1985, p. 205
Great Britain	27	Monck et al., 1988, p. 118
Northern Ireland	25	Hisrich, 1988, p. 34
Northern Ireland	25	Birley et al., 1990, p. 28
Cleveland	16	Storey and Strange, 1992, p. 19
West Lothian	15	Turok and Richardson, 1989, p. 29
Scotland	12	Cross, 1981, p. 219

Adapted from Westhead and Wright (1999)

Rosa (1998) argues that the number of habitual entrepreneurs in itself could be interpreted as showing that there may be a great many survivalist businesses trying to diversify out of trouble, rather than as an indicator of entrepreneurial dynamism. However, there is evidence to suggest that the incidence of habitual ownership

increases amongst the founders and owners of the most successful firms. Storey et al., (1989) found that 80% of the directors of fast growth companies owned other businesses (compared with 30% of the directors of other companies). Similarly, Scott and Rosa (1997) found that the incidence of multiple business ownership amongst directors of high growth firms in Scotland was considerably higher than their lower growth counterparts.

The purpose of this section was to highlight that habitual entrepreneurship is an empirically widespread phenomenon, thereby justifying in-depth research into the phenomenon. The following section offers a theoretical explanation as to why a distinction between inexperienced novice entrepreneurs and experienced habitual entrepreneurs is warranted.

### **3.6 THE THEORETICAL CASE FOR DISTINGUISHING BETWEEN NOVICE AND HABITUAL ENTREPRENEURS**

Once an initial opportunity has been exploited, an entrepreneur may choose to engage in a subsequent venture. Managerial work experience is seen as a key empirical indicator of managerial human capital (Castanias and Helfat, 2001). Following a similar logic, business ownership experience may be viewed as a significant contributor to an entrepreneur's human capital (Stuart and Abetti, 1990; Gimeno et al., 1997; Chandler and Hanks, 1998). Hart et al., (1997) found that both the depth (i.e., measured in years) and breadth (i.e., measured in number of ventures founded) of business ownership experience were important contributors to success in garnering and maintaining access to resources. Business ownership experience may provide entrepreneurs with a variety of resources (or assets) that can be utilised in identifying and exploiting subsequent ventures, such as direct entrepreneurial experience; additional managerial experience; an enhanced reputation; better access to finance institutions; and broader social and business networks. Business ownership experience can be utilised to enhance entrepreneurial skills and reputations that help to influence the reallocation of resources in subsequent ventures established, purchased or inherited (Shane and Khurana, 2003). The development of subsequent businesses owned by habitual entrepreneurs can, therefore, be enhanced by

overcoming the liabilities of newness (Stinchcombe, 1965; Aldrich and Auster, 1986), and attaining developmental milestones quicker (Starr and Bygrave, 1991). Wright et al., (1997b) showed that venture capitalists perceived certain assets of serial entrepreneurs that gave them greater credibility and leverage in obtaining financial resources for their subsequent ventures. Entrepreneurs with successful track records in business are more credible and have more experience in dealing with the technical requirements generally required by investors. Habitual entrepreneurs can lever this experience and obtain financial resources for their subsequent ventures from a variety of sources such as banks, venture capitalists and informal investors and possibly on better terms.

As a result of their business ownership experience, habitual entrepreneurs may display different cognitive characteristics (i.e., in terms of how they think, process information and learn) than novice entrepreneurs. Experience provides a framework for processing information and allows informed and experienced entrepreneurs with diverse skills and competencies (i.e., networks, knowledge, etc.) to foresee and take advantage of disequilibrium profit opportunities that they proactively or reactively identify (Kaish and Gilad, 1991). Based on an earlier experience, entrepreneurs can use their acquired skills and knowledge to identify a business opportunity or to leverage resources. The value of resources and skills acquired through prior business ownership experience is, in part, dependent on the ability of experienced entrepreneurs to learn from their previous experience. Jovanovic (1982) argues that those who enter entrepreneurship gradually learn about their abilities by engaging in the actual running of a business and observing how well they do. As they learn more about their abilities, their behaviour changes overtime. Those who revise their estimates upwards expand output (continue their entrepreneurial career), while revising their estimates downwards contract output (possibly exiting from an entrepreneurial career). The extent and nature of learning, however, is influenced by the cognitive characteristics of the entrepreneur. The economic view such as that presented by Jovanovic may, therefore, benefit from being supplemented with a cognitive view.

Expert information processing literature suggests that there are differences in the cognition of novices and 'experts'. These differences have been attributed (at least partly) to experience in a domain (Abelson and Black, 1986). 'Experts' are viewed as having more extensive and elaborate knowledge structures<sup>2</sup> than 'novices' (Chi et al., 1988). 'Experts' with knowledge organised into broad and complex structures can unify superficially disparate information by focusing on underlying, often subtle and implicit features (Chi et al., 1988), as well as make qualitatively more sophisticated critical judgements (Polanyi, 1962). Also, 'experts' are viewed as being able to manipulate incoming information into recognisable patterns, and then match the information to appropriate actions (Lord and Maher, 1990). This capacity reduces the burden of cognitive processing, which can allow the 'expert' to concentrate on novel or unique material (Hillerbrand, 1989).

It is possible that entrepreneurs who have the benefit of additional entrepreneurial experience (i.e., habitual entrepreneurs) are more reliant on information processing that resembles that of an expert. Habitual entrepreneurs may also display a stronger reliance on entrepreneurial cognition as is evident from the fact they identify and pursue more opportunities (by definition). The reader may recall from the previous chapter (Section 2.5) that entrepreneurial cognition can be seen as the result of a combination of schematic factors, such as the perception of greater chances of success and more behavioural control, and greater reliance on decision-making shortcuts (i.e., heuristics) (Busenitz and Lau, 1996). The higher levels of experience possessed by habitual entrepreneurs may serve to re-enforce and indeed justify the use of heuristics (i.e., mental shortcuts) in decision-making.

The possibility of there being cognitive heterogeneity among entrepreneurs has been largely overlooked despite the increasing attention given to exploring the cognition of entrepreneurs (Forbes, 1999). Nonetheless, there is a long-standing tradition in psychology and cognitive theory of viewing cognitive constructs as falling along continua (Gehisellie et al., 1981). For example, the following bipolar continua have been used to explore cognitive differences among individuals:

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<sup>2</sup> Knowledge structures relate to the content and organisation of knowledge (Schneider and Angelmar, 1993).



Kirton's (1976) adaptation-innovation inventory (KAI); Riding's (1991) wholist-analytical dimension; Allinson and Hayes' (1996) analytical-intuitive cognitive style index; Gavetti and Levinthal's (2000) looking forward-looking backward approach; and Gaglio and Katz' (2001) non-alert and alert continuum. Groups of individuals at extremes of most of these continua tend to be distinguished on the basis of the extent to which they thoroughly process all relevant information. In a similar fashion, entrepreneurs may vary depending on the extent to which they rely on heuristic-based information processing, or systematic information processing. Systematic processing occurs when the individual processes all information carefully and thoroughly (Kullik and Perry, 1994). Traditionally, the cognition of managers relative to entrepreneurs, has been associated with this more systematic style of information processing (Wright et al., 2000). A managerial cognitive approach can be more accurate and optimal, but it can also be slow and exhaustive in terms of the use of cognitive resources (Kullik and Perry, 1994). A managerial cognitive approach, seen as methodical and fact-based (i.e., based on historical data), may be positioned at one extreme on a continuum. In contrast, an entrepreneurial cognitive approach involving beliefs, heuristic-based logic and fast decision-making may be positioned at the other polar extreme. Heuristic-based information processing is deemed necessary for entrepreneurs, because in many cases there are few historical trends and direct information (Hambrick and Crozier 1985) surrounding an opportunity. Efforts by entrepreneurs to reduce the unknown factors of a decision are likely to be very time consuming and costly, and may not be effective (Busenitz and Lau, 1996). If opportunities with narrow time frames are to be exploited, a cognitive style that facilitates swift decision-making may be more effective. However, the extent to which entrepreneurs rely on heuristic-based cognitive processing (i.e., entrepreneurial cognition) may vary. As with other cognitive constructs listed above, the use of entrepreneurial cognition can range from weak to strong use.

Those entrepreneurs who rely extensively on heuristic-based reasoning can be associated with strong entrepreneurial cognition. In contrast, those relying on this mode of reasoning to a lesser extent but more on a systematic (managerial) mode of reasoning are associated with weak entrepreneurial cognition (i.e., more towards to managerial cognition end of the continuum) (Ucbasaran et al., 2003a). Both novice

and habitual entrepreneurs will identify a business opportunity that is facilitated by their entrepreneurial cognition (i.e., heuristic-based reasoning). Habitual entrepreneurs, however, can be characterised as displaying strong entrepreneurial cognition. A habitual entrepreneur will generally become very restless with an individual business as it grows into the mature phase (Alsos and Kolvereid, 1998). This is consistent with the principles of arousal (activation) theory (Hebb, 1955), which posits that individuals prefer and seek out ‘optimal levels’ of stimulation, with the ‘optimal level’ varying across individuals. A habitual entrepreneur’s strong entrepreneurial cognition draws them towards more ambiguous and complex environments and information, in turn facilitating the identification of additional ventures.

The above discussion suggests that there may be a theoretical case for distinguishing between habitual and novice entrepreneurs on grounds that they think differently (i.e., display a different cognitive style). In section 3.3, it was highlighted that habitual entrepreneurs themselves can also be heterogeneous. A distinction was made between serial and portfolio entrepreneurs. To date, as with much of the research on habitual entrepreneurs in general, there has been limited discussion as to the underlying theoretical rationale for distinguishing between these two groups. While it is clear from the definitions provided earlier that serial and portfolio entrepreneurs are distinct, there is some literature that provides additional support for distinguishing between these two groups of entrepreneur. Schein (1978) found that self-employed individuals fell into one of two career anchors. A career anchor is defined as “the pattern of self-perceived talents, *motives*, and values [which] serves to guide, constrain, stabilise and integrate the person’s career” (Schein, 1978: 127). The first anchor is that of autonomy / independence, which represents a desire for freedom from rules and the control of others. The second is the entrepreneurship anchor, which focuses on the creation of “something new, involving the motivation to overcome obstacles, the willingness to run risks, and the desire for personal prominence in whatever is accomplished” (Schein, 1985: 30). Katz (1994) used these two anchors to differentiate between serial and portfolio entrepreneurs (though he did not use the term serial and portfolio entrepreneur). The autonomy anchor was used to largely describe the serial entrepreneur, who typically employed a low-to-

moderate number of employees, tended to prefer sole proprietorship, received a low-to-moderate income and did not demonstrate substantial growth. The autonomy-oriented individual is more likely to be driven by the desire to have freedom from control by others and is likely to be involved in ventures one at a time. In contrast, the entrepreneurship anchor was used to describe the portfolio entrepreneur, whose firms are often designed for growth and, often show signs of growth in sales and employees. For those with an entrepreneurship anchor, the opportunity recognition process or wealth creation, are dominant drivers. This type of entrepreneur is more likely to be 'pulled' into entrepreneurship by the external pressures of the market or wealth (i.e., resources) (Katz, 1994). These entrepreneurs tend to be involved in multiple ventures simultaneously.

The differences in the motives and behaviour patterns of serial and portfolio entrepreneurs may potentially be explained by differences in their cognition. Earlier it was argued that habitual entrepreneurs would display a stronger reliance on entrepreneurial cognition than novice entrepreneurs. If independence and autonomy is indeed a key motivating force behind serial entrepreneurs, they may rely relatively less on entrepreneurial cognition (i.e., heuristic-based processing) because they want to gain and maintain control (i.e., independence). To maintain a position of control, they may feel a greater need for information and, therefore, display elements of a more systematic mode of cognition. Furthermore, to maintain control they prefer to be involved in ventures one at a time. In contrast, portfolio entrepreneurs tend to be driven by the opportunity itself and appear to be more comfortable with experimenting with opportunities (Katz, 1994; Rosa, 1996). The fact that they are already involved in (a) venture(s) may mean that they are less concerned about having complete information relating to the latest opportunity because the other businesses owned offer a source of income.

The above discussion suggests that scholars may benefit from distinguishing between novice and experienced habitual entrepreneurs on the grounds that their cognitive processes are different, which in turn may explain differences in behaviour. Furthermore, it was suggested that among habitual entrepreneurs, there are

differences in the mindset, attitudes and motives of serial entrepreneurs and portfolio entrepreneurs.

### **3.7 CONCLUSION**

The purpose of this chapter has been to make a case for distinguishing between different types of entrepreneurs. The need to acknowledge the heterogeneity of entrepreneurs has been highlighted in several classifications (reviewed in Section 3.2). Methodological and practical limitations associated with previous classifications of entrepreneurs are acknowledged. Heterogeneity of motives, behaviour and outcomes among entrepreneurs may be explained by the level and nature of their business ownership experience. Section 3.3 summarised presented definitions of novice, habitual, serial and portfolio entrepreneurs. In Section 3.4, the definitions operationalised in this study are stated and justified. Three key criteria were deemed necessary for an individual to be considered an entrepreneur in this study. Firstly, they must have an ownership stake in the independent business(es) they are involved in. To account for the possibility of team-based ownership, both minority and majority independent business ownership were considered. Secondly, the individual must have demonstrated an ability to identify and exploit at least one opportunity for creating or purchasing a business. Therefore, while the purchase or establishment of an independent business fits these criteria, the inheritance of a business does not strictly involve opportunity identification. Inheritance is largely reactive and outside the control of the entrepreneur. Further, even if the individual does not want to be involved in the business, he / she may have to due to family pressures. Consequently, those entrepreneurs who had only ever inherited (a) business(es) were excluded from further analysis. Finally, only key decision-makers who were the owners / founders were included.

Section 3.5 provides a summary of studies, which have highlighted the incidence of habitual entrepreneurship. In Section 3.6, a theoretical case for distinguishing between novice, habitual, serial and portfolio entrepreneurs is made. Due to their business ownership experience, habitual entrepreneurs may display an information processing style resembling that of an expert (i.e., possessing extensive

and elaborate knowledge structures that allow them to unify and organise what appears on the surface to be unrelated information, and enabling them to make more sophisticated and innovative judgements). Moreover, habitual entrepreneurs may rely more extensively on entrepreneurial cognition (i.e., extensive use of heuristic-based thinking) than their novice counterparts. Based on Schein's (1978) career anchors theory, Katz (1994) distinguished between those individuals who were motivated by independence and autonomy and who, therefore, preferred to be involved in ventures one at a time, and those motivated by wealth and opportunity and who consequently tend to be involved in ventures simultaneously. These two types clearly fit the serial entrepreneur and portfolio entrepreneur descriptions, respectively.

While a theoretical case for distinguishing between novice and habitual entrepreneurs, and serial and portfolio entrepreneurs has been made, these categorisations may also offer practical benefits. Firstly, categorising entrepreneurs on the basis of their experience (i.e., novice and habitual entrepreneurs) may have practical benefits for researchers. Woo et al. (1991) highlight the difficulties of clustering entrepreneurs on the basis of their goals and backgrounds. Most if not all work on entrepreneurial typologies is based on factor or cluster analysis, requiring substantial amounts of data on various dimensions. This poses practical difficulties for researchers in terms of time and resources. In contrast the habitual – novice categorisation does not require as much data and detail.

Secondly, partly because of the practicalities associated with using this classification, there may be benefits to policy-makers. As the habitual – novice categorisation is easier to use than other typologies, policy-makers may use this categorisation to target support. By identifying certain groups / types of entrepreneurs (and associated businesses) that may be more successful or have potential for growth and employment generation, scarce resources may be used more efficiently and investment returns maximised. Furthermore, by identifying the abilities and needs of various types of entrepreneurs, policy makers may provide 'hard' (i.e., financial) and / or 'soft' (i.e., technical support to enhance skills or capabilities of entrepreneurs) support to specific groups of entrepreneurs (Bridge et al., 1998).

In the following chapter, differences between various types of entrepreneurs are explored further. Utilising the human capital framework developed in the previous chapter, hypotheses are derived suggesting differences between novice and habitual entrepreneurs, as well as differences between serial and portfolio entrepreneurs.

## **CHAPTER FOUR**

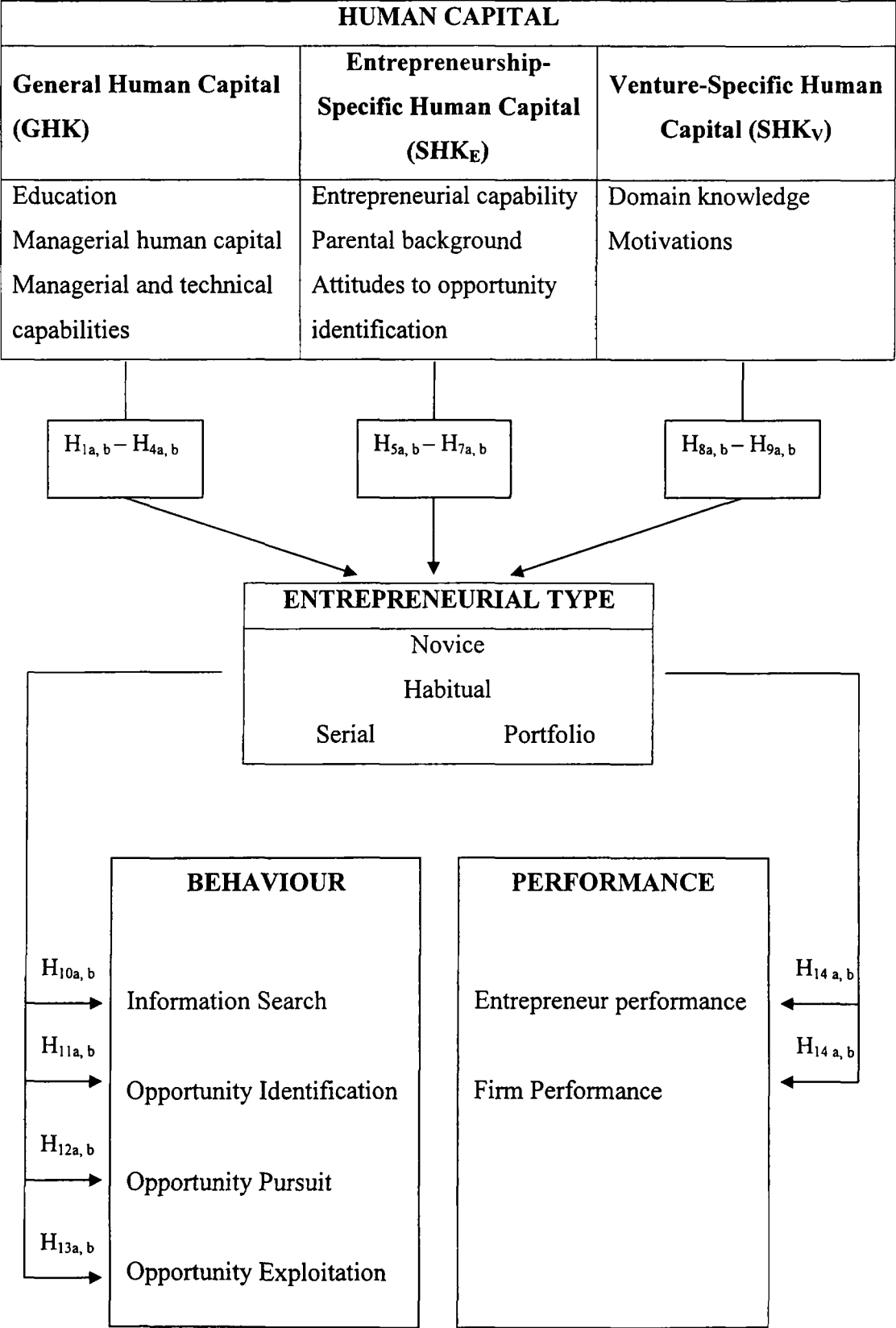
### **DERIVATION OF HYPOTHESES**

#### **4.1 INTRODUCTION**

Guided by the human capital perspective (Chapter 2), the theoretical case for distinguishing between different types of entrepreneurs (Chapter 3), and extant literature on novice and habitual entrepreneurs, several hypotheses are derived suggesting differences between novice and habitual entrepreneurs. Figure 4.1 provides an overview of the hypotheses presented in this chapter.

In sections 4.2, 4.3 and 4.4, hypotheses relating to novice and habitual entrepreneurs are presented, followed by hypotheses suggesting differences between serial and portfolio entrepreneurs. The different types of entrepreneur are presumed to display distinct human capital profiles with regard to their general human capital (e.g., education and managerial human capital); entrepreneurship-specific human capital (e.g., entrepreneurial capability); and venture-specific human capital (e.g., motivations and prior knowledge of the venture domain). These differences are presented in section 4.2. Section 4.3 presents hypotheses relating to behavioural differences between the entrepreneurs in terms of information search, opportunity identification, opportunity pursuit and opportunity exploitation. In Section 4.4, hypotheses are derived which suggest that habitual entrepreneurs (particularly, portfolio entrepreneurs) will report superior levels of entrepreneur and firm performance. Within this section, a distinction is also made between those habitual entrepreneurs who have been previously successful and those who have failed. Finally, concluding comments are presented in section 4.5.

Figure 4.1      Overview of Hypotheses





## **4.2 THE ENTREPRENEUR: THE HUMAN CAPITAL OF NOVICE AND HABITUAL ENTREPRENEURS**

### **4.2.1 General Human Capital**

Cooper et al. (1994) argue that an examination of general human capital provides for a more controlled evaluation of the effects of specific types of human capital. In this section, differences between novice and habitual entrepreneurs are discussed with regard to their general human capital. Also, hypotheses are derived suggesting differences between serial and portfolio entrepreneurs.

#### **4.2.1.1 Education**

Education is one of the most frequently examined components of human capital (particularly by economists such as Mincer, 1974 and Becker, 1975). Education can be an important source of knowledge, skills, problem-solving ability, discipline, motivation and self-confidence (Cooper et al., 1994). These attributes enable highly educated entrepreneurs to cope better with problems. They can also leverage their knowledge to search for and acquire additional resources. There is extensive evidence that education is positively related to individual earnings (Becker, 1993). Furthermore, Evans and Leighton (1989) suggest that education has greater returns for self-employment than for waged employment. Higher levels of education can give habitual entrepreneurs the confidence, motivation and skills to own more than one business. It is expected, therefore, that habitual entrepreneurs will be associated with higher levels of education than novice entrepreneurs. Indeed, evidence from Donckels et al., (1987) and Kolvereid and Bullvåg (1993) shows that habitual entrepreneurs were more likely to have obtained higher education qualifications. Westhead and Wright (1998b), however, revealed that while there were no differences in the education level of novice and serial entrepreneurs, portfolio entrepreneurs reported higher levels of education than the other two groups of entrepreneurs. One interpretation of this finding is that portfolio entrepreneurs who own several businesses at once may require a greater level of knowledge to control multiple businesses simultaneously. This discussion suggests the following hypotheses:

*H<sub>1a</sub>: Habitual entrepreneurs will report a higher level of education than novice entrepreneurs.*

*H<sub>1b</sub>: Portfolio entrepreneurs will report a higher level of education than serial entrepreneurs.*

#### 4.2.1.2 Managerial Human Capital

Managerial human capital refers to innate and learned abilities, expertise, and knowledge (Castanias and Helfat, 2001). It can be acquired and perfected through substantial investment of time in observing, studying, and making business decisions (Cooper et al. 1994). Westhead and Wright (1998a) found no significant difference between novice and habitual entrepreneurs with regard to their managerial background. This finding was based on a relatively simple measure of managerial human capital. Further examination of the relationship between business ownership experience and managerial human capital is, therefore, warranted.

Managerial human capital has frequently been operationalised in terms of the number of years of work experience (Evans and Leighton, 1989; Brüderl et al., 1992; Bates, 1995). The number of years of experience may not, however, closely reflect skills and knowledge developed. Gimeno et al. (1997) suggest two alternative indicators of managerial human capital. One of these relates to the number of prior full-time jobs held. The latter variable is an appropriate proxy for the level of work experience, suggesting a breadth of different experiences. On the one hand, individuals who have been in more job settings are likely to develop a diverse range of managerial knowledge. People who have held multiple jobs may signal that the individual is moving up the corporate ladder. Conversely, many job changes may signal poor performance on the part of the individual, indicating lower levels of managerial human capital. For entrepreneurs and in particular habitual entrepreneurs, many previous jobs may be symptomatic of their tendency to get restless quickly and their attraction to changed contexts.

The quality or nature of work experience also needs to be considered. Gimeno et al., (1997) argue that a second indicator of managerial human capital relates to the achievement level attained by the entrepreneur. Individuals who have held a managerial position or were self-employed may be endowed with superior levels of managerial human capital. Further, individuals who report high numbers of previous jobs and a managerial status are likely to possess higher levels of managerial human capital than those who report a lower level of attainment alongside many previous jobs.

Habitual entrepreneurs may be psychologically attracted to the thrill of initiating a venture (Gimeno et al., 1997; Ucbasaran et al., 2003a). They may place less emphasis on ensuring that they have sufficient managerial knowledge than novice entrepreneurs. However, as a result of their business ownership experience, habitual entrepreneurs may have learned the importance of managerial human capital. Most notably, it can be crucial for exploiting and developing an opportunity into a successful business. Portfolio entrepreneurs may need higher levels of managerial human capital to co-ordinate their multiple businesses and facilitate simultaneous ownership relative to their serial counterparts.

Based on the above discussion, the following hypotheses are presented:

*H<sub>2a</sub>: Habitual entrepreneurs will report higher levels of managerial human capital than novice entrepreneurs.*

*H<sub>2b</sub>: Portfolio entrepreneurs will report higher levels of managerial human capital than serial entrepreneurs.*

#### 4.2.1.3 Capabilities

The various dimensions of human capital discussed so far represent stocks of human capital. Recent work on capabilities (Chandler and Hanks, 1994; Teece et al., 1997; Eisenhardt and Martin, 2000) suggests the need to supplement the stock-based (or static) view of capital / resources with a more process-oriented view. Calls have been made to examine the functional roles / capabilities of entrepreneurs, which are

action-oriented. In the context of the firm, (dynamic) capabilities are viewed as antecedent organisational and strategic routines by which managers alter their resource base. They acquire and shed resources, integrate them and recombine them to generate new value creating strategies (Eisenhardt and Martin, 2000). The entrepreneur must demonstrate capabilities in three functional areas: entrepreneurial, managerial and technical (Penrose, 1959; Mintzberg and Waters, 1982; Schein, 1987; Chandler and Jansen, 1992). Entrepreneurial capabilities will be discussed in greater detail in the next section where human capital specific to entrepreneurship is the focus. Here, managerial and technical capabilities will be explored.

The discussion in the previous section relating to the managerial human capital of different types of entrepreneurs is likely to hold for the case of managerial capabilities. We can reasonable infer that novice, habitual, serial and portfolio entrepreneurs will differ with regard to the importance they give to managerial capabilities. Managerial human capital is crucial for the survival and development of a business. Consequently, habitual entrepreneurs will appreciate its importance and will have sought to acquire this capability in order to own multiple businesses. Owning multiple businesses simultaneously may put more pressure on portfolio entrepreneurs to develop their managerial capabilities. Serial entrepreneurs, who only own one business at a time, may be less likely to appreciate the value of managerial capabilities. The following hypotheses can be derived from the above discussion:

*H<sub>3a</sub>: Habitual entrepreneurs will report a higher managerial capability than novice entrepreneurs.*

*H<sub>3b</sub>: Portfolio entrepreneurs will report a higher managerial capability than serial entrepreneurs.*

Technical knowledge / capabilities (Chandler and Jansen, 1992) in a particular domain may facilitate the identification of an opportunity. In particular, many novice entrepreneurs may have developed technical knowledge when employed in another business and leveraged this knowledge to start / purchase their current business. Hoy and Hellriegel (1982) found that small business founders preferred technical-functional tasks to managerial tasks. As intimated earlier, entrepreneurs are likely to

need technical as well as other capabilities (i.e., managerial and entrepreneurial). Due to business ownership experience, habitual entrepreneurs, may be more aware of the need for a variety of capabilities.

Technical knowledge, on which technical capabilities are based, represents a form of articulable knowledge (i.e., knowledge that can be codified and that can be written and easily transferred or acquired) (Teece et al., 1997). As such, it may be possible to acquire technical capability via employees with technical knowledge. In contrast to technical capabilities, managerial and entrepreneurial capabilities are likely to be based on tacit knowledge and personal experience, and are consequently more difficult to imitate or acquire externally. Habitual entrepreneurs may be in a better position to appreciate this difference. Given the difference in the relative importance likely to be given to technical capabilities by novice and habitual entrepreneurs, one would expect this to influence the level of perceived technical capability reported by type of entrepreneur. Even though habitual entrepreneurs may have reported high technical capability for their first venture, technical knowledge and capability may erode over time and across ventures. To maintain their level of technical capability, entrepreneurs would have to update / upgrade their technical knowledge. Habitual entrepreneurs may be less likely than novice entrepreneurs to focus on developing their technical capability, especially if they believe that technical knowledge can be acquired through employees. In contrast, the former group may place greater emphasis on developing their managerial and entrepreneurial capabilities which may be more difficult to acquire externally. Among habitual entrepreneurs, portfolio entrepreneurs may be more likely to report higher levels of technical capability than serial entrepreneurs, because of the potential for technical synergies across ventures. This discussion leads to the following hypotheses:

*H<sub>4a</sub>: Habitual entrepreneurs will report a lower technical capability than novice entrepreneurs.*

*H<sub>4b</sub>: Portfolio entrepreneurs will report a higher technical capability than serial entrepreneurs.*

#### 4.2.1.4 Demographic Control Variables

Several demographic variables have been used as proxies for human capital. Gender and age variables are stock level measures of human capital. They do not represent aspects that can be developed or changed. In this study, they are viewed as control variables.

Though changing, traditionally women have been associated with lower levels of human capital. Women are more likely to work part-time and withdraw, at least temporarily, from the labour force to have and raise children (Becker, 1993). Consequently, women entrepreneurs may have fewer opportunities to develop relevant experience that allows them to acquire resources necessary for business ownership (Sexton and Robinson, 1989; Cooper et al., 1994). Therefore, the likelihood of women becoming habitual entrepreneurs may be lower than that for male entrepreneurs. Indeed, empirical evidence supports this view (Kolvereid and Bullvåg, 1993; Rosa and Hamilton, 1994; Westhead and Wright, 1998a). Given the traditional earnings pattern of women, female entrepreneurs who become habitual entrepreneurs maybe more likely to adopt the serial entrepreneur root where business ownership takes place one at a time, rather than portfolio entrepreneurship.

Aldrich (1999) highlights that the age of an individual is strongly and positively correlated with work experience. Bates (1995) finds that age is expected to contribute to human capital and hence benefit the entrepreneur until diminishing effort associated with old age sets it. Kolvereid and Bullvag (1993) as well as Westhead and Wright (1998a, b) found that habitual entrepreneurs started their first business at a younger age than novice entrepreneurs. However, not surprisingly, habitual entrepreneurs (in particular, serial entrepreneurs) were older than novice counterparts. Because serial entrepreneurs own businesses one at a time, there are likely to be gaps between business ownership. These gaps may explain why serial entrepreneurs were found to be older than portfolio entrepreneurs.

## 4.2.2 Entrepreneurship Specific Human Capital

### 4.2.2.1 Entrepreneurial capability

The classical entrepreneurial role is seen as one where the entrepreneur scans the environment, selects promising opportunities and formulates strategies accordingly (Mintzberg, 1988; Thompson and Strickland, 1989). Penrose (1959:183) saw the entrepreneurial role as relating to the creation or acceptance of proposals for innovation, and for initiating and making decisions on proposals for expansion. The ability to recognise and envision taking advantage of opportunities (Timmons et al., 1987; Chandler and Jansen, 1992) appears to be at the heart of the entrepreneurial role, describing what is termed in this study as the entrepreneurial capability. In Chapter 3, it was suggested that habitual entrepreneurs display stronger entrepreneurial cognition and expert-information processing. Greater reliance on heuristics (i.e., entrepreneurial cognition), it was argued, would allow habitual entrepreneurs to take advantage of brief windows of opportunity. Further, expert information processing involves unifying superficially disparate information, in turn facilitating the generation of opportunities. One would expect, therefore, that habitual entrepreneurs possessing such cognitive qualities to display higher levels of entrepreneurial capability. Moreover, their experience may give habitual entrepreneurs (over)confidence, suggesting higher reported levels of entrepreneurial capability than their novice counterparts.

As intimated in section 3.5, we would expect habitual (and in particular portfolio) entrepreneurs to report higher levels of entrepreneurial capability than novice entrepreneurs. The emphasis on novelty, the desire for personal prominence, the opportunity and wealth creation drive (Katz, 1994) and strong entrepreneurial cognition provide a mix that would suggest that portfolio entrepreneurs will demonstrate superior entrepreneurial capability than their serial counterparts. From the above discussion, the following hypotheses can be derived:

*H<sub>5a</sub>: Habitual entrepreneurs will report a higher entrepreneurial capability than novice entrepreneurs.*

*H<sub>5b</sub>: Portfolio entrepreneurs will report a higher entrepreneurial capability than serial entrepreneurs.*

#### 4.2.2.2 Parental Background

Cooper et al., (1994) argued that human capital can be acquired directly through personal experience or through observing others such as parents. Knowledge acquired this way (i.e., by observing others) is known as vicarious experience (Bandura, 1995). The occupation of parents can influence the extent to which an individual is exposed to management and entrepreneurship. Having at least one business owner parent can help develop the human capital of the individual but also modify one's expectations about what business ownership entails. Individuals whose parents are business owners appear to be much more likely to follow their parent's footsteps and become business owners themselves (Evans and Leighton, 1989; Curran et al., 1991; Brüderl et al., 1992). It has been argued that habitual entrepreneurs display stronger entrepreneurial cognition. This cognition can be formed in early years and re-enforced through subsequent activities. When people have gained certain preferences and standards of behaviour, they tend to choose activities based on those preferences (Bandura, 1982; Deci, 1992a, b). Consequently, those individuals whose parents are business owners may be more likely to have developed an entrepreneurial cognition and are, therefore, more likely to become habitual entrepreneurs. Among habitual entrepreneurs, portfolio entrepreneurs who appear to be driven by opportunity identification and wealth creation to a greater extent than serial entrepreneurs may be more likely to be drawn from a background of parents who were business owners. The following hypotheses can be presented:

*H<sub>6a</sub>: Habitual entrepreneurs are more likely to have parent(s) who are business owners than novice entrepreneurs.*

*H<sub>6b</sub>: Portfolio entrepreneurs are more likely to have parent(s) who are business owners than serial entrepreneurs.*



#### 4.2.2.3 Attitudes

Attitudes represent one aspect of cognition (Delmar, 2000). Behaviour in a given situation can be viewed as a function of the individual's attitude towards the situation (Fazio et al., 1983; Fiske and Taylor, 1991). Furthermore, Delmar (2000) argues that attitudes are proximal determinants of behaviour (i.e., they are more specific and because of their specificity, they are considered to be important determinants of behaviour). Given earlier definitions of entrepreneurial behaviour as involving the identification of opportunities, attitudes towards opportunity identification are important and represent one dimension of an entrepreneur's entrepreneurship-specific human capital.

In section 2.6.2.1 the development / process approach and the alertness approach to opportunity identification were discussed. According to the developmental / process approach, opportunities are identified through search (Stigler, 1961), or through some kind of creative process. The search based approach relies on the assumption that entrepreneurs know *a priori* where an opportunity can be found, and can accurately weigh the costs and benefits of acquiring new information relevant to the invention. Fiet (1996) argues that entrepreneurs invest in specific information surrounding a targeted invention enabling them to be in a better position to discover the new opportunities. The creativity approach relies on the individual combining their existing knowledge and experiences with current information to create, or identify an opportunity (Long and McMullan, 1984; Witt, 1998).

The alertness perspective argues that the discovery of opportunities cannot be accurately modelled as a rational process. Rather, the focus of attention needs to be on "entrepreneurial alertness", the ability to see where products (or services) do not exist, or have unsuspectedly emerged as valuable. Alertness exists when one individual has an ability to recognise the value of an opportunity when it presents itself, while others do not (Kirzner, 1997). This perspective suggests a much less proactive approach to opportunity identification.

While there has been increasing interest in opportunity identification, there is

limited consensus as to whether one perspective is superior to or more widely used than the other. It is possible that the search and alertness approaches to opportunity identification are not mutually exclusive. Circumstances may dictate when and where one approach is used over another. Further, the level and nature of business ownership experience may shape attitudes towards opportunity identification.

Expert information processing theory may provide some insight into the role of experience in shaping attitudes towards the approach to opportunity identification. Evidence from the expert information processing literature suggests there are differences between novices and experts in the way they process information. As intimated in Section 3.5, habitual entrepreneurs may display an information processing style (i.e., cognition) resembling that of an expert. Accordingly, it was argued that habitual entrepreneurs were more likely to be able to manipulate incoming information into recognisable patterns and then match the information more strongly to appropriate actions (Lord and Maher, 1990). If habitual entrepreneurs are indeed similar to experts in this respect, they may be in a more favourable position to be alert to opportunities. This is because they are more able to make sense of information and opportunities surrounding them. While the above discussion suggests that habitual entrepreneurs may emphasise a favourable attitude towards an alertness-based approach to opportunity identification, Long and McMullan (1984) argue that opportunity identification is a process, whereby social, personal (i.e., knowledge and experience), cultural and technological forces come together, and result in the eventual development of an opportunity. In the early stages of the process, Long and McMullan emphasise the importance of experience, knowledge and education in the development of an opportunity. Due to their experience, habitual entrepreneurs may be in an advantageous position relative to their novice counterparts in adopting a developmental approach also. Furthermore, their experience may allow them to be more effective in searching for and selecting information that is most useful for the identification and development of an opportunity. There is no direct guidance in the literature to suggest that there are variations between portfolio and serial entrepreneurs with regards to the emphasis placed on developmental and alertness approaches to entrepreneurship. Some serial entrepreneurs report a 'reflective' period between ventures (Wright et al., 1997a), which may facilitate the 'development' of an opportunity. Conversely, portfolio

entrepreneurs may be less likely to have time to develop an opportunity, but may be more alert to opportunities in the internal (i.e., within the businesses) and external environments. Based on this discussion, the following hypotheses are derived:

*H<sub>7a</sub> Habitual entrepreneurs will place greater emphasis on being alert to opportunities than novice entrepreneurs.*

*H<sub>7b</sub> Portfolio entrepreneurs will place greater emphasis on being alert to opportunities than serial entrepreneurs.*

*H<sub>7c</sub> Habitual entrepreneurs will place greater emphasis on a developmental approach to identifying opportunities than novice entrepreneurs.*

*H<sub>7d</sub> Portfolio entrepreneurs will place less emphasis on a developmental approach to identifying opportunities than serial entrepreneurs.*

### **4.2.3 Venture Specific Human Capital**

#### **4.2.3.1 Knowledge of the Venture Domain**

A measure of specific human capital is an entrepreneur's knowledge of the venture domain relating to customers, suppliers, products, and services (Gimeno et al., 1997). Yet such knowledge and associated ties largely lose their value outside their original context. This knowledge should be directly related to the degree of similarity between the new venture and the organisation where the entrepreneur was previous employed, or had an ownership stake in. The level of business similarity may be critical to venture success, favouring those entrepreneurs who have been exposed to it (Sandberg, 1986; Cooper et al., 1994). In addition, similarity between the new venture and the prior experience may allow the entrepreneur to build on prior relationships with relevant stakeholders. Consequently, this may minimise the "liability of (organisational) newness" (Stinchcombe, 1965; Aldrich and Auster, 1986).

Knowledge of the venture domain is likely to be important for both novice and habitual entrepreneurs. Habitual entrepreneurs who have been through the process of business ownership may have the confidence to venture into areas where they have relatively limited knowledge (Wright et al., 1997a). This may be facilitated by their strong reliance on entrepreneurial cognition, which allows habitual entrepreneurs to make decisions with limited information. Alternatively, hubris may lead experienced habitual entrepreneurs to venture into a territory where they have limited knowledge. However, Shane (2000) found that knowledge relating to a particular market is crucial in identifying opportunities in that area. Furthermore, an entrepreneur's previous investments and repertoire of routines (i.e., history) can constrain future behaviour (Minniti and Bygrave, 2001). Path dependency may be more of an issue for habitual entrepreneurs, such that they choose activities that reinforce their previous inclinations (Bandura, 1982).

To reduce business risk, portfolio entrepreneurs may choose to have a 'diversified portfolio' of businesses, suggesting lower levels of business similarity. On the other hand, portfolio entrepreneurs may be more likely to benefit from ensuring some similarity between their previous background and the several businesses they own. By doing so, similar resources can be used to manage and develop their businesses. Further, there may be benefits accruing from potential synergies between the businesses owned.

Chandler and Jansen (1992) argue that a distinction needs to be made between task environment similarity (as described above) and skills similarity. The latter is associated with the level of knowledge, skills and abilities; managerial duties; technical-functional duties and tasks performed. One would expect the nature of the relationship between prior business ownership experience and task environment similarity to hold for skills similarity. Therefore, based on the above discussion, the following hypotheses are derived:

*H<sub>8a</sub> Habitual entrepreneurs will report higher levels of task environment similarity between their current business venture and their previous main business activity than novice entrepreneurs.*

*H<sub>8b</sub> Portfolio entrepreneurs will report higher levels of task environment similarity between their current business venture and their previous main business activity than serial entrepreneurs.*

*H<sub>8c</sub> Habitual entrepreneurs will report higher levels of skills similarity between their current business venture and their previous main business activity than novice entrepreneurs.*

*H<sub>8d</sub> Portfolio entrepreneurs will report higher levels of skills similarity between their current business venture and their previous main business activity than serial entrepreneurs.*

#### 4.2.3.2 Motivations

Motivations also represent an important aspect of cognition. Attitudes differ from motivation in that attitudes refer to what the individual finds important / unimportant, whilst motivation relates to what the individual likes / dislikes. Together, attitudes and motivations tend to form a set of preferences that guide our choices (Delmar, 2000). Two types of motivation can be observed: Intrinsic and extrinsic motivation. Intrinsic motivation is closely related to interest and enjoyment. Intrinsically motivated behaviours are ones for which there is no apparent reward except for the activity itself. In contrast, extrinsic motivation is based on external motivators (e.g., acting to reap some reward, not necessarily because the task is attractive) (Deci, 1992b; Amabile et al., 1994). Extrinsically motivated behaviours involve behaviours where an external controlling variable (e.g., approval, money) can be readily identified by the person acting. Individuals driven by extrinsic motivation tend to do less well than those driven by intrinsic motivation (Delmar, 2000). Furthermore, intrinsic motivation is seen as both an antecedent and a consequence of high self-efficacy (i.e., high perception of personal capabilities) (Bandura, 1991, 1995).

A variety of intrinsic and extrinsic motivations for entrepreneurship have been identified in the literature (Scheinberg and MacMillan, 1988; Birley and Westhead, 1994). Common intrinsic motivations include personal development and independence / autonomy (Gimeno et al., 1997). In contrast motivations based on

financial considerations, a need for approval and the welfare of others represent extrinsic motivations. While there is some consensus within the literature relating to the key motivations for entrepreneurship, there is conflicting evidence pertaining to the motives of novice and habitual entrepreneurs. Hence, despite there being previous work on this theme, there is still a need to resolve the debate. While Donckels et al. (1987), Gray (1993) and Hall (1995) found autonomy to be a key motivation for novice entrepreneurs and less so for habitual entrepreneurs, Wright et al., (1997b) and Westhead and Wright (1998a) found that this was a key motivation for novice as well as habitual entrepreneurs. In addition, while earlier studies found that wealth and materialistic motives become predominant in subsequent ventures owned by habitual entrepreneurs (Donckels et al., 1987; Gray, 1993; and Hall, 1995), Wright et al. (1997b) found that this extrinsic motive was less important for habitual entrepreneurs in subsequent ventures. Habitual entrepreneurs who have been through the experience of owning a business must be sufficiently motivated to want to continue their career in entrepreneurship. While extrinsic motivations such as wealth may be important for them, it is most likely that they enjoy and achieve personal satisfaction from entrepreneurship to justify their involvement in subsequent ventures. Enjoyment and personal satisfaction (and development) represent intrinsic motivations and are likely to be more stable than extrinsic motivations, which are dependent on an external driver that may change. As intimated above, intrinsic motivation is both an antecedent and consequence of self-efficacy. Habitual entrepreneurs associated with higher levels of self-efficacy (Sections 4.2.1.3 and 4.2.2.1) can re-enforce their intrinsic motivations. Thus, the following hypothesis can be derived:

*H<sub>9a</sub>: Habitual entrepreneurs will place greater importance on intrinsic motivations for entrepreneurship than novice entrepreneurs*

It is not obvious a priori, why and if there would be a difference between serial and portfolio entrepreneurs with respect to intrinsic and extrinsic motivations. Some of the earlier discussion on the distinction between serial and portfolio entrepreneurs in Section 3.5 may, however, offers some insight. Based on their career anchor, serial entrepreneurs are more likely to be associated with the autonomy / independence motive, and are more likely to be driven by the desire to have freedom from the

control of others. Moreover, they are likely to be involved in ventures one at a time so as to ensure the autonomy resides with them. Autonomy and the desire for independence have been cited as a form of intrinsic motivation (Gimeno et al., 1997). In contrast, it was argued that portfolio entrepreneurs are characterised as having an entrepreneurship anchor. This anchor induces portfolio entrepreneurs to be motivated by the opportunity recognition process and wealth creation. Supporting this view, Westhead and Wright (1998b) found that portfolio entrepreneurs were more likely than novice or serial entrepreneurs to emphasise wealth related motives for establishing a business. This discussion suggests that portfolio entrepreneurs are more likely to be driven by extrinsic motives. In contrast, serial entrepreneurs are more likely to be driven by intrinsic motives. However, this difference between serial and portfolio entrepreneurs may not be so clear. The entrepreneurship anchor may also be interpreted in another way, whereby the entrepreneur is motivated by the entrepreneurial process itself (i.e., intrinsic motivation). If the entrepreneurial process is seen as involving opportunity identification, it may simply be the case that portfolio entrepreneurs select opportunities on the basis of their wealth creating potential, even though wealth may not be the dominant driver. Nonetheless, the following speculative hypothesis is presented:

*H<sub>9b</sub>: Serial entrepreneurs will place greater importance on intrinsic motivations for entrepreneurship than portfolio entrepreneurs, who will place greater emphasis on extrinsic motivations.*

#### **4.3 ENTREPRENEURIAL BEHAVIOUR**

While novice, serial and portfolio entrepreneurs may be distinguished on the basis of their human capital characteristics, how they utilise their human capital is also important. In this section, three key dimensions of the entrepreneurial process are explored: Information search, opportunity identification, and opportunity pursuit / exploitation.

#### 4.3.1 Information Search

Debate surrounds how entrepreneurs identify business opportunities. From an inductive viewpoint, business opportunities are available in the environment and are waiting to be discovered (e.g., Kirzner). Conversely, from a deductive viewpoint, imaginative entrepreneurs can leverage their experience, subjective understanding and current information to identify business opportunities (Witt, 1998). The former view parallels Kirzner's (1973) modern Austrian tradition, whereby the possession of idiosyncratic information allows people to see particular opportunities that others cannot see, even if they are not actively searching for opportunities. Irrespective of which viewpoint is taken, information in some format is necessary, but not sufficient, for the identification of a business opportunity.

Why some people identify opportunities and others do not, is related to the information (and knowledge) they possess (Venkataraman, 1997). Information plays a key role in the identification and exploitation of opportunities (Casson, 1982; Gilad et al., 1989; Shane, 2000). If information facilitates the identification of an opportunity, individuals may choose to increase their access to opportunities by searching for information. The level and nature of experience (and knowledge) acquired over time may influence the search for information. Individuals with no prior business ownership experience have fewer benchmarks to assess whether the information they have collected is appropriate to identify and exploit a business opportunity.

Cooper et al., (1995) suggested that novice entrepreneurs would search for less information, due to their limited understanding of what is needed. Conversely, habitual entrepreneurs would attend to more signals and have better appreciation of the value of information being sought than novice entrepreneurs. Consequently, habitual entrepreneurs would generally seek more information than novice entrepreneurs. Contrary to expectation, Cooper et al., (1995) detected that novice entrepreneurs, on average, sought more information than habitual entrepreneurs. McGrath and MacMillan (2000: 3) argue that habitual entrepreneurs avoid "analyzing ideas to death" and, therefore, avoid deliberate, time-consuming and analytically correct models. Fiet et al., (2000) suggest that habitual entrepreneurs



may be less likely to engage in extensive search strategies. They may be more likely to concentrate on searching within a more specific domain of venture ideas based on routines that worked well in the past. By focusing on a smaller number of more diagnostic items of information, experienced entrepreneurs can avoid information overload, which can degrade their decision-making capabilities (Jacoby et al., 2001).

Evidence elsewhere suggests that when an ill-structured problem is encountered, individuals with high levels of knowledge will attempt to add structure by making inferences and drawing on existing knowledge (Simon, 1973). In addition, highly knowledgeable and experienced individuals in a particular domain (i.e., 'experts') have been found to be more selective in the information they acquire, are better able to acquire information in a less structured environment, and exhibit more flexible information search behaviour (Spence and Brucks, 1997)<sup>1</sup>.

Over time, habitual entrepreneurs may acquire contacts that provide them with a flow of information relating to business opportunities (Kaish and Gilad, 1991; Rosa, 1998), implying that they may need to be less proactive in the search for opportunities and information. Having earned a reputation as a successful entrepreneur, financiers, advisers, other entrepreneurs and business contacts may present business proposals to some habitual entrepreneurs (Ucbasaran et al., 2003b).

Ronstadt (1988) asserted that the best new venture opportunities may only be revealed when the individual is involved in a venture. This is because greater information becomes available about relevant contacts, viable markets, product availability and competitive resources during this process. Similarly, McGrath (1999) has argued that habitual entrepreneurs (particularly portfolio entrepreneurs) may be more likely to pursue ventures as a means of gaining access to a wider range of 'shadow options' (i.e., business opportunities that had not been previously recognised) than novice entrepreneurs. Since, by definition, portfolio entrepreneurs are involved in a number of ventures simultaneously they may be more likely to be presented with an opportunity without having to proactively search for it. Further,

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<sup>1</sup> On the downside, confidence may limit an entrepreneur's ability to objectively assess their own strengths and weaknesses, biasing their opinions surrounding the amount of information required (Cooper, Woo and Dunkelberg, 1988). Indeed, one of the liabilities of experience is over-confidence.

serial entrepreneurs may have a longer ‘reflective’ period between their ventures, which allows them to search for opportunities and relevant information.

Based on the above discussion the following hypotheses are derived:

*H<sub>10a</sub> Habitual entrepreneurs will search for less information than novice entrepreneurs.*

*H<sub>10b</sub> Portfolio entrepreneurs will search for less information than serial entrepreneurs.*

#### **4.3.2 Opportunity Identification**

While habitual entrepreneurs may engage in less extensive information search, this does not necessarily mean that they identify fewer opportunities. Firstly, the limited information that they do acquire may be more useful in that it is specific to a particular opportunity (e.g., knowledge of people, local conditions and special circumstances) (Hayek, 1945, Fiet, 1996). While novice entrepreneurs may conduct more intensive information search, the information that they acquire may be more general (i.e., widely available) and not particularly useful. Secondly, the ability to utilise information is at least as, if not more, important than the information itself. Even if a person possesses the information necessary to identify an opportunity, he / she may fail to do so because of an inability to see new means-ends relationships (Shane and Venkataraman, 2000). One of the limitations of the ‘alertness’ approach is that so far it has largely ignored the possibility of there being variations among entrepreneurs. As intimated in section 3.5, Gaglio and Katz (2001) have argued that Kirzner’s alertness theory relates to one extreme of an alertness continuum, but does not explore the possibility of other points on the continuum. Prior business ownership experience may allow habitual entrepreneurs to be more alert to opportunities than inexperienced novice entrepreneurs. Experience-based knowledge can direct an individual’s attention, expectations, and interpretations of market stimuli, thus facilitating the generation of ideas (Gaglio, 1997). Habitual entrepreneurs may leverage their business ownership experience to ‘see’ business opportunities that are ignored, or not recognised by inexperienced novice entrepreneurs. Further, in a given period of time, portfolio entrepreneurs who are

driven to a greater extent by opportunity identification and wealth creation, and who do not mind exploiting multiple opportunities simultaneously, may identify more opportunities. In contrast, serial entrepreneurs who seek to exploit opportunities one at a time, and tend to be driven more by the desire for autonomy, may be less alert to opportunities in a given time period. The following hypotheses are, therefore, presented:

*H<sub>11a</sub> In a given time period, habitual entrepreneurs will identify a greater number of opportunities than novice entrepreneurs.*

*H<sub>11b</sub> In a given time period, portfolio entrepreneurs will identify a greater number of opportunities than serial entrepreneurs.*

#### **4.3.3 Opportunity Pursuit / Exploitation**

There is an implicit assumption in many studies on opportunity identification that identified opportunities will be automatically exploited. This is not necessarily the case. Exploitation activities are perhaps the most under-researched aspect of entrepreneurship research (Shook et al., 2003). Though sparse, the literature on opportunity exploitation focuses on the decision to exploit, and the mode of exploitation (Shane and Venkataraman, 2000; Shook et al., 2003). These themes are explored in this section with particular emphasis on their relationship to the level and nature of business ownership experience.

##### **4.3.3.1 The decision to pursue an opportunity**

In the previous section, the relationship between previous business ownership experience and the number of opportunities identified in a given time period was discussed. It would follow that here, the relationship between business ownership experience and the number of opportunities exploited should be considered. This, however, would be tautological in the context of this study because the number of opportunities exploited is the basis for our definitions of novice and habitual entrepreneurs. An alternative is to examine a stage between opportunity identification and exploitation. This stage is termed the pursuit stage in this study. In

deciding whether to exploit an opportunity, the expected value of the return from the venture must exceed the opportunity cost of alternatives, but also offers the individual with a premium for bearing uncertainty (Kirzner, 1973; Schumpeter, 1934). The pursuit stage involves time and resource commitments to evaluate the costs and benefits of exploiting the venture idea.

Even though there is no conclusive empirical evidence, casual observation suggests that not all identified opportunities are brought into fruition (Shane and Venkataraman, 2000). The extent to which an individual invests time and resources into evaluating (i.e., pursuing) an opportunity is likely to be a function (at least partly) of the individual's human capital characteristics. Opportunity exploitation for example, has been found to be affected by positive perceptions (Palich and Bagby, 1995); a high tolerance of ambiguity (Begley and Boyd, 1987); and the extent of the use of heuristics such as representativeness (Busenitz and Barney, 1997). Here, it is suggested an entrepreneur's human capital profile (particularly business ownership experience) will be associated with opportunity pursuit behaviour. The transferability of information from business ownership experience to the opportunity (Carroll and Mosakowski, 1987; Cooper et al., 1989) can increase the probability of pursuit, because experience and learning can reduce costs of exploitation (Shane and Venkataraman, 2000). Individuals with prior experience may expect to receive a higher return on their investment (i.e., time and resources invested during the pursuit stage), thereby increasing the likelihood of pursuit. If habitual entrepreneurs have a broader knowledge base and access to further resources, they may feel better prepared to exploit an opportunity once it has passed the evaluation (i.e., pursuit) stage. Consequently, if habitual entrepreneurs are more likely to have the ability and resources to exploit an opportunity, they may be more likely to pursue it. There seems little point investing time and resources into evaluating an opportunity if one feels ill prepared to eventually exploit it. Moreover, due to their business ownership experience, habitual entrepreneurs may identify better quality opportunities (or at least hold the belief that they have identified better quality opportunities), in turn increasing the likelihood of pursuing them. For a set of opportunities identified in a given time period, the following hypothesis is derived:

*H<sub>12a</sub>: Habitual entrepreneurs will pursue a greater proportion of identified opportunities in a given time period than novice entrepreneurs.*

There is limited guidance from the literature that would allow a distinction between serial and portfolio entrepreneurs with respect to opportunity pursuit. However, earlier discussion surrounding the mindsets of portfolio and serial entrepreneurs may offer some insights. It has been argued that serial entrepreneurs are motivated largely by autonomy and control. In contrast, portfolio entrepreneurs are motivated by opportunities for wealth creation. Out of a particular set of identified opportunities, only a few may offer wealth creating potential, suggesting that portfolio entrepreneurs will pursue a smaller proportion of identified opportunities. On the other hand, portfolio entrepreneurs may be more likely to realise that wealth cannot be created unless opportunities are exploited. They may, therefore, be more likely to pursue an identified opportunity relative to serial entrepreneurs. Further, portfolio entrepreneurs who already own multiple businesses may have access to a greater variety of resources (such as networks, finance, etc.) that can facilitate the pursuit and eventual exploitation of additional opportunities. The following exploratory hypothesis is presented:

*H<sub>12b</sub>: Portfolio entrepreneurs will pursue a greater proportion of identified opportunities than serial entrepreneurs.*

#### **4.3.3.2 Mode of Opportunity Exploitation**

Several modes of opportunity exploitation exist (see Section 2.3.2.2), with most attention being directed towards business start-ups, or corporate entrepreneurship. Given the earlier definition of entrepreneurship involving ownership, corporate entrepreneurship is excluded from further discussion. In chapter 3, it was argued that business inheritance is excluded from any further analysis on grounds that it does not involve opportunity identification. This leaves two key modes of opportunity exploitation: independent business start-up and the purchase of an independent business.

The purchase of a business as a means of exploiting an opportunity has often been viewed as a way to avoid the risks involved in creating a business (Shook et al., 2003). Also, it has been viewed as being less 'entrepreneurial' than a business start-up (Cooper and Dunkelberg, 1987). This view may be too simplistic and potentially misleading for several reasons. First, Cooper and Dunkelberg (1986) used rather basic measures of motivations and attitudes to determine the extent to which an entrepreneur was 'entrepreneurial', with limited attention to behaviour and outcomes. Second, transforming a business to exploit a new opportunity may involve significant risks if the business brings along with it characteristics that are difficult to change / adapt. For example, reputation and relationships with various stakeholders (such as customers and employees) may be difficult to change. Further, there is a body of empirical evidence relating to management buy-outs (which involve the purchase of established businesses), which shows that purchases can be highly entrepreneurial with respect to behaviour and outcomes such as new product introductions, R&D expenditure, goals and strategies, etc. (Wright et al, 1992, 1995; Zahra, 1993). Robbie and Wright (1996) argue that management buy-ins (i.e., where an outside management team purchases an existing business) tend to be very risky, often requiring considerable entrepreneurial initiative. Finally, a greater amount of initial capital may be needed to purchase a business relative to a business start-up, where funds may be injected into the business incrementally. Hence, the view that a purchase is less risky or entrepreneurial is questionable.

Having established that both independent business start-ups and purchases are viable modes of opportunity exploitation, attention is now turned to the relationship between the choice of mode and the level and nature of prior business ownership experience reported by entrepreneurs. Entrepreneurs should select a mode of exploitation which best suits their knowledge and skills (i.e., human capital) (Harvey and Evans, 1995). Habitual entrepreneurs with experience and access to a broader range of resources may have greater flexibility in deciding how to exploit an opportunity. Further, habitual entrepreneurs (particularly serial entrepreneurs) may be more likely to purchase a business because in many cases they have better access to financial resources (either by leveraging their reputation and track record to raise external finance or through their own funds from businesses they have sold). Given their experience in owning and managing a business, habitual entrepreneurs may be

in a better position to implement change in a purchased business relative to novice entrepreneurs. Portfolio entrepreneurs who may be concerned about ensuring co-ordination between the businesses that they own, may be able to ensure a better fit by starting up a business and moulding it to ensure that synergies across the various businesses owned can be reaped. The above discussion suggests the following hypotheses:

*H<sub>13a</sub>: Habitual entrepreneurs will be more likely to purchase a business than novice entrepreneurs.*

*H<sub>13b</sub>: Serial entrepreneurs will be more likely to purchase a business than portfolio entrepreneurs.*

#### **4.4 OUTCOMES: ENTREPRENEUR AND FIRM PERFORMANCE**

Cooper (1993) asserted that we need to learn more about how the type of entrepreneur influences the relationship between predictors and performance. Previous business ownership experience is generally viewed as a positive contributor to an entrepreneur's human capital. It is reasonable to assume, therefore, that habitual entrepreneurs will own superior performing ventures. Enhanced firm performance may be measured in terms of faster sales and employment growth, greater profitability and greater profitability in relation to competitors (Birley and Westhead, 1993b; Chandler and Hanks, 1993; Westhead and Wright, 1998a, b). All these indicators, however, relate largely to the performance of the business. Weighted satisfaction measures may be a more accurate representation of venture performance (Naman and Slevin, 1993; Cooper and Artz, 1995). This measure controls for industry differences between the ventures owned by entrepreneurs. In addition, a weighted satisfaction measure controls for variations in the goals and objectives of entrepreneurs. The reader may recall earlier discussion of the relative merits of different performance measures in Section 2.6.3.

The benefits of prior business ownership experience were examined in Section 3.5. Despite the widely held view that experience is a key asset and will lead to superior performance, the empirical evidence has not strongly supported this view.

Hart et al. (1997) found that both the depth and breadth of prior founding experience was an important contributor to success in garnering and maintaining access to resources. However, evidence relating to the superior performance of businesses owned is less conclusive. Numerous studies have failed to detect a difference between novice and habitual entrepreneurs with regard to the performance of the surveyed / latest business owned (Chandler and Jansen, 1992; Birley and Westhead, 1993b; Kolvereid and Bullvag, 1993; Westhead and Wright, 1998a, b, 1999). These findings cast doubt on some of the traditional economic approaches to entrepreneurial learning (e.g., Jovanovic, 1982). As intimated in section 3.6, Jovanovic (1982) argues that experience will allow entrepreneurs to learn about their abilities and modify their subsequent behaviour accordingly. However, this approach implicitly assumes that individuals are equally able to learn. Further, the approach ignores the possibility that experienced individuals in particular may be prone to a number of biases with respect to learning. Indeed, Starr and Bygrave (1991) argue that prior business ownership experience is associated with assets as well as liabilities. Table 4.1 below provides a list of these assets and liabilities.

**Table 4.1      The Assets and Liabilities of Business Ownership Experience**

ASSETS	LIABILITIES
Expertise and wisdom Network of relationships / access to resources Reputation / legitimacy REDUCES liabilities of newness and smallness	Biases and Blinders (e.g., over-confidence) Strong Ties Success Syndrome INCREASES liabilities of “staleness”, “sameness”, “priciness” and “costliness”

Adapted from Starr and Bygrave (1991).

Business ownership experience can be associated with several liabilities. It can reduce motivation to work as hard as in the previous venture, result in risky projects, create a fixation on previous success / failure, and reduce flexibility. Some habitual entrepreneurs may be subject to biases and blind-spots, such as over-confidence, that influence their decisions and goals in subsequent ventures. Furthermore, through experience, an entrepreneur may develop the inertia of conventional wisdom, which may be challenged by others who bring a fresher perspective. This negative impact



of experience may be considered “the liability of staleness” (Starr and Bygrave, 1991: 222). While experience may aid the development of networks, habitual entrepreneurs who favour familiar circles and customary relationships over the unknown and obscure, may be stuck in routine patterns of interpersonal interactions that hinder their ability to innovate, thereby suffering from the “liability of sameness”. An additional liability is the “success syndrome”. This may result from the entrepreneur becoming particularly vulnerable to the hazards of success. As the entrepreneur develops a track record, allowing him/her to possibly obtain finance easier, unrealistic risk-return performance expectations regarding the venture may be made, creating the “liability of priciness”. The availability of resources, or easier access to resources in subsequent ventures, may also mean that subsequent ventures built with large amounts of capital may be subject to the “liability of costliness”.

The assets and liabilities approach to evaluating business ownership experience is useful, but somewhat static (Ucbasaran et al., 2003a). Introducing issues relating to learning and cognition provides a more dynamic view. Cognitive processes are difficult to change and can therefore be a source of sustained competitive advantage or disadvantage for entrepreneurs (Busenitz and Barney, 1997; Alvarez and Busenitz, 2001). Habitual entrepreneurs who effectively reflect on and evaluate their experiences can develop expertise in various stages of the entrepreneurial process, such as opportunity recognition, or resource acquisition. However, the cognitive orientation of an entrepreneur may not always be an advantage. Individuals generally adjust their judgement by learning from feedback about past decisions (Bazerman, 1990). Due to delays or bias in this feedback, individuals may be prone to errors in their learning. Because of this problem, some entrepreneurs may exhibit basic judgmental biases that are unlikely to be corrected in the real world (Tversky and Kahneman, 1986). Hence, while cognitive processes may be a source of sustained competitive advantage in certain circumstances, they may limit the ability of some entrepreneurs to adapt in response to changing / different market, and technological conditions. Habitual entrepreneurs who rely extensively on heuristics may be particularly prone to decision-making errors and bias. Nisbett and Ross (1980) argue that an indiscriminate use of heuristics can lead people into serious judgmental errors. Heuristics may influence one’s perception of uncertainty and complexity, resulting in the danger that habitual entrepreneurs,

particularly those operating in the same sector as their previous venture, attempt to replicate actions that were previously successful (i.e., hubris). If experienced entrepreneurs are not aware of (or fail to respond to) changing external environmental conditions and indiscriminately use heuristics, there is a risk that they may make serious mistakes when operating their subsequent ventures. Louis and Sutton (1991) argue that individual effectiveness is not determined by how well an individual functions in a particular cognitive mode (i.e., heuristic-based or a more systematic mode). Rather, individuals who are able to 'switch cognitive gears' are likely to be more effective in a given domain.

The above discussion illustrates that there is considerable debate surrounding the performance-enhancing potential of business ownership experience. It is difficult, therefore, to establish a clear direction of association between experience and performance. However, consistent with the stance adopted throughout the chapter, it will be assumed that business ownership experience will make a positive contribution to both firm and entrepreneur performance. This is based on discussions leading to previous hypotheses, which have suggested that habitual entrepreneurs will have accumulated higher levels of human capital (i.e., general and specific). Further, given the relative emphasis on wealth creation placed by portfolio entrepreneurs, one can expect them to report superior performance than serial entrepreneurs. Thus:

*H<sub>14a</sub>: Habitual entrepreneurs will report superior firm and entrepreneur performance than their novice counterparts.*

*H<sub>14b</sub>: Portfolio entrepreneurs will report superior firm and entrepreneur performance than their serial counterparts.*

As intimated earlier Jovanovic (1982) suggests that experience provides a means through which an individual can assess his/her true entrepreneurial ability. If as a result of experience one realises that they are not able, the expectation is that this individual will eventually exit from an entrepreneurial career. This, however, is a simplistic view which does not explain why certain individuals who have failed in one venture may become involved in another one in the future. Further, what is

deemed a success by one entrepreneur may be deemed a failure by another entrepreneur (Gimeno et al., 1997). The evaluation of a venture as a success or a failure may influence learning by the entrepreneur as well as subsequent behaviour and performance. Attribution theories (Heider, 1958) suggest that individuals have a tendency to attribute their successes to themselves (i.e., internal attribution), and failure to external factors (i.e., external attribution). These theories suggest that individuals can display biases when learning. Success is frequently sought, while failure is avoided (McGrath, 1999). However, individuals who have failed may be able to improve their subsequent performance because they may be forced to evaluate their thinking and behaviour (Sitkin, 1992). In contrast, there may be minimal incentive to evaluate or reconsider thinking patterns and behaviours if success is the outcome (irrespective of the causes of that success). The ability of entrepreneurs to objectively reflect on and evaluate their experiences (whether they are successes or failures) may be critical in determining their future performance. The extent to which business ownership experience is associated with performance may, therefore, be influenced by the nature of previous experiences. Based on this discussion the following exploratory hypotheses are derived:

*H<sub>14c</sub>: Habitual entrepreneurs who have failed will report superior firm and entrepreneur performance than novice entrepreneurs.*

*H<sub>14d</sub>: Habitual entrepreneurs who have been successful will report superior firm and entrepreneur performance than novice entrepreneurs.*

## **4.5 CONCLUSION**

A number of hypotheses have been developed for investigation regarding human capital, behaviour and outcomes-based differences between novice and habitual entrepreneurs, as well as serial and portfolio entrepreneurs. The human capital framework developed in Chapter 2 guided the derivation of the hypotheses. In Section 4.2, the hypotheses H<sub>1</sub> to H<sub>9</sub> related to differences between the different types of entrepreneurs in terms of their general human capital (GHK), entrepreneurship-specific human capital (SHK<sub>E</sub>) and venture-specific human capital (SHK<sub>V</sub>). In Section 4.3, hypotheses relating to behavioural differences between types

of entrepreneurs were developed. Behaviours relating to information search, opportunity identification, pursuit, and exploitation were discussed. Finally, in section 4.4, hypotheses relating to outcomes (i.e., firm and entrepreneur performance) were presented. In the next chapter, the underlying research philosophy, and the data collection and methodology are discussed. Presented hypotheses are then formally tested in chapter six, seven and eight.

## **CHAPTER FIVE**

### **DATA COLLECTION AND METHODOLOGY**

#### **5.1 INTRODUCTION**

This chapter discusses the methodology utilised to test the broad research question and the presented hypotheses. Particular attention is given to the structured questionnaire used to collect the data relating to the specific hypotheses. Data quality issues as well as construct issues are considered. The chapter will proceed as follows. Firstly, section 5.2 provides an overview of the quantitative / positivist paradigm underpinning the study. This is followed by a detailed description of and justification for the research instrument (i.e., a postal questionnaire) used to gather appropriate data in Section 5.3. An exposition of the questionnaire design and the structure of the questionnaire then follows. Details relating to the operationalisation of the concepts used to test the hypotheses are also provided. Section 5.4 addresses issues concerning the ‘trustworthiness’ of the findings of this study. Population and sampling issues are discussed. Here, the generalisability of the findings and the validity and reliability of measures / constructs used are carefully considered. Section 5.5 provides an overview of the background characteristics of the sample of firms (and their owners). Finally, concluding comments are presented in section 5.6.

#### **5.2 THE RESEARCH PARADIGM**

The design of a study begins with the selection of the topic and a paradigm (Robson, 1993). The topic of the study (i.e., the broad research question) was stated in Chapter 1 and more precisely stated in Chapter 4. A paradigm provides the research with an idea of assumptions about the social world and how a study should be conducted. Most notably, a paradigm suggests legitimate problems, solutions, and criteria of “proof”. Therefore, paradigms encompass both theories and methods. A study can follow a qualitative and / or a quantitative paradigm (Philips, 1987, Creswell, 1994). The quantitative paradigm is termed the traditional, positivist, experimental, or empiricist paradigm. It is based on the empiricist tradition established by scholars such as Comte, Mill, Durkheim, Newton and Locke (Smith, 1983). In contrast the qualitative paradigm is termed the constructivist, naturalistic, interpretative, post-

positivist, or post-modern perspective. It is based on the works of writers in the late 19<sup>th</sup> century such as Dilthey, Weber, and Kant (Smith, 1983).

The selection of an appropriate paradigm is likely to be influenced by various characteristics of the researcher (e.g., training, experiences and psychological attributes) and the nature of the research question being addressed (Creswell, 1994). Given the benefits and drawbacks of each paradigm, it may be argued that a combination of the two should be used. However, for pragmatic reasons - such as extensive time needed to use both paradigms adequately, the expertise needed by the researcher, the desire to limit the scope of the study and the lengthy reporting requirements unsuitable for most research publications (including a PhD) - it is often suggested that a single paradigm is utilised (Creswell, 1994).

As intimated above, this study is conducted within a quantitative paradigm. The study's assumptions relating to ontology, epistemology, axiology, rhetoric and methodology are summarised in Table 5.1. The use of a single quantitative paradigm, however, does not preclude the researcher from addressing research questions that are exploratory, descriptive and / or explanatory (Robson, 1993). Utilising a quantitative paradigm, this study explores potential differences between different types of entrepreneurs (i.e., novice, habitual, serial and portfolio entrepreneurs) with respect to the themes discussed in previous chapters.

The main focus of the remainder of this chapter is to provide an overview of the methodology used to carry out the study. The term methodology refers to the entire approach adopted in order to conduct research (Hussey and Hussey, 1997). More specifically, a discussion of the methodology of a study should include consideration of the research instrument (or research strategy), sampling and the data collected. The following section discusses the research instrument used to gather information to explore the broad research question and to test the presented hypotheses.

**Table 5.1 Assumptions of the Quantitative and Qualitative Paradigms**

<i>Assumption</i>	<i>Question</i>	<i>Quantitative Study</i>	<i>Qualitative Study</i>
Ontological assumption	What is the nature of reality?	Reality is objective and singular, apart from the researcher.	Reality is subjective and multiple as seen by participants in a study
Epistemological assumption	What is the relationship of the researcher to the researched?	Researcher is independent from that being researched.	Researcher interacts with that being researched
Axiological assumption	What is the role of values?	Value-free and unbiased.	Value-laden and biased
Rhetorical assumption	What is the language of research?	Formal Based on set definitions Impersonal voice Use of accepted quantitative words	Informal Evolving decisions Personal voice Accepted qualitative words
Methodological assumption	What is the process of research?	Deductive process Cause and effect Static design – categories isolated before study Context-free Generalisations leading to prediction, explanation, and understanding Accurate and reliable through validity and reliability	Inductive process Mutual simultaneous shaping of factors Emerging design – categories identified during research process Context-bound Patterns, theories developed for understanding Accurate and reliable through Verification

*Source:* Creswell (1994:5)

## **5.3 THE RESEARCH INSTRUMENT**

### **5.3.1 The Postal Questionnaire**

Quantitative methods typically consist of two types of research instrument: experiments and surveys. In this study, a survey was used to gather appropriate information. The term survey is used in a variety of ways, but commonly refers to the collection of standardised information from a specific population, or a sample from a population, usually but not necessarily by means of questionnaire or interview (Robson, 1993). In this study, a probability sampling approach was utilised relative to the population. Here, a sample needs to be representative of the population and respondents are randomly drawn to avoid sample bias. The interest is not normally on individuals per se, but on profiles and generalised statistics drawn from the total sample. Results are then generalised to the population of individuals. Surveys are often cross-sectional studies. The value of this kind of 'snap-shot' approach depends crucially on choosing a representative, non-biased sample of respondents. Large samples of respondents are preferred. Central limit theorem suggests that a large random sample of respondents should equate to the population of individuals (Robson, 1993).

Survey questionnaires provide a large amount of information about specific issues in a most efficient manner (Churchill, 1992). They are valuable as a research tool for their flexibility and versatility (Mouly, 1978). Once the researcher has decided that a survey based research instrument is appropriate, a choice has to be made as to whether the questionnaire is to be personal, telephone, or mail based (Kinnear and Taylor, 1996). The decision about the method by which a questionnaire will be administered must take into account the content matter of the survey, the nature of the survey population, the importance of sample quality and size, and the amount of time and money available (De Vaus, 1996). There is no correct method, only methods that are more or less appropriate to particular situations. This study employed a large-scale postal survey of owners of independent firms located throughout Great Britain. As speed and cost were important considerations, face-to-face questionnaires were eliminated as an option. Postal surveys have proved popular as a data collection technique because of the advantages they offer the researcher



relative to telephone and face-to-face surveys. These advantages include wider distribution, less distribution bias, better likelihood of thoughtful reply, ability to deal with lengthy and complex questions, no interviewer bias, the ability to help protect confidentiality and anonymity, central control, time savings and cost savings (Erdos, 1974, de Vaus, 1996; Kinnear and Taylor, 1996). However, it should be noted that the postal questionnaire has the following limitations: generally lower response rates and issues concerning reliability and validity (Dillman, 1978).

Several actions were taken to reduce the effects of such limitations. The following steps were taken to maximise the response rate from the postal questionnaire as recommended by de Vaus (1996). With regards to the cover letter, it contained an official letter head; the date on which the questionnaire was mailed; full name and address of respondent; an explanation of the study's purpose and usefulness; an assurance of confidentiality; an indication of what was to be done with the results; and an offer to answer any questions that might arise. A copy of the cover letter is included in Appendix I. The questionnaire and the covering letter specifically requested that the respondent was the key decision-maker in the business who could be the principal owner or founder of the business. The envelopes were personalised and a stamped, self-addressed envelope was provided for the return of the completed questionnaire. Further, to achieve response rates similar to those obtained from telephone or personal questionnaires (de Vaus, 1996), two rounds of reminder letters and a copy of the questionnaire were sent to those who had not responded to the first round of questionnaires.

### **5.3.2 Questionnaire Design**

As highlighted earlier, the primary focus of the survey questionnaire is to provide a data set of sufficient quality and representativeness to enable the testing of the hypotheses. A database containing the names and addresses of novice, serial and portfolio entrepreneurs does not exist. The questionnaire was used to identify types of entrepreneurs. Since no secondary data on entrepreneurs (as opposed to businesses) is publicly available, it was deemed necessary to create a primary data set to investigate the research questions (further details of the sample and the dataset are discussed in Section 5.4). The absence of secondary public data is an important

consideration, since surveys are inappropriate if data are available from a more accurate source (Youngman, 1982). To ensure an acceptable quality and avoid ambiguity, the questionnaire was couched in language that the respondent would understand and would not lead him/her to a particular answer (Davidson, 1970). Below, a brief discussion of the type and content of questions used in the questionnaire is provided.

#### *Question Type: Open or closed format*

The questionnaire was based largely on forced-choice questions (though there were a small number of open-ended questions, which will be discussed later). A closed or forced-choice question is one in which a number of alternative answers are provided from which respondents are to select one or more specified options. Methods of limiting the answers of the respondent include yes / no alternatives or Likert scales. While such questions can be associated with problems (e.g., may create false opinions if the questionnaire provides insufficient range) they may offer a number of advantages. Where the questionnaire is long, or people's motivation to answer is not high, forced-choice questions are useful because they are quick to answer (de Vaus, 1996). Further, forced-choice questions are easier to code because they are not prone to problems associated with interpreting answers to open-ended questions. A pilot study was carried out to ensure that a variety of options were considered. To avoid bias resulting from forced-choice, however, where appropriate, the category called 'other (please specify)' was included to allow for unanticipated responses.

#### *Content type of questions*

Three types of question content can be identified (Dillman, 1978; Creswell, 1994; de Vaus, 1996). First, fact and attribute questions are designed to obtain information about the respondents' characteristics, such as age, education, gender and ethnicity. Secondly, behaviour questions are formulated to establish what people do, such as number of hours worked a week in the surveyed business. The final type of question are those that are designed to probe beliefs and attitudes. The questionnaire used in this study consisted of questions relating to attributes, behaviours and attitudes.

### 5.3.3 Structure of the Questionnaire

The questionnaire used for this study comprised following nine sections: (A) the personal background of the principal owner / founder; (B) the general background of the surveyed business; (C) outcomes relating to both the business and the entrepreneur; (D) reasons leading to the ownership of their current business; (E) business ownership history; (F) information search and opportunity recognition; (G) business Strategy. See Appendix I for a copy of the survey instrument.

#### (A) The personal background of the principal owner / founder

In this section of the questionnaire, the respondents were asked to provide details about their basic demographic characteristics such as age, gender, ethnicity and parental background. The section also contained questions relating to various other aspects of their human capital such as education and managerial human capital (i.e., employment experience and level of attainment in their last job).

#### (B) General Business Background

Questions in this section allowed the researcher to gather information about the basic characteristics of the surveyed business. For example, the nature of business ownership was ascertained by identifying whether the ownership stake in the business had been obtained through establishing a business, purchasing a business, or inheriting a business. Further questions were presented to determine whether the venture was initiated as a team (equity partners at the point when ownership stake was gained), and whether it was still owned by a team or not. Additional background questions in this section related to industrial sector, the legal status of the business, whether the business was a subsidiary, whether the business was a family firm, the age of the business, and the number of competitors the business faced at the time of the survey.

#### (C) Outcomes

Data was gathered from sole traders as well as partnerships who, do not have to formally report financial data. Collecting firm level performance data from independent firms is a difficult task. Businesses with private company status are under no legal obligation to disclose financial data in the US. Though disclosure of

financial information is required by UK businesses, access to this data is restricted to the public. Furthermore, more often than not, when asked, respondents will refuse to provide financial data on grounds that this information is deemed commercially sensitive. Given these difficulties, alternative means of ascertaining the financial health of the business need to be used. Guided by previous research, this researcher attempted to tackle the problem by asking respondents to report their performance relative to competitors and indicate whether the business had made a profit, loss or broke even (Birley and Westhead, 1990b). Respondents were also asked to provide data on the number of employees (when they received their first order, in 1996 and in 2000), the percentage of gross sales exported and the value of their gross sales in 1996 and 1999. These figures were subsequently used to provide relatively objective indicators of firm size and growth. Section C also included questions relating to levels of satisfaction with the business on several dimensions (details provided in section 5.3.4) (Naman and Slevin, 1993); standard of living at the time of the survey compared with when the business was first established, purchased or inherited; and the amount of money taken out of the business during the past year (Gimeno et al., 1997).

#### (D) Reasons Leading to Start-up / Purchase

Twenty-four items taken from the study conducted by Birley and Westhead (1994) relating to motives for business ownership were presented. Respondents were asked to indicate the extent to which the list of reasons provided were important when they established / purchased or inherited the surveyed business. Finally, the respondents were asked to indicate which of the reasons provided was the main motivator in their current business ownership decision.

#### (E) Business Ownership History

Information collected in this section enabled respondents to be classified as novice, habitual, serial and portfolio entrepreneurs. Respondents were asked to indicate the number of businesses they had ever owned and currently own. Respondents also provided details on the number of businesses exited either through means of business closure, sale or other forms. The businesses identified were further classified on the basis of whether the respondent had a minority, or a majority equity stake in them. The intention here was to capture a large number of entrepreneurs who own

businesses as a team. Finally, for those respondents who had 'exited' at least one business through closure or sale, there was a question asking them to indicate the reason for the closure or sale. The reasons included were; the performance of the business being too low in relation to the respondents expectations; bankruptcy / liquidation / receivership; an opportunity to realise a capital gain; a better opportunity presenting itself; and other reasons as indicated by the respondent.

#### (F) Information Search and Opportunity Identification

This section asked the respondents to indicate the extent to which they agreed with a set of attitudinal statements relating to opportunity identification. These items were derived from studies conducted by Hills (1995), Hills et al., (1997) and Chandler and Hanks (1998). Respondents were also asked to indicate the number of opportunities for creating or purchasing a business identified and then pursued within the last five years. With regard to the pursued opportunities, respondents were asked to indicate the number of these opportunities that they perceived to be successes, and the number which were unrelated to each other. Participants were also requested to respond to a series of statements aimed at capturing the similarity of the surveyed business with that of their previous business, or main job. These statements related to business similarity in terms of customers, suppliers, technology, task-performed, etc. The items were derived from the studies conducted by Chandler and Jansen (1992), Cooper et al. (1995) and Gimeno et al., (1997). The responses from these questions were subsequently used to operationalise two dimensions of venture-specific human capital (i.e., task environment similarity and skills / abilities similarity). Finally, respondents were asked to indicate from a set of listed information sources, which ones they had used, and the extent to which they found them useful. The list comprised information sources cited in the studies conducted by Kaish and Gilad (1991) and Cooper et al., (1995).

#### (G) Business Strategy

In this section, respondents were asked to indicate the extent to which they agreed with a series of statements derived from Chandler and Hanks (1994) relating to strategies used in the surveyed business. These resulting scales were used to capture the extent to which the respondents' were adopting innovation, differentiation, cost and growth based strategies.

The questionnaire comprised seven sections and was ten pages long. The sections comprised a mixture of borrowed scales, borrowed and amended scales and questions designed by the researcher in order to elicit the data required to test the hypotheses. The following section provides an overview of the measures developed based on the information gathered by the questionnaire.

#### **5.3.4 Measures**

For clarity, the tables below provide details of the measures derived from the questionnaire. The tables are organised to reflect the three core themes highlighted in previous chapters: human capital (general and specific); information search, opportunity identification, pursuit and exploitation; and firm and entrepreneur performance. Tables 5.2 and 5.3 provide a description of measures relating to general human capital and specific human capital, respectively. In Table 5.4 measures relating to information search, opportunity identification, pursuit, and exploitation are described. Finally, Table 5.5 details the measures relating to the financial and non-financial performance of the surveyed business and entrepreneur performance. The tables illustrate the name of the measures used in the analysis discussed later, their description, the level of measurement (i.e., interval, ordinal or nominal), the source of the measure (if borrowed or borrowed and amended), and finally the coding. Issues relating to the validity and reliability of scale-based measures will be discussed in section 5.4.

Table 5.2 Measures Relating to General Human Capital

Theme	Name of variable	Description	Level of Measure-ment	Source (where applicable)	Coding	
					Value	Meaning
General Human Capital (GHK)	Education	Highest level of education obtained	Ordinal		0 1 2	Pre-university qualification Undergraduate degree Postgraduate qualification
	Gender	Gender of respondent	Nominal		1 0	Male Female
	Age	Age of respondent in years	Interval	Gimeno et al., (1997)	Deviation from the mean age of respondents in years <sup>a</sup>	
	Managerial human capital	Managerial level of attainment (where 1 represented 'supervised no-one', 2 represented 'supervised others' and 3 represented 'manager or self-employed') was multiplied by the number of previous jobs held (ranging between 1 and 7, where 1 represented 'no previous jobs' and 7 represented '6 or more previous jobs')	Nominal	Based on Gimeno et al., (1997)	Managerial human capital (minimum 1, maximum 21)	
GHK	Managerial capability	Perceived level of managerial capability	Interval	Chandler & Hanks (1998)	Based on PCA component scores	
	Technical capability	Perceived level of technical capability	Interval	Chandler & Hanks (1998)	Based on PCA component scores	

Note. <sup>a</sup> Deviation from the mean for this variable was used to minimise problems of multicollinearity when age<sup>2</sup> was included in multivariate analysis (Aiken and West, 1991).

Table 5.3 Measures Relating to Specific Human Capital

Theme	Name of variable	Description	Level of Measurement	Source (where applicable)	Coding	
					Value	Meaning
Human capital specific to entrepreneurship (SHK <sub>E</sub> )	Parent business owner	Principal occupation of parent (i.e., main income earner) was business owner	Nominal		1 0	Parent was business owner Otherwise
	Entrepreneurial Capability	Perceived level of entrepreneurial capability (i.e., opportunity identification)	Interval	Chandler & Hanks (1998)	Based on PCA component scores	
	Attitudes toward opportunity identification -development - alertness <sup>a</sup>	<ul style="list-style-type: none"><li>- views opportunities as being developed over time</li><li>- opportunities are identified through being alert</li></ul>	Interval	Hills et al., (1997)	Based on PCA component scores	

Note. <sup>a</sup> This item was ignored in further analysis due to low reliability (further details provided in Section 5.4.4).



Table 5.3 contd.

Measures Relating to Specific Human Capital

HABITUAL	Whether the respondent is a habitual entrepreneur	Nominal	1 0	Habitual entrepreneur Novice entrepreneur
TOTAL	Total number of minority and majority businesses owned	Interval		
PORTFOLIO	Whether the respondent is a portfolio entrepreneur	Nominal	1 0	Portfolio entrepreneur Serial entrepreneur
	Whether the respondent is a habitual entrepreneur who reported that the proportion of business which had failed (i.e., had closed/sold a business because the performance was too low in relation to the entrepreneur's expectations or had faced bankruptcy, liquidation or receivership) was greater than those which had been sold / closed because there was an opportunity to realise a capital gain or a better opportunity presented itself	Nominal	1 0	Habitual entrepreneur who has failed Novice entrepreneur
HABITUAL <sub>successful</sub>	Whether the respondent was a habitual entrepreneur who reported that the proportion of businesses which had failed (i.e., had closed/sold a business because the performance was too low in relation to the entrepreneur's expectations or had faced bankruptcy, liquidation or receivership) was less than those which had been sold / closed because there was an opportunity to realise a capital gain or a better opportunity presented itself	Nominal	1 0	Habitual entrepreneur who is successful Novice entrepreneur
HABITUAL <sub>Mixed (no exit)</sub>	Whether the respondent was a habitual entrepreneur who had not closed or sold any businesses (i.e., a 'pure' portfolio entrepreneur).	Nominal	1 0	Habitual entrepreneur with no exit Novice entrepreneur
HABITUAL <sub>Mixed (with exit)</sub>	Whether the respondent was a habitual entrepreneur who had closed or sold the same number of businesses due to failure and success.	Nominal	1 0	Habitual entrepreneur with equal failures and successes Novice entrepreneur

**Table 5.3 contd. Measures Relating to Specific Human Capital**

Human capital specific to Venture (SHK <sub>v</sub> )	Motivation: <ul style="list-style-type: none"><li>- Independence (intrinsic)</li><li>- Personal development (intrinsic)</li><li>- Approval (extrinsic)</li><li>- Welfare (extrinsic)</li><li>- Reactive (extrinsic)</li><li>- Financial (extrinsic)</li></ul>	<ul style="list-style-type: none"><li>- Need for independence</li><li>- Concerned with personal development</li><li>- Need for approval</li><li>- Concerned about welfare of others</li><li>- Concerned with responding to an opportunity</li><li>- Concerned with financial issues</li></ul>	Interval	Birley & Westhead (1994)	Based on PCA component scores
	Business similarity	Knowledge of business (i.e., product/service, customers, suppliers, technology and competitors)	Interval	Chandler & Jansen (1992); Chandler (1996)	Based on PCA component scores
	Task similarity	Knowledge of task (i.e., knowledge, skills and abilities needed; managerial duties; technical-functional duties and; tasks performed)	Interval	Chandler & Jansen (1992); Chandler (1996)	Based on PCA component scores

Table 5.4 Measures Relating to Opportunity Identification

Name of variable	Description	Level of Measurement	Source (where applicable)	Coding	
				Value	Meaning
Information Search Intensity	The usefulness (based on a 6-point scale, where 0 corresponded to 'did not use', 1 corresponded to 'not at all useful' and 5 corresponded to 'very useful') of 8 sources of information which were used by at least 60% of respondents (i.e., suppliers, employees, customers, friends, family, magazines / newspapers, trade publications and other business owners) were summated	Ordinal	Cooper et al., (1995)	Summated scale	
Opportunities Identified	Number of opportunities for creating or purchasing a business identified ('spotted') within the last five years	Ordinal	Hills et al., (1997)	1	0 opportunities
				2	1 opportunity
				3	2 opportunities
				4	3 opportunities
				5	4 opportunities
				6	5 opportunities
				7	6-10 opportunities
				8	8 or more opportunities
Opportunities Pursued	Number of opportunities for creating or purchasing a business pursued (i.e., committed time and financial resources to) within the last five years	Ordinal	Hills et al., (1997)	As above	
Opportunities Success	Number of pursued opportunities perceived as a success (in terms of meeting original expectations)	Ordinal	Hills et al., (1997)	As above	
Opportunities identified / opportunities pursued	Proportion of identified opportunities pursued	Ordinal		0	No identified opportunities were pursued
				1	Less than 50% of identified opportunities were pursued
				2	50% or more opportunities were pursued
				3	All identified opportunities were pursued

**Table 5.5 Measures Relating to Firm and Entrepreneur Performance**

Name of variable	Description	Level of Measurement	Source (where applicable)	Coding	
				Value	Meaning
Weighted Performance I	Based upon the importance attached to 6 performance indicators (i.e., sales, sales growth, cash flow, return on equity, gross profit margin, net profit from operations, each rated on a scale of 1 'very little importance' to 5 'extremely important' and the level of satisfaction with each of these indicators (on a scale of 1 'highly dissatisfied' to 5 'highly satisfied'). Importance and satisfaction scores were multiplied (Cronbach's alpha score of 0.82) and divided by 6.	Ordinal	Naman and Slevin (1993)		Ranges from 1-25
Weighted Performance II	Based upon the importance attached to 12 selected performance indicators (i.e., sales, sales growth, cash flow, return on equity, gross profit margin, net profit from operations, business survival, reputation and status of business, employee security, independent ownership / enhance lifestyle, each rated on a scale of 1 'very little importance' to 5 'extremely important') and the level of satisfaction with each of these indicators (on a scale of 1 'highly dissatisfied' to 5 'highly satisfied'). Importance and satisfaction scores were multiplied (Cronbach's alpha score of 0.83) and divided by 12.	Ordinal	Extended version of Naman and Slevin (1993)		Ranges from 1-25
Absolute total employment change	Difference between total employment in 2001 and 1996, where total employment included full-time, part-time and casual employees, weighted as 1, 0.5 and 0.25, respectively (logged).	Interval			A constant value was added to avoid negative values so that a logarithm could be taken
Percentage change in total employment	Percentage change in total employment between 1996 and 2001, where total employment included full-time, part-time and casual employees, weighted as 1, 0.5 and 0.25, respectively.	Interval			

Table 5.5 Measures Relating to Firm and Entrepreneur Performance Continued...

Absolute change in sales	Difference between the sales level reported for 1996 and 1999 (logged)	Interval		A constant value was added to avoid negative values so that a logarithm could be taken
Percentage change in sales	Percentage change in sales between 1996 and 1999	Interval		
Profit relative to competitors	Current profit performance (i.e., operating profit) of surveyed business relative to competitors	Ordinal	See Birley and Westhead (1990), SMJ	1 represents 'very poor', 5 represents 'very good'.
Money taken out	Money taken out of the business(es) owned in previous 12 months	Ordinal	Gimeno et al., (1997)	1 Less than £5,000
				2 £5,001-10,000
				3 £10,001-15,000
				4 £15,001-25,000
				5 £25,001-35,000
				6 £35,001-50,000
				7 £50,001-75,000
				8 £75,001-100,000
				9 More than £100,000
Money taken out I	Money taken out measure described above converted into an interval level measure by taking mid-points	Interval		
Money taken out II	Money taken out I standardised by the number of businesses currently owned (minority & / or majority)	Interval		

## **5.4 'TRUSTWORTHINESS':**

### **GENERALISABILITY, VALIDITY AND RELIABILITY**

Three fundamental issues must be considered if research findings are to be viewed as being trustworthy. Results have to be generalisable to the setting and sample population (Salkind, 2000). To ensure generalisability of the findings, researchers must seek to gather a representative random sample of respondents drawn from the specified population of respondents. Data analysis relies on measurements and findings being both reliable and valid. Reliability and validity are a researcher's first line of defence against spurious and incorrect conclusions (Salkind, 2000). A reliable measure is one for which we can depend on obtaining consistent responses. Assessment tools must be reliable otherwise research hypotheses may be rejected even though they may actually be correct. However, even if we establish that a measure is reliable, we then face the problem of knowing whether our measures actually measure what we say they do. This problem relates to validity. A necessary but insufficient condition for validity is to ensure that reliable measures have been used in the study (Robson, 1993). Trochim (2002) offers a useful way of thinking about the relationship between validity and reliability. A valid measure is 'on target'. A reliable measure consistently hits the same place on the target. A reliable and valid measure will consistently hit the bull's eye.

In the following section, issues relating to the gathering of a representative (i.e., generalisable) dataset are discussed. This is followed by discussions of attitudinal scales and constructs. The validity and reliability issues relating to each scale operationalised in this study are reported.

#### **5.4.1 Generalisability: Population Sampling, Representativeness and Response-Bias Tests**

Sampling is closely linked to external validity (see below – section 5.4.2.2) or generalisability. There are two broad types of samples: probability samples (also known as representative sampling) and non-probability samples. A probability sample is one in which each person in the population has an equal, or at least a known chance (probability) of being selected. In a non-probability sample, some

people have a greater, but unknown, chance than others of being selected. In probability samples, you can generalise from the sample to the population; such generalisations are themselves probabilistic.

A variety of probability sampling methods exist (e.g., simple random sampling, systematic sampling, cluster sampling, stratified random sampling, etc.). This study employed a stratified random sampling method. Stratified sampling is designed to gather representative and more accurate samples (de Vaus, 1996). This form of sampling involves dividing the population into a number of groups or strata, where members of a group share a particular characteristic or characteristics. There is then a random sampling within the strata. It is usual to have proportionate sampling, that is, where the numbers of the groups selected for the sampling frame reflects the relative numbers in the population as a whole (e.g., if 80% of the population are from one ethnic group, the sampling frame should reflect this). Examples of surveys which are truly representative, in the technical sense, are, however, quite rare in social sciences (Bryman, 1989; Robson, 1993).

Because there is no comprehensive list of novice, habitual, serial and portfolio entrepreneurs in Great Britain, a pragmatic approach was taken in the construction of the sampling frame. The sampling frame was stratified on the basis of region and industry. Sampling quotas by four industrial categories (agriculture, forestry and fishing, production, construction and services) was obtained from summary tables detailing the population of legal units (or businesses) registered for Value-Added-Tax in 1999 (Office for National Statistics, 1999). Public Limited Companies, branch plants of larger organisations, co-operatives and organisations not seeking profits were excluded from the sampling frame. This study, therefore, does not focus upon social entrepreneurship (Smallbone et al., 2001). In addition to industry classification, the sampling frame was also stratified according to region. Here, the Government Office Regional classification of the standard regions in Great Britain was utilised. Table 5.6 below provides a breakdown of Great Britain VAT registered enterprises in 1999 by Government Official Region and Industry. Table 5.7 provides the same breakdown for the sampling frame used for the purpose of this study.

Table 5.6 Breakdown of the Population of Great Britain VAT-based Enterprises in 1999 by Government Office Region and Industry

	Agriculture		Production		Construction		Services		TOTAL	
	Number	(Percentage)	Number	(Percentage)	Number	(Percentage)	Number	(Percentage)	Number	(Percentage)
Scotland	19200	(17)	8890	(8)	12045	(10)	75950	(65)	116085	(8)
South West	22105	(15)	12950	(9)	17120	(11)	95590	(65)	147765	(10)
South East	11010	(4)	22060	(9)	29230	(12)	183220	(75)	245520	(16)
North West	11050	(7)	16140	(10)	15620	(10)	112595	(73)	155405	(10)
North East	3690	(9)	4045	(10)	4210	(10)	28760	(71)	40705	(3)
Yorkshire & the Humber	11015	(10)	12965	(11)	12390	(11)	78300	(68)	114670	(7)
Wales	16825	(23)	5600	(8)	8000	(11)	14815	(58)	72240	(5)
London	690	(0.3)	20130	(8)	16635	(7)	213715	(85)	251170	(16)
East Midlands	10910	(10)	14220	(13)	12155	(11)	71025	(66)	108310	(7)
West Midlands	11640	(9)	18840	(14)	14735	(11)	87785	(66)	133000	(8)
East of England	12365	(8)	16340	(10)	21040	(13)	109125	(69)	158870	(10)
TOTAL	130,500	(8)	152,180	(10)	163,180	(11)	1,097,880	(71)	1,543,740	(100)

Source: PA1003 Size Analysis of UK Businesses, 1999, Office for National Statistics



Table 5.7 Breakdown of Random Sampling Frame of Great Britain VAT-based Enterprises in 1999 by Government Office Region and Industry

	Agriculture		Production		Construction		Services		TOTAL	
	Number	(Percentage)	Number	(Percentage)	Number	(Percentage)	Number	(Percentage)	Number	(Percentage)
Scotland	55	(17)	26	(8)	33	(10)	210	(65)	324	(8)
South West	62	(15)	38	(9)	46	(11)	270	(65)	416	(10)
South East	27	(4)	62	(9)	82	(12)	508	(75)	679	(16)
North West	30	(7)	44	(10)	44	(10)	318	(73)	436	(10)
North East	8	(7)	12	(11)	6	(5)	88	(77)	114	(3)
Yorkshire & the Humber	32	(10)	35	(11)	35	(11)	218	(68)	320	(7)
Wales	48	(23)	17	(8)	23	(11)	123	(58)	211	(5)
London	2	(0.3)	56	(8)	47	(7)	595	(85)	700	(16)
East Midlands	30	(10)	40	(13)	33	(11)	199	(66)	302	(7)
West Midlands	33	(9)	49	(14)	40	(11)	241	(66)	363	(8)
East of England	34	(8)	44	(10)	58	(13)	305	(69)	441	(10)
TOTAL	361	(8)	423	(10)	447	(11)	3,075	(71)	4,306	(100)

Note. As a result of the cleaning process which involved the removal of businesses which were no longer trading or which were charities etc., there are very minor differences between the sampling proportions of the population and the sample. This, however, has only affected the North West region where the proportions for services, agriculture and construction have changed. These differences in proportions did not, however, affect the sampling proportion for the region itself.

To gather a large sample of respondents, it was decided to send the questionnaire to 4,324 businesses. A stratified random sample of 4,324 independent firms was drawn from a cleaned list of business names provided by Dun and Bradstreet. To control for response bias, the structured questionnaire described above was posted during September 2000 to a single key respondent (who had to be the principal owner and / or founder and was the key decision-maker) in each of the 4,324 randomly selected businesses. In retrospect, if additional resources had been available more than one respondent per business may have been preferable for certain questions. This richer data would have allowed inter-rater reliability to be assessed.

During the four month data collection period, 18 responses were returned that indicated that the previous owner had retired, the business was no longer trading or had been taken-over, the business was a not for profit organisation, the business was a subsidiary, or the business had been recently floated on the Stock Exchange. These non-valid respondents were removed from the sampling frame. A further 54 respondents were not the principal owner or a founder in the business and were, therefore, considered non-respondents. They were excluded from subsequent data analysis.

After a three-wave mailing, 768 usable valid questionnaires were obtained from a final valid sampling frame of 4,306 independent firms, yielding a 17.8% valid response rate. This response rate was considered acceptable, and compares very favourably with similar studies (Storey, 1994), which generally have much shorter and less detailed research instruments.

Oppenheim (1992) argues that the issue of primary concern is not the level or proportion of responses but the possibility of some bias being introduced to that sample as a result of non-response. To assess whether the results from the sample can be generalised to the population of independent businesses in Great Britain non-response bias were conducted. Chi-square tests were conducted to detect differences between responding and non-responding businesses. With regard to region, industry, age, legal status and employment size of the business, no statistically significant response bias was detected between the respondents and non-respondents (see Table 5.8). On these criteria, we have no cause to suspect that the valid sample of

independent businesses is not a representative sample. It can be argued that the external validity / generalisability of this study is established.

While the tests for response bias are indicative of a representative sample, it is also useful to consider the sample size. The sample size is important as it determines the degree of accuracy that can be obtained from the data analysis. De Vaus (1996) lists the sampling errors at a 95% confidence level for different sample sizes. Accordingly, for a sample of 768 respondents, we can be 95 per cent confident that the results in the population will be the same as the sample, plus or minus 3.5-4% sampling error. Beyond a certain point, the cost of increasing the sample size can outweigh the benefits in terms of the extra precision it can offer. For example, to reduce the sampling error from 3.5% to 3%, we would need to increase the sample size by over 280 respondents (de Vaus, 1996). Given a response rate of 20%, this would mean sending the questionnaire out to an additional 1400 businesses. Overall, based on the sampling procedure followed, the non-bias tests carried out and the resulting final sample size, we can be confident that the results can be generalised to the wider population of independent businesses in Great Britain. The following section examines the collected data in greater detail by focusing on the validity and reliability of the attitudinal scales / constructs identified.

**Table 5.8 Response Bias Tests by Industry, Region, Legal Status, Age and Employment** <sup>(a) (b)</sup>

Variable	Non-responding businesses		Responding businesses		Chi-square Statistic	Sig. Level
	No.	%	No.	%		
1. MAIN INDUSTRIAL ACTIVITY OF BUSINESS					2.71	0.44
Agriculture, forestry & fishing	299	8.4	62	8.1		
Production	343	9.7	80	10.4		
Construction	379	10.7	68	8.9		
Services	2518	71.2	557	72.6		
2. GOVERNMENT OFFICE REGION					15.45	0.12
Scotland	258	7.3	66	8.6		
South West	325	9.2	91	11.8		
South East	553	15.6	126	16.4		
North West	360	10.2	76	9.9		
North East	93	2.6	21	2.7		
Yorkshire & the Humber	262	7.4	58	7.6		
Wales	175	4.9	36	4.7		
London	604	17.1	96	12.5		
East Midlands	243	6.9	59	7.7		
West Midlands	301	8.5	62	8.1		
East of England	365	10.3	76	9.9		
3. LEGAL STATUS OF BUSINESS					1.69	0.43
Proprietorship	1722	49.8	394	51.4		
Private Limited Company	1034	29.9	211	27.5		
Partnership	701	20.3	161	21.0		
4. AGE OF BUSINESS					3.74	0.15
1-10 Years	1041	33.9	274	36.0		
11-50 years	1800	58.7	445	58.4		
51 or over	226	7.4	42	5.5		
5. NUMBER OF EMPLOYEES					7.19	0.13
1-5 employees	2129	64.1	479	65.5		
6-10 employees	501	15.1	109	14.9		
11-25 employees	411	12.4	92	12.6		
26-50 employees	150	4.5	37	5.1		
51 or more employees	129	3.9	14	1.9		

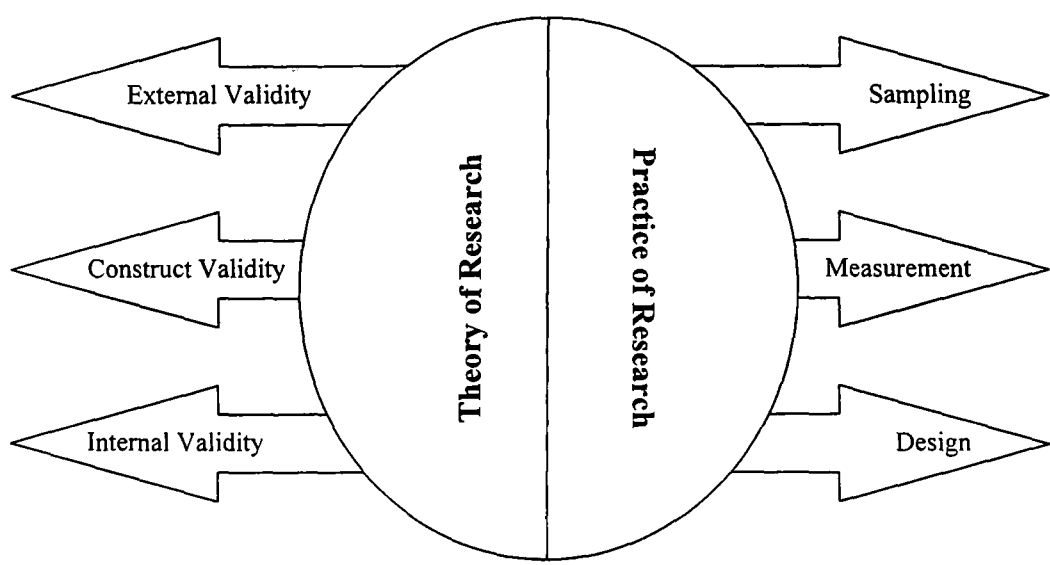
Notes. <sup>(a)</sup> Data provided by Dun and Bradstreet in 2000.

<sup>(b)</sup> Only valid respondents were used.

5.4.2 Validity

Having established the representativeness of the sample used, it is now appropriate to examine the validity of the attitudinal scales / constructs developed based on the survey data. Validity refers to the results of the ‘test’ and not the ‘test’ itself (Salkind, 2000). Further, the results of a test are not just valid or invalid. There is a continuum where progression occurs in degrees from low validity to high validity. While validity may sound like a simple concept, an understanding of it is complicated by the level of subjectivity involved in measuring it. Also, there are different types of validity. There is a lot of confusion in the methodological literature that stems from the wide variety of labels and categorisations used to describe validity. Since no particular categorisation has been established as superior to others, the categorisation of types of validity used below is based on this researcher’s preference. Figure 5.1 identifies three types of validity and relates these types to practical aspects of the research process. This section will focus on construct validity, internal validity and external validity respectively, with particular emphasis being placed on construct validity.

Figure 5.1 Types of Validity



Adapted from Trochim (2000).

#### 5.4.2.1 Construct Validity

Construct validity involves relating a measuring instrument to a general theoretical framework in order to determine whether the instrument is tied to the concepts and theoretical assumptions that are employed (Frankfort-Nachmias and Nachmias, 1992: 161). It is possible to identify three groups of validity within construct validity<sup>1</sup>:

1. Translation validity: face and content validity.
2. Criteria-related validity: predictive and concurrent validity.
3. Convergent and discriminant validity.

There is no easy, single, way of determining construct validity. At its simplest, one might look for what seems reasonable, sometimes referred to as face validity (Robson, 1993). If the sample is appropriate and the items “look right”, the measure is said to have face or content validity (Churchill, 1992). Though face and content validity are distinct, they are often used together, or interchangeably. Trochim (2000) presents face and content validity as being components of what he calls “translation validity”. Both validity types attempt to assess the degree to which the researcher has accurately translated the construct into the operationalisation.

With criteria-related validity, the researcher assesses the performance of the measure against some criterion. Predictive validity assesses the measures ability to predict something it should theoretically predict, while concurrent validity assesses the measures ability to distinguish between groups that it should theoretically be able to distinguish between.

Convergent validity examines the degree to which the measure is similar to (converges on) other measures that it should be theoretically similar to. In contrast, discriminant validity examines the degree to which the measure is dissimilar (diverges from) other measures that it should theoretically not be similar to. Convergent and discriminant validity can be evaluated by examining the results of the principal

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<sup>1</sup> While some scholars may be opposed to the first two groups (i.e., translation and criterion validity) being considered under the heading of construct validity, most if not all scholars would agree that discriminant and convergent validity are key elements of construct validity.

components analyses applied to the research instruments, with reasonable component pattern outcomes and statistics being taken as indicative of convergent and discriminant validity. Evidence relating to the convergent and discriminant validity of the specific measures used in this study is discussed in section 5.4.4.

#### 5.4.2.2 Internal and External Validity

Internal validity (also known as nomological validity) is established if a study can plausibly demonstrate that there is a cause-effect or causal relationship between measures. Internal validity needs to be considered if the objective of studies is to test causal links. If the nature of the study is descriptive or observational (i.e., measuring relationships between measures), establishing internal validity is not deemed essential. In social science research, it can be very difficult to establish internal validity when cross-sectional evidence is analysed. Furthermore, in order to identify a causal link, the researcher has to control for numerous variables. Often internal validity is only achieved under laboratory conditions where the threats to internal validity (Cook and Campbell, 1979) have been removed.

If the researcher is concerned with generalising results to a wider group or population, external validity is important. External validity is synonymous with generalisability (discussed in Section 5.4.1). Internal and external validity tend to be inversely related in that various controls imposed in order to ensure internal validity often fight against external validity (Robson, 1993). If the researcher has a representative sample from the known population, then the generalisation to that population can be done according to usual rules of statistical inference. To establish external validity, checks must be carried out on sampling and representativeness. Sampling and representativeness issues were discussed in Section 5.4.1.

#### 5.4.3 Reliability

Reliability is of central concern to social scientists because measuring instruments are rarely completely valid. In many cases, validity tests are not conducted or reported. In many instances, researchers assume their constructs / measures are valid. Many studies, however, consider the reliability of a construct / measure (Frankfort-

Nachmias and Nachmias, 1992). The measuring of reliability, in general terms is an attempt to ascertain whether a significant amount of agreement exists between independent efforts to measure the same theoretical construct (i.e., consistency). Two forms of reliability exist: external and internal reliability (Bryman and Cramer, 1999). External reliability refers to the degree of consistency of a measure over time. One way to test external reliability is to use the test-retest technique, where respondents are asked the same set of questions at two points in time. This technique, for most social science research, including this study, is impractical (de Vaus, 1996). Firstly, it is often difficult to give the same test to the same respondents twice. Secondly, people may remember their answers from the first test, and answer the same way the second time around to be consistent (Churchill, 1979). De Vaus (1996) argues that the best way to create reliable indicators is to use multiple-item indicator reliability test. In some cases, however, there is little point in asking a question in several different ways (e.g., gender, age, etc.). In which case, the best course is to use questions based on previous reputable work. As highlighted in the previous section, several of the measures used in this study were operationalised and reported in leading entrepreneurship and management journals.

Internal reliability is particularly important in connection to multiple-item scales. It raises the question of whether each scale is measuring a single idea, and hence whether the items that make up the scale are internally consistent (Bryman and Cramer, 1999). A number of procedures can be used to estimate internal reliability. The more popular of these is the Cronbach's alpha coefficient, which is based on an internal consistency method, derived from classical scaling theory (Oppenheim, 1992). It calculates the average of all possible split-half reliability coefficients. With split-half reliability the items in a scale are divided into two groups and the relationship between the respondents' scores for the two halves is computed. The value of a Cronbach's alpha varies between zero and one. A value of 0.5 or above is generally considered acceptable for exploratory research (Nunnally, 1978). Scores of 0.7 or above are regarded as being highly reliable. Evidence relating to the reliability of measures / constructs used in the current study is discussed in the following section.



#### **5.4.4 Validity and Reliability Tests Conducted**

In this section, evidence relating to face / content, concurrent and discriminant validity, and reliability is presented. Criteria-related validity, however, are implicitly established through the data analysis and testing of the hypotheses. It should also be noted that there is no single way of providing unambiguous evidence of validity. “Validity has to be argued for; it is not proven” (de Vaus, 2002: 27). The task of the researcher is to provide as much evidence one way or another for validity but to recognise that the validity of a measure may always be contested. The following discussion commences with evidence pertaining to validity and then moves on to provide evidence relating to reliability.

The construct validity of the scales used in this study was investigated in a number of ways. Firstly, face and content validity issues were considered by an extensive survey of the literature. A pilot study was conducted to test the wording of the questionnaire. The pilot questionnaire was sent to six entrepreneurs (i.e., two novice, two serial and two portfolio), and a number of academics to ensure face and content validity. The questionnaire was modified on the basis of suggestions offered by the entrepreneurs. There were no serious problems except with one item, which was subsequently removed from the questionnaire.

Convergent and discriminant validity were judged using factor analysis. Factor analysis is a generic name given to a class of multivariate statistical methods whose primary purpose is to define the underlying structure in a data matrix (Hair et al., 1995). Following common practice, factor extraction was achieved using Principal Components Analysis (PCA) whereby linear combinations of the observed variables are formed. In this study, several PCAs were computed to identify valid constructs / measures. The two primary uses for principal components analysis (PCA) are data reduction with a view to defining underlying structures and constructs. While PCA can be used for exploratory or confirmatory purposes, in most social sciences research it is used from an exploratory perspective. Similarly, in this study PCA is used to search for structure among a set of variables, and as a data reduction method. The majority of the analysis was exploratory in nature and thus no strict a-priori constraints were imposed upon the component solutions. However, in a number of

cases certain patterns and results were expected based on the researcher's understanding of the theoretical constructs underlying the study. These considerations in conjunction with the analysis of a set of statistical measures aimed at assessing the outcome of PCA, were used to assess the validity of the measures obtained.

The primary goal of the PCA was to reduce the number of variables by producing components of meaningful theoretical content. To achieve a simpler, theoretically more meaningful component pattern, a rotation of the component matrix was carried out using the VARIMAX orthogonal rotation method. Orthogonal rotations are more widely used than oblique rotation methods, and are subject to less controversy. Furthermore, among the various orthogonal approaches, VARIMAX has been found to give a clearer and more stable separation of the components (Hair et al., 1995).

Several popular statistical methods are used to test the appropriateness of employing PCA, and to establish whether the results obtained are satisfactory. In this study, two methods were used to test the appropriateness of the PCA, both of which are reported in the presented PCA models. Firstly, the Barlett test of sphericity, which provides the statistical probability that the correlation matrix has significant correlations among at least some of the variables, was used. Secondly, the Kaiser-Meyer-Ohlin (KMO) statistic was used, which provides a measure of sampling adequacy. The KMO statistic measures the degree of intercorrelation between variables, and varies between zero and one. It will increase as the sample size increases, average correlations increase, the number of variables increases, or the number of components decreases (Hair et al., 1995). The measure can be interpreted with the following guidelines: 0.90 or above, marvellous; 0.80 or above, meritorious; 0.70 or above, middling; 0.60 or above, mediocre; 0.50 or above miserable; and below 0.50, unacceptable.

In order to determine whether the resulting PCAs were satisfactory, the significance of the component loadings and the percentage of variance explained by each PCA solution were examined. For samples with 350 or more respondents, factor loadings of  $\pm 0.30$  are deemed statistically significant (Hair et al., 1995). To determine whether the number of components extracted is appropriate, the researcher

considered the percentage of variance criterion. In social sciences research, where information is often less precise than in the natural sciences, it is not uncommon for the analyst to consider a solution that accounts for 60% (or in some cases even less) of the variance as a satisfactory solution (Hair et al., 1995).

As intimated earlier, the most popular route for judging reliability is through the use of the Cronbach's alpha coefficient, a measure of internal consistency which attempts to calculate the correlation between scale items. Though Cronbach's alpha values of roughly 0.5 or above are deemed acceptable in exploratory research, scales with lower values can be retained if the concept which is represented is felt to be of primary conceptual importance (Diamantopoulos and Hart, 1993). Although values below 0.5 are not ideal, it is unlikely that all scales contained in an exploratory study will prove totally satisfactory. Consistent with previous practice, provided the researcher acknowledges such weaknesses, then insightful conclusions may still be drawn by retaining the problematic scales (Devlin, 1996). The presented tables summarising the PCA models also report the Cronbach's alpha values corresponding to each identified construct / measure.

Having identified the criteria for assessing reliability, validity and the success of the PCAs, the remainder of this section reports on the basic structure and statistics associated with the various constructs / measures utilised in the analysis to test the presented hypotheses. The constructs / measures discussed below relate largely to the various dimensions of human capital, in particular perceived capabilities, attitudes towards opportunity identification, motivations for owning the surveyed business, and the degree of business similarity. Finally, a set of constructs / measures relating the overall strategies of the surveyed businesses is explored as they are used as control variables in presented multivariate regression models.

One way of establishing the capabilities of entrepreneurs is to rely on self-assessment. Self-assessed capabilities / competencies are the core of individuals' self-efficacy beliefs about their personal capabilities to mobilise the motivation, cognitive resources, and courses of action needed to exercise control over events in their lives (Wood and Bandura, 1989). Thus, self-perceptions of capabilities incorporate motivation as well as capability in a single construct. Furthermore, Gist (1987) has

provided evidence supporting strong relationships between perceived and actual competencies.

Table 5.9 shows the results of the PCA carried out on the statements relating to the perceived capabilities of entrepreneur. The results relating to the KMO statistic (0.81) and the Barlett's test ( $p < 0.001$ ) are highly satisfactory, and confirm the appropriateness of applying a PCA to this subset of data. Three components were extracted which accounted for 63.7% of the variance. Component 1 highlights the 'entrepreneurial capability' and relates to five statements with significant component loadings focusing upon the identification of opportunities. Component 2 contains four statements relating to the ability to manage and organise people and resources. Consistent with the literature, this component represents the 'managerial capability' of the respondent. Component 3 highlights the 'technical capability', and relates to two statements focusing upon technical expertise. The pattern of components appears to be logical and consistent with previous discussions concerning the capabilities of entrepreneurs, and as a result the researcher is satisfied that the measurement scales exhibit convergent validity. They also appear to exhibit discriminant validity in so far as the majority of statements only load significantly on one component. In addition, the reliability of the components is highly satisfactory, ranging from 0.67 to 0.85.

Table 5.10 shows the results of the PCA used to explore six statements, relating to entrepreneurs' attitudes towards the identification of business opportunities. The results relating to both the KMO statistic (0.69) and the Barlett's test ( $p < 0.001$ ) are satisfactory, and confirm the appropriateness of applying a PCA to this subset of data. Two components were extracted which accounted for 54.8% of the variance. Though not ideal, as intimated earlier, values less than 60% are generally acceptable in social sciences research (Diamantopoulos and Hart, 1993; Hair et al., 1995). Component 1 highlights the 'developmental approach', and relates to four statements focusing upon the view that business opportunities develop over time. The component has a reasonable Cronbach's alpha of 0.70 suggesting reasonable reliability of the measure. Component 2 relates to two statements focusing upon an alertness-based approach to business opportunity identification. This component was labelled the 'alertness approach'. The reliability of this scale was low (Cronbach's alpha of 0.27) and was, therefore, excluded from further analysis. Overall, the results

suggest that the 'developmental approach' component is sufficiently valid and reliable.

Table 5.11 reports the results relating the PCA used to identify components relating to the motivations cited by the respondents for starting, or purchasing the surveyed business. Twenty four statements relating to motives for business ownership were presented to the respondents. The item relating to unemployment or redundancy as a motive for business ownership was dropped from the final PCA because it had a low communality (i.e., below 0.3). Results relating to the final PCA reported in Table 5.10 suggest that the data was appropriate for a PCA, as indicated by the KMO statistic (0.84) and the Barlett's test of sphericity ( $p < 0.0001$ ). Six components were extracted which accounted for an acceptable 61.3% of variance. Component 1 has been named 'approval' to reflect motives for business ownership based on the desire for recognition, respect, status and influence. Component 2 has been named 'welfare' to largely reflect motives based on the desire to ensure the welfare of others (such as family, community and people with a similar background as the respondent). Component 3 relates to statements suggesting flexibility, control, autonomy and independence as a key motivation for business ownership and has consequently been named 'independence' to reflect this. Component 4 has been named 'personal development' to reflect motives such as 'the desire to be challenged by the problems and opportunities of owning a business', 'to be innovative and at the forefront of technological developments', and 'to continue learning'. Component 5 related to financial reasons for business ownership, such as the desire for financial security, to generate personal wealth, and to reduce one's tax burden or benefit from tax exemptions. Consequently, this component was named 'financial'. Finally, component 6 related to reactive reasons for business ownership, such as taking advantage of an opportunity that presented itself or business ownership making sense at that particular point in time. Hence, component 6 was named 'reactive'. The pattern of components appears to be logical and consistent with the themes identified in previous research concerning the motivations for business ownership, and as a result the researcher is satisfied that the measurement scales exhibit convergent validity. They appear to exhibit discriminant validity in so far as the majority of statements only load significantly on one component. The reliability of the components is also highly satisfactory ranging from 0.68 to 0.86, with one notable

exception. The final component 'reactive' was associated with a Cronbach's alpha score of 0.51. Though not ideal, Cronbach's alpha scores as low as 0.5 have been deemed acceptable in exploratory social science research (Diamantopoulos and Hart, 1993).

Table 5.12 reports the findings of the PCA carried out on items relating to the degree of similarity between the surveyed business and the respondent's previous main job or business. The KMO statistic (0.93) and the Barlett's test of sphericity ( $p < 0.0001$ ) suggest that the data was highly appropriate for carrying out a PCA. The PCA produced two components consistent with previous literature. The first of these was named 'task environment similarity' to reflect the degree of knowledge relating to the product / service, customers, suppliers, technology and competitors. The second component was named 'skills similarity' to reflect the degree of knowledge the entrepreneur possesses in relation to the knowledge, skills and abilities needed; managerial duties; technical-functional duties; and tasks performed in the surveyed business. The pattern of components appears to be logical and consistent with the themes identified in previous research relating to the degree of business similarity. Consequently, the measurement scales exhibit satisfactory convergent validity. They appear to exhibit discriminant validity in so far as the majority of statements only load significantly on one component. The reliability of the two components is also highly satisfactory ranging from 0.87 to 0.92.

Finally, Table 5.13 reports findings relating to the PCA conducted on a set of items relating to firm-level strategies followed by the respondents. Several additional items were developed by this researcher but were subsequently excluded from the PCA due to low levels of communality. The KMO statistic (0.80) and the Barlett's test of sphericity ( $p < 0.0001$ ) both confirm that the data was conducive to a PCA. Consistent with Chandler and Hanks' (1994) original work, the PCA produced three components, named 'innovation', 'differentiation', and 'cost' to reflect the three broad strategies pursued by most businesses. These measures were developed to control for the effect of strategy on firm performance (see Chapter 8). Given the coherence of the components and their consistency with previous research, there is no cause to suspect the convergent validity of the resulting measures. Furthermore, the measures display discriminant validity in that the large majority of statements only load significantly on

a single component. The reliability of the 'innovation', 'differentiation' and 'cost' strategy variables were 0.73, 0.83 and 0.67, respectively and were consequently satisfactory.

**Table 5.9**      **Principal Components Analysis Relating to an Entrepreneur's Capabilities (n = 683)**      <sup>(a)</sup> <sup>(b)</sup> <sup>(c)</sup>

Statements	Component 1: Entrepreneurial capability	Component 2: Managerial capability	Component 3: Technical capability	Communality (h <sup>2</sup> )
I accurately perceive unmet customer needs	0.70	0.02	-0.04	0.49
One of my greatest strengths is identifying goods and services people want	0.79	0.16	0.02	0.65
One of my greatest strengths is my ability to seize high quality business opportunities	0.71	0.29	0.15	0.61
I have a special alertness or sensitivity towards spotting opportunities	0.65	0.22	0.18	0.50
I can usually spot a real opportunity better than professional researchers / analysts	0.69	0.14	0.13	0.51
One of my greatest strengths is achieving results by organising and motivating people	0.19	0.85	-0.02	0.76
One of my greatest strengths is organising resources and co-ordinating tasks	0.14	0.74	0.07	0.57
One of my greatest strengths is my ability to delegate effectively	0.12	0.82	-0.02	0.68
One of my greatest strengths is my ability to supervise, influence, and lead people	0.20	0.83	0.10	0.75
One of my greatest strengths is my expertise in a technical or functional area	0.01	0.05	0.88	0.78
One of my greatest strengths is my ability to develop goods or services that are technically superior	0.23	0.02	0.81	0.71
Eigenvalue	1.72	4.00	1.29	
% of variance explained	24.36	25.45	13.89	
Cronbach's alpha	0.79	0.85	0.66	

Notes. <sup>(a)</sup> Cumulative % of variance explained is 63.7%

<sup>(b)</sup> KMO Measure of Sampling Adequacy = 0.81

<sup>(c)</sup> Bartlett's Test of Sphericity =  $\chi^2 = 2660.5$ ,  $p < 0.0001$



**Table 5.10    Principal Components Analysis Relating to Attitudes towards Opportunity Identification (n = 682)    (a) (b) (c)**

Statements	Component 1: Developmental approach	Component 2: Alertness approach	Communality (h <sup>2</sup> )
Identifying opportunities is really several steps over time	<b>0.80</b>	-0.08	0.65
It is very important that the idea represents a concept which can be developed over time	<b>0.80</b>	-0.05	0.64
The consideration of one opportunity often leads to other ones	<b>0.67</b>	0.23	0.50
New business opportunities often arise in connection to a specific problem	<b>0.59</b>	0.28	0.43
The business opportunities I have identified over the years have been largely unrelated	0.05	<b>0.70</b>	0.49
Ideas for new business opportunities do not require specific market or technological knowledge	0.07	<b>0.76</b>	0.58
Eigenvalue	2.18	1.11	
% of variance explained	34.75	20.09	
Cronbach's Alpha	0.70	0.27	

Notes.    (a) Cumulative % of variance explained is 54.84%  
           (b) KMO Measure of Sampling Adequacy = 0.69  
           (c) Barlett's Test of Sphericity =  $\chi^2 = 540.4$ , p < 0.0001

**Table 5.11 Principal Components Analysis of Entrepreneurs' Motivations (n = 650) (a) (b) (c)**

Statements	Comp. 1 Approval	Comp. 2 Welfare	Comp. 3 Independence	Comp. 4 Personal development	Comp. 5 Financial	Comp. 6 Reactive	Communality (h <sup>2</sup> )
To achieve something and get recognition for it	<b>0.51</b>	0.01	0.45	0.32	0.02	0.03	0.56
To achieve a higher position for myself in society	<b>0.86</b>	0.09	0.03	0.11	0.16	0.14	0.80
To increase the status and prestige of my family	<b>0.83</b>	0.20	-0.01	0.10	0.23	0.10	0.80
To be respected by my friends	<b>0.79</b>	0.30	0.09	0.06	0.13	0.05	0.74
To have more influence in my community	<b>0.67</b>	0.40	0.05	0.12	0.15	-0.04	0.65
To follow the example of a person I admire	0.15	<b>0.53</b>	0.04	0.10	-0.06	0.40	0.47
To continue a family tradition	0.01	<b>0.73</b>	-0.03	0.01	0.08	0.08	0.55
To contribute to the welfare of my relatives	0.31	<b>0.50</b>	0.03	0.02	0.31	-0.06	0.46
To contribute to the welfare of the community I live in	0.28	<b>0.64</b>	0.05	0.19	0.08	-0.07	0.53
To contribute to the welfare of people with the same background as me	0.28	<b>0.67</b>	0.03	0.14	0.06	-0.02	0.54
To have considerable freedom to adopt my own approach to my work	0.03	-0.01	<b>0.79</b>	0.24	0.03	0.19	0.70
To control my own time	0.02	0.04	<b>0.84</b>	0.01	0.16	0.12	0.74
To have greater flexibility for my personal and family life	0.08	0.11	<b>0.65</b>	-0.03	0.41	-0.15	0.62
To be challenged by the prob.s & opportunities of owning a business	0.09	0.08	0.34	<b>0.65</b>	-0.06	0.05	0.57
To continue learning	0.21	0.17	0.18	<b>0.70</b>	-0.04	0.03	0.60
To be innovative and be in the forefront of technological development	0.15	0.12	0.01	<b>0.79</b>	0.12	0.01	0.67
To develop an idea for a product	-0.02	0.08	-0.13	<b>0.72</b>	0.20	0.05	0.58
To have access to indirect benefits such as tax exemptions	0.10	0.32	0.12	0.18	<b>0.68</b>	-0.01	0.62
As a vehicle to reduce the burden of taxes I face	0.09	0.41	0.09	0.09	<b>0.57</b>	0.01	0.52
To give myself, my spouse, and children security	0.23	0.04	0.12	-0.07	<b>0.64</b>	0.23	0.54
To generate personal wealth (earnings or capital gain)	0.22	-0.15	0.15	0.10	<b>0.65</b>	0.18	0.55
It made sense at that time in my life	0.09	-0.02	0.43	-0.07	0.05	<b>0.63</b>	0.59
To take advantage of an opportunity that appeared	0.07	0.07	-0.01	0.15	0.28	<b>0.77</b>	0.70
% of variance explained	0.86	0.73	0.74	0.74	0.68	0.51	
Eigenvalue	6.16	2.34	1.42	1.88	1.23	1.07	
Cronbach's alpha	14.04	11.20	10.25	10.42	9.51	5.88	

Notes. (a) Cumulative % of variance explained is 61.29%

(b) KMO Measure of Sampling Adequacy = 0.84

(c) Barlett's Test of Sphericity =  $\chi^2 = 5554.3$ ,  $p < 0.0001$

**Table 5.12    Principal Components Analysis of Business Similarity (n = 660)    (a) (b) (c)**

Statements	Component 1 Business similarity	Component 2 Task similarity	Communality (h <sup>2</sup> )
Product or service	0.85	0.32	0.82
Customers	0.87	0.23	0.81
Suppliers	0.84	0.30	0.81
Technology	0.70	0.43	0.68
Competitors	0.82	0.26	0.73
Knowledge, skills and abilities needed	0.49	0.67	0.69
Managerial duties	0.09	0.89	0.80
Technical-functional duties	0.43	0.76	0.76
Task performed	0.49	0.70	0.73
Eigenvalue	5.81	1.02	
% of variance explained	44.65	31.18	
Cronbach's alpha	0.92	0.87	

Notes.    (a) Cumulative % of variance explained is 75.83%  
          (b) KMO Measure of Sampling Adequacy = 0.93  
          (c) Barlett's Test of Sphericity =  $\chi^2 = 44021.1$ ,  $p < 0.0001$

Table 5.13    Principal Components Analysis of Strategies Followed (n = 674) <sup>(a)</sup> <sup>(b)</sup> <sup>(c)</sup>

Statements	Component 1: Innovation	Component 2: Differentiation	Component 3: Cost	Communality (h <sup>2</sup> )
We strive to be the first to have products available	0.76	0.23	0.08	0.64
We stress new product / service development	0.80	0.26	0.10	0.72
We engage in novel and innovative marketing techniques	0.77	0.06	0.11	0.61
We invest heavily in Research & Development (R&D)	0.56	-0.16	0.30	0.43
We will go to almost any length to meet customer requirements	0.07	0.77	0.17	0.63
We emphasise our superior customer service	0.18	0.83	0.04	0.72
We focus on providing only highest quality goods and services	0.12	0.78	0.06	0.63
We emphasise that customer needs always come first	0.02	0.82	0.17	0.70
We emphasise cost reduction in all facets of business operations	0.01	0.19	0.73	0.57
We strongly emphasise improvement in employee productivity and operations efficiency	0.21	0.18	0.75	0.63
We have developed lower production costs via process innovation	0.23	0.02	0.75	0.61
Eigenvalue	1.88	3.73	1.27	
% of variance explained	20.67	25.16	16.67	
Cronbach's alpha	0.73	0.83	0.67	

Notes. <sup>(a)</sup> Cumulative % of variance explained is 62.51%  
<sup>(b)</sup> KMO Measure of Sampling Adequacy = 0.80  
<sup>(c)</sup> Barlett's Test of Sphericity =  $\chi^2 = 2364.8$ ,  $p < 0.0001$

**5.5 Demographic Characteristics of the Respondents and their Surveyed Business**

Several key demographic characteristics of valid respondents are reported in this section. As intimated earlier, only respondents who were the founder and / or principal owner of the business were included in the final valid sample. These respondents had to be key decision-makers. The status of the respondents is summarised in Table 5.14.

**Table 5.14 Status of Respondents**

Status	Frequency	Percentage
Founder	308	42.2
Principal owner	160	21.9
Founder & principal owner	160	21.9
Founder, principal owner & other <sup>a</sup>	94	12.9
Founder & other <sup>a</sup>	3	0.4
Principal owner & other <sup>a</sup>	5	0.7
TOTAL	730	100

Note. <sup>a</sup> Other relates to managing director, chairman or 'other' as specified by the respondent.

Table 5.15 provides information relating to the background characteristics of the respondents and their surveyed businesses.

**Table 5.15 Characteristics of Respondents and Surveyed businesses**

Characteristics		Frequency / mean	Percentage / standard deviation
<i>Respondents</i>			
Gender	Male	628	14.0
	Female	102	86.0
Age		49.9	10.14
Parents immigrant?	Yes	46	6.3
	No	680	93.2
Highest level of education	Pre-UG degree	494	69.5
	UG degree	91	12.8
	PG degree	126	17.7
<i>Surveyed businesses</i>			
Path to ownership	Established	593	81.2
	Inherited <sup>a</sup>	26	3.6
	Purchased	111	15.2
Team-based ownership	Yes	261	35.8
	No	469	64.2
Age of business		18.8	18.2
Total employment <sup>b</sup>		26.1	371.7
Family business <sup>c</sup>	Yes	455	62.3
	No	275	37.7

Notes <sup>a</sup> Only inheritors who had also established or purchased a business were considered.

<sup>b</sup> Total employment includes full-time, part-time and casual employees, weighed at 1, 0.5 and 0.25, respectively.

<sup>c</sup> More than 50% of voting shares are owned by a single family related by blood or marriage.

In this study, individuals who had a minority or majority ownership stake and who were involved in the start-up and/or purchase of (a) business(es) were considered as valid respondents. Not surprisingly, therefore, the scale of habitual entrepreneurship detected in this study is higher than reported elsewhere (see Table 3.2), which have tended to focus on business start-ups alone. Out of the 730 entrepreneurs who responded to the survey, 352 (48.2%) respondents were novice entrepreneurs and a further 378 (51.8%) respondents were habitual entrepreneurs. Among the habitual entrepreneurs, 162 (42.9%) respondents were serial entrepreneurs, while 216 (57.1%) respondents were portfolio entrepreneurs. Table 5.16 provides a detailed breakdown of the type of ownership stake(s) held by type of entrepreneur. The vast majority of

novice entrepreneurs held majority equity stakes in the business they owned (84.7%). Further 95.2% of novice entrepreneurs had established the business they owned. Very few habitual entrepreneurs had ownership stakes in just minority businesses, with majority ownership, and minority and majority ownership being the more popular types of ownership (44.2% and 51.9%, respectively). Not surprisingly, a higher proportion of portfolio entrepreneurs used a mixed strategy (69.4%), while the majority of serial entrepreneurs held majority stakes in the businesses they had owned (65.4%). Both serial and portfolio entrepreneurs appeared to have a preference for start-up as a path to ownership (62.3% and 56.5%, respectively) though both groups also pursued a mixed strategy of start-up and purchase too (27.2% and 36.1%, respectively). As the hypotheses developed in Chapter 4 relate to differences between types of entrepreneurs, further examination of their differences will be explored in Chapters 6, 7 and 8.

**Table 5.16 Type of Ownership held by Novice, Serial and Portfolio Entrepreneurs**

	Novice Entrepreneurs (n = 352)		Habitual Entrepreneurs (n=378)		Serial Entrepreneurs (n = 162)		Portfolio Entrepreneurs (n = 216)	
	No. (%)	% of total	No. (%)	% of total	No. (%)	% of total	No. (%)	% of total
<b>Ownership Stake:</b>								
Minority ownership stake(s) only	54 (15.3)	7.4	15 (4.0)	2.1	10 (6.2)	1.3	5 (2.4)	0.7
Majority ownership stake(s) only	298 (84.7)	40.8	167 (44.2)	22.9	106 (65.4)	14.5	61 (28.2)	8.4
Majority and minority ownership stake(s)	N/A	N/A	196 (51.9)	26.8	46 (28.4)	6.2	150 (69.4)	20.6
<b>Path to Ownership:</b>								
Start-up only	335 (95.2)	45.9	223 (59.0)	30.5	101 (62.3)	13.8	122 (56.5)	16.7
Purchase only	17 (4.8)	2.33	33 (8.7)	4.5	17 (10.5)	2.3	16 (7.4)	2.2
Mixed	N/A	N/A	122 (32.3)	16.7	44 (27.2)	6.0	78 (36.1)	10.7

## 5.6 CONCLUSION

This chapter has provided a discussion of the methodology utilised in this study. In section 5.2, the overall paradigm underpinning the study was identified as being a quantitative one. Accordingly, the study aims to provide an objective and un-biased view when exploring the broad research question and presented hypotheses. The research instrument was described and justified in Section 5.3. Further, the key section of the questionnaire used and resulting measures were highlighted. Section 5.4 introduces the issue of 'trustworthiness' by emphasising the importance of generalisability of the results, and the validity and reliability of constructs used. Due to the relatively large sample size and the absence of non-response bias, it can be asserted that the results from the study can be generalised to the wider population of independent business owners in Great Britain. In Section 5.4 the validity and reliability of the constructs / measures to be used to test the presented hypotheses, were demonstrated. Where problems with validity and / or reliability were detected, steps were taken to ensure that the overall reliability and validity of the research would not be compromised. Most notably, components with low reliability and statements which did not exhibit convergent or discriminant validity were removed. Finally, in Section 5.5 the demographic characteristics of the responding entrepreneurs and their surveyed independent firms were briefly summarised

Overall, the analysis in this chapter suggests that it is reasonable to conclude that the dataset is of high quality, in so far as it is representative, valid and reliable. Thus, it is deemed suitable for further analysis designed to formally test the hypotheses developed in Chapter 4. The detailed investigation of these hypotheses will now follow in Chapters 6, 7 and 8 focusing on human capital, behavioural and performance-based differences between novice and habitual entrepreneurs, and then between serial and portfolio entrepreneurs, respectively.



## **CHAPTER SIX**

### **HUMAN CAPITAL DIFFERENCES BY TYPE OF ENTREPRENEUR**

#### **6.1 INTRODUCTION**

Hypotheses relating to the human capital theme are tested and reported in this chapter. The chapter commences with tests of the hypotheses using bivariate t-tests and Chi-square tests depending on the nature of the variable being explored. Hypotheses  $H_{1a}$  to  $H_{4b}$ , relate to general human capital. Hypotheses  $H_{5a}$  to  $H_{7d}$  relate to entrepreneurship-specific human capital, while hypotheses  $H_{8a}$  to  $H_{9b}$  relate to venture-specific human capital. To ensure that inter-relationships among the independent variables are not overlooked, the bivariate analysis is followed by more robust multivariate analysis. In particular, given the dichotomous nature of the two dependent variables (i.e., whether the entrepreneur is a novice or a habitual entrepreneur, and whether the entrepreneur is a portfolio or serial entrepreneur), a logistic regression technique is utilised. This technique allows the identification of variables that are significantly associated with the selected dependent variables.

#### **6.2 HUMAN CAPITAL BY TYPE OF ENTREPRENEURS: BIVARIATE ANALYSIS**

This section provides a summary of the differences between novice and habitual entrepreneurs, and then serial and portfolio entrepreneurs with regard to their human capital. In turn, bivariate differences between the types of entrepreneurs are discussed in terms of general human capital, entrepreneurship-specific human capital and, venture-specific human capital.

##### **6.2.1 General Human Capital (GHK)**

General human capital differences between the types of entrepreneurs are discussed in relation to their highest level of education, managerial human capital, and technical and managerial capabilities.

### 6.2.1.1 Education

The entrepreneurs surveyed were asked to report their highest level of education. Table 6.1 shows that a statistically significant difference was not detected between novice and habitual entrepreneurs with regard to their highest level of education. These findings offer no support for hypothesis H<sub>1a</sub>. We can conclude that habitual entrepreneurs do not report higher levels of education than novice entrepreneurs.

**Table 6.1 Highest Level of Education Reported by Novice and Habitual Entrepreneurs**

Variable	Novice		Habitual		$\chi^2$ statistic	Sig. level (2-tailed)
	No.	%	No.	%		
Highest level of education					2.46	0.29
1. Below undergraduate 'first' degree <sup>a</sup>	271	72.8	256	68.3	1.89	0.17
2. Undergraduate 'first' degree <sup>a</sup>	45	12.1	47	12.5	0.03	0.91
3. Postgraduate degree <sup>a</sup>	56	15.1	72	19.2	2.26	0.15

Note. <sup>a</sup> Relates to respondents who answered 'yes' to this type of degree.

Table 6.2 shows that there was no significant difference between serial and portfolio entrepreneurs with respect to their highest level of education. Therefore, hypothesis H<sub>1b</sub> cannot be supported.

**Table 6.2 Highest Level of Education for Serial Reported by Portfolio Entrepreneurs**

Variable	Serial		Portfolio		$\chi^2$ statistic	Sig. level (2-tailed)
	No.	%	No.	%		
Highest level of education					0.90	0.64
1. Below undergraduate 'first' degree <sup>a</sup>	112	70.4	144	66.7	0.60	0.50
2. Undergraduate 'first' degree <sup>b</sup>	20	12.6	27	12.5	0.01	1.00
3. Postgraduate degree <sup>a</sup>	27	17.0	45	20.8	0.88	0.43

Note. <sup>a</sup> Relates to respondents who answered 'yes' to this type of degree.

### 6.2.1.2 Managerial Human Capital

To establish the nature of work experience acquired, respondents were asked to report their job status immediately prior to starting, purchasing or inheriting their first business. Respondents selected from one of the following: 'managerial' (i.e.,

managerial experience), 'supervisory' (i.e., supervisory experience), 'self-employed' (i.e., self-employment experience), or 'supervised no one' (used as the reference category in further analysis). A statistically significant difference was established between novice and habitual entrepreneurs with regard to their level of attainment (Table 6.3). In particular, a significantly larger proportion of novice (29.2%) rather than habitual entrepreneurs (21.7%) indicated that they had 'supervised no one' ( $p < 0.05$ ). Furthermore, a larger proportion of habitual rather than novice entrepreneurs reported managerial experience (34.8% compared with 12%), and self-employment experience (30.3% compared with 9.2%). These differences were not statistically significant.

Respondents were asked to indicate the number of full-time jobs they had held. Across all entrepreneurs surveyed, the mean number of full-time jobs held was 3.7. One entrepreneur had worked for 50 organisations, while under 4% of entrepreneurs had not worked full-time in any organization. Table 6.3 shows that there was no significant difference between novice and habitual entrepreneurs with respect to the number of previous full-time jobs held. However, further analysis revealed that a significantly larger proportion of habitual entrepreneurs (20.7%) had held 6 or more previous full-time jobs than novice entrepreneurs (14.6%) ( $p < 0.05$ ). Moreover, a significantly larger proportion of novice entrepreneurs (18.9%) had held only one previous full-time job relative to their habitual counterparts (14.4%) ( $p < 0.10$ ). Taken together, the above evidence relating to the level of attainment and the number of previous jobs held, suggest some support for hypothesis H<sub>2a</sub> that habitual entrepreneurs will report higher levels of managerial human capital.

**Table 6.3      Level of Attainment and Number of Full-time Jobs Held Reported by Novice and Habitual Entrepreneurs**

Variable	Novice		Habitual		$\chi^2$ statistic	Sig. level (2-tailed)
	No.	%	No.	%		
<b>Level of attainment</b>					<b>6.72</b>	<b>0.08</b>
1. Managerial experience	112	30.3	130	34.8	1.71	0.21
2. Supervisory experience	116	31.4	118	31.6	0.01	1.00
3. Self-employment experience	34	9.2	45	12.0	1.58	0.23
4. Supervised no one	108	29.2	81	21.7	5.57	0.02
<b>Number of jobs</b>					<b>7.32</b>	<b>0.29</b>
1. 0 previous FT jobs	15	4.2	12	3.3	0.41	0.56
2. 1 previous FT job	67	18.9	52	14.4	2.63	0.11
3. 2 previous FT jobs	59	16.6	69	19.1	0.73	0.44
4. 3 previous FT jobs	62	17.5	58	16.0	0.27	0.62
5. 4 previous FT jobs	62	17.5	60	16.6	0.10	0.77
6. 5 previous FT jobs	38	10.7	36	9.9	0.11	0.81
7. 6 or more previous FT jobs	52	14.6	75	20.7	4.53	0.04

For simplicity in later analysis, a new variable, ‘managerial human capital’ was created. This variable combined these two indicators and named. Details on how this measure was computed, is provided in Section 5.3.4. Table 6.4 below shows that habitual entrepreneurs reported a significantly higher level of managerial human capital than their novice counterparts, lending support to hypothesis H<sub>2a</sub>.

**Table 6.4      Managerial Human Capital of Novice and Habitual Entrepreneurs**

Variable	Novice (n = 351)	Habitual (n = 358)	t- statistic	Df	Sig. level (2-tailed)
<b>Managerial human capital</b>	<b>9.06</b>	<b>10.23</b>	<b>-2.68</b>	<b>707</b>	<b>0.007</b>

To test hypothesis H<sub>2b</sub>, differences between serial and portfolio entrepreneurs with respect to the level and nature of their managerial human capital were examined. Table 6.5 shows that there was a significant difference between serial and portfolio entrepreneurs in terms of their level of attainment ( $p < 0.05$ ). A significantly larger proportion of portfolio entrepreneurs (40.7%) reported they had managerial experience compared to their serial counterparts (26.9%) ( $p < 0.01$ ). Further, a significantly lower proportion of portfolio entrepreneurs (17.8%) indicated that they had supervised no one, relative to serial entrepreneurs (26.9%) ( $p < 0.05$ ). There was

no overall significant difference between serial and portfolio entrepreneurs in terms of the number of previous jobs held. Furthermore, Table 6.6 shows that there was no significant difference between the two types of entrepreneurs when the composite managerial human capital measure was utilised. Therefore, hypothesis H<sub>2b</sub> is not supported.

**Table 6.5 Level of Attainment and Number of Full-time Jobs Held Reported by Serial and Portfolio Entrepreneurs**

Variable	Serial		Portfolio		$\chi^2$ statistic	Sig. level (2-tailed)
	No.	%	No.	%		
<b>Level of attainment</b>					<b>9.28</b>	<b>0.03</b>
Managerial experience	43	26.9	87	40.7	7.67	0.01
Supervisory experience	52	32.5	66	30.8	0.12	0.74
Self-employment experience	22	13.8	23	10.7	0.78	0.42
Supervised no one	43	26.9	38	17.8	4.49	0.04
<b>Number of jobs</b>					<b>6.72</b>	<b>0.35</b>
0 previous FT jobs	6	3.9	6	2.9	0.28	0.77
1 previous FT job	17	11.0	35	16.8	2.41	0.13
2 previous FT jobs	34	22.1	35	16.8	1.58	0.23
3 previous FT jobs	25	16.2	33	15.9	0.01	1.00
4 previous FT jobs	23	14.9	37	17.8	0.52	0.57
5 previous FT jobs	12	7.8	24	11.5	1.39	0.29
6 or more previous FT jobs	37	24.0	38	18.3	1.79	0.19

**Table 6.6 Overall Managerial Human Capital of Serial and Portfolio Entrepreneurs**

Variable	Serial (n = 154)	Portfolio (n = 204)	t- statistic	Df	Sig. level (2-tailed)
Managerial Human Capital	10.03	10.38	-0.56	356	0.58

### 6.2.1.3 Capabilities

As intimated in section 5.4.4 (Table 5.9), entrepreneurial capabilities can be considered a component of human capital specific to entrepreneurship and are therefore explored later. Here, a distinction is made between a respondent's perceived level of managerial and technical capabilities. Table 6.7 shows that habitual entrepreneurs reported significantly higher levels of managerial capability

than novice entrepreneurs ( $p < 0.05$ ). Conversely, novice entrepreneurs reported significantly higher levels of technical capability ( $p < 0.05$ ) than habitual entrepreneurs. These findings provide support for hypotheses  $H_{3a}$  and  $H_{4a}$ , respectively.

**Table 6.7      Perceived Managerial and Technical Capabilities Reported by Novice and Habitual Entrepreneurs**

Variable (component scores)	Novice (n = 322)	Habitual (n = 361)	t- statistic	Df	Sig. level (2-tailed)
Managerial capability	-0.09	0.08	-2.25	681	0.03
Technical capability	0.09	-0.08	2.10	681	0.04

Among the habitual entrepreneurs, portfolio entrepreneurs reported a significantly higher level of managerial capability ( $p < 0.05$ ) than serial entrepreneurs, lending support for Hypothesis  $H_{3b}$  (Table 6.8). However, no significant difference was detected between serial and portfolio entrepreneurs with respect to their technical capability. Therefore, hypothesis  $H_{4b}$  could not be supported.

**Table 6.8      Perceived Managerial and Technical Capabilities Reported by Serial and Portfolio Entrepreneurs**

Variable (component scores)	Serial (n = 157)	Portfolio (n = 204)	t- statistic	Df	Sig. level (2-tailed)
Managerial capability	-0.04	0.18	-2.07	359	0.04
Technical capability	-0.12	-0.04	-0.69	359	0.49

### 6.2.2 Entrepreneurship-Specific Human Capital (SHK<sub>E</sub>)

#### 6.2.2.1 Entrepreneurial Capability

No significant differences were detected between novice and habitual entrepreneurs with regard to entrepreneurial capability (Table 6.9). Similarly, no significant difference was detected between serial and portfolio entrepreneurs (Table 6.10). Hypotheses  $H_{5a}$  and  $H_{5b}$ , therefore, cannot be supported.

**Table 6.9      Perceived Entrepreneurial Capability Reported by Novice and Habitual Entrepreneurs**

Variable (component scores)	Novice (n = 322)	Habitual (n = 361)	t- statistic	Df	Sig. level (2-tailed)
Entrepreneurial capability	-0.01	0.01	-0.28	681	0.78

**Table 6.10      Perceived Entrepreneurial Capability Reported by Serial and Portfolio Entrepreneurs**

Variable (component scores)	Serial (n = 157)	Portfolio (n = 204)	t- statistic	Df	Sig. level (2-tailed)
Entrepreneurial Capability	-0.08	0.08	-1.41	359	0.16

6.2.2.2 Parental Background

Table 6.11 shows that a significantly higher proportion of habitual (27.9%) rather than novice entrepreneurs (19.7%) reported that they had parent(s) who were / are business owners than novice entrepreneurs. This finding lends support to hypothesis H<sub>6a</sub>.

**Table 6.11      Parental Business Ownership Reported by Novice and Habitual Entrepreneurs**

Variable	Novice		Habitual		$\chi^2$ statistic	Sig. level (2-tailed)
	No.	%	No.	%		
Parent(s) business owner					6.90	0.01
Yes	73	19.7	105	27.9		
No	297	80.3	271	72.1		

No significant difference was detected between serial and portfolio entrepreneurs with regard to parental business ownership (Table 6.12). Therefore hypothesis H<sub>6b</sub> cannot be supported.

**Table 6.12      Parental Business Ownership Reported by Serial and Portfolio Entrepreneurs**

Variable	Serial		Portfolio		$\chi^2$ statistic	Sig. level (2-tailed)
	No.	%	No.	%		
Parent(s) business owner					0.39	0.56
Yes	42	26.3	63	29.2		
No	118	73.8	153	70.8		

6.2.2.3 Attitudes Toward Opportunity Identification

Table 6.13 shows that no significant differences between novice and habitual entrepreneurs were detected with respect to statements relating to their attitudes towards opportunity identification. Therefore, there is no support for hypotheses H<sub>7a</sub> (relating to the developmental approach) or H<sub>7c</sub> (relating to the alertness approach). It should be noted however, that hypothesis H<sub>7c</sub> could not be rigorously tested because the statements relating to the alertness approach were associated with low construct reliability (see section 5.4.4).

Additional analysis revealed no significant difference between serial and portfolio entrepreneurs with regard to the five developmental approach attitudes towards opportunity identification statements (Table 6.14). Consequently, hypothesis H<sub>7d</sub> is not supported. With respect to the statements relating to alertness, as expected, portfolio entrepreneurs held a more favourable attitude towards an alertness-based approach than serial entrepreneurs, lending some support for Hypothesis H<sub>7b</sub>. However, as intimated above hypothesis H<sub>7d</sub> could not be rigorously tested.



Table 6.13 Attitude towards Opportunity Identification Reported by Novice and Habitual Entrepreneurs <sup>a</sup>

Variable (mean scores)	Novice	Habitual	No. of respondents	T - statistic	Significance level (two-tailed)
<i>Developmental Approach</i>					
Identifying opportunities is really several steps over time <sup>b</sup>	3.76	3.81	682	-0.67	0.50
It is very important that the idea represents a concept which can be developed over time <sup>b</sup>	3.58	3.66	682	-1.05	0.29
The consideration of one opportunity often leads to other ones <sup>b</sup>	3.98	4.07	682	-1.49	0.14
New business opportunities often arise in connection to a specific problem <sup>b</sup>	3.69	3.77	682	-1.21	0.23
<i>Alertness Approach</i>					
The business opportunities I have identified over the years have been largely unrelated <sup>c</sup>	2.84	2.86	682	-0.03	0.81
Ideas for new business opportunities do not require specific market or technological knowledge <sup>c</sup>	2.97	3.12	682	-1.63	0.10

Notes. <sup>a</sup> The following scale was used: (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree.

<sup>b</sup> Item belongs to the 'Developmental Approach' component identified in Table 5.10.

<sup>c</sup> Item belongs to the 'Alertness Approach' component identified in Table 5.10.

Table 6.14      Attitude towards Opportunity Identification by Serial and Portfolio Entrepreneurs <sup>a</sup>

Variable (mean scores)	Serial	Portfolio	No. of respon- dents	t - statistic	Significance level (two- tailed)
<i>Developmental Approach</i>					
Identifying opportunities is really several steps over time <sup>b</sup>	3.88	3.76	363	1.18	0.34
It is very important that the idea represents a concept which can be developed over time <sup>b</sup>	3.65	3.67	363	-0.19	0.85
The consideration of one opportunity often leads to other ones <sup>b</sup>	4.00	4.13	363	-1.49	0.14
New business opportunities often arise in connection to a specific problem <sup>b</sup>	3.72	3.81	363	-0.99	0.32
<i>Alertness Approach</i>					
The business opportunities I have identified over the years have been largely unrelated <sup>c</sup>	2.69	3.00	363	-2.28	0.02
Ideas for new business opportunities do not require specific market or technological knowledge <sup>c</sup>	3.09	3.15	363	-0.47	0.64

Notes.      <sup>a</sup> The following scale was used: (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree.

<sup>b</sup> Item belongs to the 'Developmental Approach' component identified in Table 5.10.

<sup>c</sup> Item belongs to the 'Alertness Approach' component identified in Table 5.10.

6.2.3 Venture-Specific Human Capital (SHK<sub>v</sub>)

As intimated earlier (section2.6.1), motivations for establishing or purchasing a venture and the level of know-how relating to the task environment and the skills and abilities needed for the current venture can be viewed as elements of human capital specific to the venture. In this section, business similarity and motivations are discussed with regard to the entrepreneur types.

6.2.3.1 Domain Knowledge (Business and Task Similarity)

Respondents were asked to indicate how similar the surveyed business was, on various dimensions, to their previous main job / business. Nine statements relating to business similarity were explored within a PCA. Task Environment similarity and skills similarity were identified (Table 5.12). Table 6.15 shows that habitual entrepreneurs, report significantly higher task environment similarity scores. However, there was no significant difference between them with regard to skills / abilities similarity. Hence, H<sub>8a</sub> is supported, whilst hypothesis H<sub>8c</sub> cannot be supported.

**Table 6.15 Business and Task Similarity Reported by Novice and Habitual Entrepreneurs**

Variable (component scores)	Novice (n = 315)	Habitual (n = 345)	t- statistic	Df	Sig. level (2-tailed)
Business similarity	-0.08	0.07	-1.90	658	0.06
Task similarity	0.05	-0.04	1.14	658	0.26

No significant differences were detected between serial and portfolio entrepreneurs in terms of both dimensions of domain similarity (Table 6.16). Consequently, hypotheses H<sub>8b</sub> and H<sub>8d</sub> are not supported.

**Table 6.16 Business and Task Similarity Reported by Serial and Portfolio Entrepreneurs**

Variable (component scores)	Serial (n = 145)	Portfolio (n = 199)	t- statistic	Df	Sig. level (2-tailed)
Business similarity	0.01	0.11	-0.97	343	0.33
Task similarity	-0.03	-0.05	0.25	343	0.80

### 6.2.3.2 Motivations

Twenty three statements relating to the motivations for starting or purchasing the surveyed business were explored within a PCA (section 5.4.4). Six components were identified: ‘personal development’; ‘independence’; ‘approval’; ‘welfare’; ‘tax’; and ‘wealth’. Differences between novice and habitual entrepreneurs with regard to their various motivations are summarised in Table 6.17. A significant difference was found only with respect to one of the motivations. Habitual entrepreneurs were significantly more likely to highlight personal development-related motives for starting or purchasing the surveyed business compared with novice entrepreneurs ( $p < 0.01$ ). Personal development represents an intrinsic motivation. Consequently, there is some support for hypothesis  $H_{9a}$ .

**Table 6.17 Motivations Reported by Novice and Habitual Entrepreneurs**

Variable (component scores)	Novice (n = 306)	Habitual (n = 344)	t- statistic	Df	Sig. level (2-tailed)
<i>Intrinsic Motives</i>					
Personal development	-0.12	0.11	-2.92	648	0.00
Independence	0.06	-0.06	1.53	648	0.13
<i>Extrinsic Motives</i>					
Approval	0.04	-0.03	0.87	648	0.38
Welfare	0.01	-0.01	0.11	648	0.91
Financial	0.01	-0.01	0.14	648	0.89
Reactive	0.04	-0.04	0.96	648	0.34

Only one significant difference was detected between serial and portfolio entrepreneurs with regard to their motivations. Table 6.18 shows serial entrepreneurs found the extrinsic ‘approval’ motive to be more important than portfolio entrepreneurs. Hypothesis  $H_{9b}$  is, therefore, not supported.

**Table 6.18     Motivations Reported by Serial and Portfolio Entrepreneurs**

Variable (component scores)	Serial (n = 147)	Portfolio (n = 197)	t-statistic	Df	Sig. level (2-tailed)
<i>Intrinsic Motives</i>					
Independence	0.05	0.15	-1.00	342	0.32
Personal development	0.02	-0.11	1.16	342	0.25
<i>Extrinsic Motives</i>					
Approval	<b>0.08</b>	<b>-0.12</b>	<b>1.79</b>	<b>342</b>	<b>0.07</b>
Welfare	0.02	-0.02	0.40	342	0.69
Financial	-0.37	0.02	-0.50	342	0.62
Reactive	-0.12	0.02	-1.22	342	0.23

**6.3     HUMAN     CAPITAL     BY     TYPE     OF     ENTREPRENEUR:  
MULTIVARIATE ANALYSIS**

It was felt necessary to supplement the bivariate analysis with more sophisticated and robust multivariate analysis. Whilst investigations of a bivariate nature provide some guidance as to the underlying relationships present, complex interrelationships may be overlooked. As a result, it is considered appropriate to utilise a logistic regression as a suitable testing vehicle for the two dependent binary variables: habitual versus novice; and serial versus portfolio entrepreneur categories. In a logistic regression the probability of a particular event/state occurring is estimated. In this case the probability of an entrepreneur being a habitual entrepreneur (as opposed to a novice) and among the habitual entrepreneur sample of one being a portfolio entrepreneur (as opposed to a serial entrepreneur) is estimated. Maximum likelihood logistic regression is used to test the presented hypotheses. Two binary dependent variables are considered. The first model explores the independent variables associated with the habitual entrepreneurs compared with novice entrepreneurs dependent variable, whilst the second model explored the independent variables associated with portfolio entrepreneurs compared with serial entrepreneurs dependent variable. Assumptions of logistic regression analysis are considered, particularly the issue of multicollinearity.

It was hoped that the direction of association for the chosen variables would complement the bivariate findings. The significance of individual variables was

established using the Wald statistic (Hair et al., 1995). The overall goodness of fit of each logistic regression model was assessed in a number of ways. Firstly the overall significance of the model was ascertained with reference to the Chi-square statistic. Secondly, the percentage of cases predicted correctly was monitored. Finally, a pseudo r-square coefficient was assessed based on the Cox & Snell r-square coefficient and the Nagelkerke r-square figure coefficient.

The selection of independent variables was guided by the human capital framework discussed in Chapters 2 and 4. The two dependent variables were presumed to be associated with general human capital, entrepreneurship-specific human capital, and venture-specific human capital. In the following discussion, Model 1 relates to the HABITUAL represents the binary dependent variable, which took a value of '1' if the respondent was a habitual entrepreneur and '0' for a novice entrepreneur. In Model 1, the following relationships are assumed:

$$\text{HABITUAL} = f(\text{GHK}, \text{SHK}_E, \text{SHK}_V)$$

Where;

GHK represents general human capital and is measured in terms of the age of the founder (*Age* and *Age*<sup>2</sup> to account for possible non-linearities), *Gender*, the highest level of education (*Education*), the level of managerial human capital accounting for both the number of previous experiences (i.e., jobs), the level of attainment in previous jobs (*Managerial Human Capital*), and perceived capabilities (*Managerial capability* and *Technical capability*).

SHK<sub>E</sub> represents human capital specific to entrepreneurship and is measured in terms of the entrepreneur's perceived entrepreneurial capability (*Entrepreneurial capability*), parental business ownership experience (*Parent business owner*), and the entrepreneur's attitude towards opportunity identification in terms of the extent to which they considered a developmental approach to opportunity identification to be important (*Development*).

SHK<sub>v</sub> represents human capital specific to the venture and is measured in terms of motivations for business ownership (*Approval, Welfare, Independence, Personal Development, Financial and Reactive* motives), and the degree of business similarity (*Task environment similarity and Skills / abilities similarity*).

Model 2 relates to the PORTFOLIO binary dependent variable, which took a value of '1' if the respondent was a portfolio entrepreneur and '0' if the entrepreneur was a serial entrepreneur. In Model 2, the following relationships are assumed:

Model 2:

$$\text{PORTFOLIO} = f(\text{GHK}, \text{SHK}_E, \text{SHK}_V)$$

Several steps were taken to ensure that multicollinearity did not pose a problem in the models. Firstly, several of the independent variables selected are based on orthogonal component scores derived from a PCA. Consequently, the correlation between the components is, by definition, close to zero. Secondly, a correlation matrix was calculated for the sample relating to habitual and novice entrepreneurs, as well as the sub-sample relating to portfolio and serial entrepreneurs. Here, the Variance Inflation Factor (VIF) scores were examined. These scores indicate the degree to which each independent variable is explained by the other independent variables. Independent variables with high VIF scores were removed from any further analysis, to minimise the problem of multicollinearity.

It was expected that there would be a strong correlation between *Age* and *Age*<sup>2</sup>. To minimise any problems associated with multicollinearity between these two variables, *Age* was operationalised in terms of deviation from the mean (50 years) and *Age*<sup>2</sup> as the square of the deviation from the mean age (Aiken and West, 1991: 35). All independent variables were examined for multicollinearity. While there were some significant correlations between some of the independent variables, the VIF scores suggest that there are no serious problems with multicollinearity (see Appendix III). All VIF scores were well below the cut-off threshold of ten (Hair et al., 1995).

Model 1 in Table 6.19 is significant ( $p < 0.0001$ ) and has a pseudo R-squared ranging between 0.09 and 0.11. A relatively low R-square is not uncommon in cross-sectional studies. The percentage of respondents correctly classified was satisfactory at over 60%. Five independent variables are individually significantly associated with the HABITUAL dependent variable. With respect to the GHK variables, two significant relationships were identified. Male entrepreneurs were significantly more likely to report that they were habitual entrepreneurs. Entrepreneurs reporting higher levels of perceived technical capability were less likely to be habitual entrepreneurs. This latter finding offers support for hypothesis  $H_{4a}$ , and is consistent with the bivariate evidence. Among the  $SHK_E$  variables, parental business ownership is significantly associated with HABITUAL. Consequently hypothesis  $H_{6a}$  is supported and is consistent with the bivariate evidence. As expected, respondents with parent(s) who were business owners were more likely to be habitual entrepreneurs. Two motivations associated with  $SHK_V$  were significantly related to HABITUAL. Respondents reporting high levels of welfare-based motivation were less likely to be a habitual entrepreneur. Conversely, those reporting personal development as an important motivation were more likely to be habitual entrepreneurs. These findings lend further support for hypothesis  $H_{9a}$ , that habitual entrepreneurs will be more likely to be motivated by intrinsic motives, and less so by extrinsic motives. These findings are also consistent with the bivariate evidence. However, several significant relationships detected by the bivariate analysis were not supported by the multivariate logistic regression analysis. Most notably, independent variables relating to the highest level of education, managerial human capital, perceived managerial capability, and task environment similarity were not significantly associated with HABITUAL.

Model 2 in Table 6.21 focuses on the PORTFOLIO dependent variable. This model is significant ( $p < 0.01$ ) and has a pseudo r-squared ranging between 0.11 and 0.14. The percentage of respondents correctly classified is satisfactory at 64%. Five independent variables are individually significantly associated with the PORTFOLIO dependent variable. Among the variables relating to GHK, the control variable relating to gender was significant. Male entrepreneurs were more likely to be portfolio entrepreneurs. In addition, the perceived level of managerial capability was



significantly and positively associated with PORTFOLIO, lending support to hypothesis H<sub>3b</sub>. None of the variables relating to SHK<sub>E</sub> were associated with PORTFOLIO. With respect to human capital specific to the venture (SHK<sub>V</sub>), intrinsic independence-based and extrinsic welfare-based motives were negatively and significantly associated with the likelihood of being a portfolio entrepreneur. These findings suggest that the intrinsic-extrinsic dichotomy may not be an appropriate means of categorising motives for entrepreneurship. Supporting hypothesis H<sub>8d</sub>, task environment similarity was positively and significantly associated with PORTFOLIO. We can infer that Model 2 has three significant relationships, which were not detected in the bivariate analysis (i.e., independence-based and approval-based motives and task environment similarity).

As an additional check for robustness and to provide more detailed analysis, novice entrepreneurs were compared with portfolio and serial entrepreneurs with respect to their human capital profiles. These results are presented in Appendix IV. The findings suggested that there were a number of significant differences between novice and portfolio entrepreneurs. In terms of GHK, portfolio entrepreneurs were significantly more likely to be male ( $p < 0.001$ ), report higher levels of managerial capability ( $p < 0.01$ ) but lower levels of technical capability ( $p < 0.10$ ) than their novice counterparts. Among the specific human capital variables, portfolio entrepreneurs were significantly more likely to have parent(s) who were business owners ( $p < 0.05$ ), report higher levels of skills similarity between the surveyed business and their previous main activity ( $p < 0.05$ ) and were more likely to be motivated by personal development ( $p < 0.10$ ) than novice entrepreneurs.

Differences were also detected between novice and serial entrepreneurs. Surprisingly, serial entrepreneurs reported significantly lower levels of technical ( $p < 0.01$ ) and entrepreneurial capability ( $p < 0.10$ ) than their novice counterparts. Furthermore, serial entrepreneurs were found to be more likely to have parent(s) who were business owners ( $p < 0.01$ ) and were less likely to be motivated by reactive reasons for business ownership ( $p < 0.10$ ) than novice entrepreneurs.

**Table 6.19** Logistic Regression of Human Capital Variables associated with whether a Respondent is a Habitual or Novice Entrepreneur (Model 1) and whether a Habitual Entrepreneur is a Portfolio or a Serial Entrepreneur (Model 2)

Independent Variables	Model 1 <sup>a, b</sup> :		Model 2 <sup>c, d</sup> :	
	$\beta$	Significance	$\beta$	Significance
<b>GHK</b>				
Age	0.004		-0.007	
Age <sup>2</sup>	-0.001		0.000	
Gender	<b>0.800</b>	**	<b>1.133</b>	*
Education	0.098		0.174	
Managerial Human Capital	0.012		-0.003	
Managerial capability	0.152		<b>0.408</b>	**
Technical capability	<b>-0.283</b>	**	0.134	
<b>SHK<sub>E</sub></b>				
Entrepreneurial capability	-0.094		0.194	
Parent business owners	<b>0.662</b>	***	-0.144	
Development	0.039		-0.102	
<b>SHK<sub>V</sub></b>				
Task environment similarity	0.141		<b>0.248</b>	†
Skills / abilities similarity	0.069		0.097	
Approval	-0.075		<b>-0.222</b>	†
Welfare	<b>-0.178</b>	†	-0.086	
Independence	-0.047		<b>-0.297</b>	*
Personal development	<b>0.210</b>	*	-0.004	
Financial	-0.040		0.048	
Reactive	-0.147		0.144	
Model $\chi^2$	46.16	****	31.64	**
-2 log likelihood	668.20		354.03	
Overall predictive accuracy	60.2		64.1	
Cox & Snell R square	0.085		0.106	
Nagelkerke R square	0.114		0.143	
Number of entrepreneurs	518		281	

Notes. †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ; \*\*\*\*  $p < 0.0001$

<sup>a</sup> Reference category novice entrepreneurs.

<sup>b</sup> VIF scores were well below the maximum appropriate level of 10 (maximum score of 1.33).

<sup>c</sup> Reference category serial entrepreneurs.

<sup>d</sup> VIF scores were well below the maximum appropriate level of 10 (maximum score of 1.33).

## 6.4 CONCLUSION

Table 6.22 summarises the findings of the bivariate and multivariate analyses. Hypotheses H<sub>7a</sub> and H<sub>7b</sub> could not be robustly tested within a multivariate framework due to low levels of reliability with the ‘alertness’ scale. Of the twenty remaining hypotheses, which were tested using both bivariate and multivariate analysis, the results were consistent between the two methods of analysis for 16 out of the 20 hypotheses. Three hypotheses were supported by the bivariate analysis, but not by the multivariate analysis (i.e., hypotheses H<sub>2a</sub>, H<sub>3a</sub>, and H<sub>8a</sub>). Two hypotheses were

supported by the multivariate analysis but not by the bivariate analysis (i.e., hypotheses H<sub>8d</sub> and H<sub>9b</sub>). Multivariate analysis is deemed to be more robust than bivariate analysis, largely on grounds of the ability of multivariate analysis to control for inter-relationships between the independent variables. Therefore, the results from the multivariate analysis should be given greater credence.

Four hypotheses were supported by both methods of analysis: hypothesis H<sub>3b</sub> suggesting that portfolio entrepreneurs will report higher levels of managerial capability than serial entrepreneurs; hypothesis H<sub>4a</sub> suggesting that habitual entrepreneurs will report lower levels of technical capability than novice entrepreneurs; hypothesis H<sub>6a</sub> suggesting that habitual entrepreneurs are more likely to have parent(s) who owned (a) business(es); and hypothesis H<sub>9a</sub> suggesting that habitual entrepreneurs would be more likely to be associated with intrinsic motives for business ownership than novice entrepreneurs.

Contrary to expectation, there were a number of hypotheses for which there was no support (i.e., H<sub>1a</sub>, H<sub>1b</sub>, H<sub>2b</sub>, H<sub>4b</sub>, H<sub>5a</sub>, H<sub>5b</sub>, H<sub>6b</sub>, H<sub>7c</sub>, H<sub>7d</sub>, H<sub>8b</sub>, and H<sub>8c</sub>). Details of these hypotheses are provided in Table 6.22.

Overall, the findings suggest that there are a number of human capital-based characteristics other than the level and nature of business ownership experience, which distinguish habitual entrepreneurs from novice entrepreneurs. Further, these variables can distinguish portfolio entrepreneurs from serial entrepreneurs. Habitual entrepreneurs are more likely to be motivated by intrinsic factors (especially personal development), and less by extrinsic factors (e.g., welfare-based motives) than novice entrepreneurs. Moreover, habitual entrepreneurs report lower levels of perceived technical capability and are more likely to come from a background of business ownership through parent(s) who owned (a) business(es). Among the habitual entrepreneurs, the findings suggest that portfolio entrepreneurs can be distinguished from serial entrepreneurs in terms of a number of human capital-based characteristics. In particular, portfolio entrepreneurs are more likely to report higher levels of perceived managerial capability, task similarity between the current business and the previous main business/job, and are less likely to report intrinsic

motives for business ownership (e.g., approval and independence-based motives) than serial entrepreneurs.

The following chapter explores the relationship between business ownership experience and entrepreneurial behaviour (i.e., opportunity identification and exploitation). Differences between novice and habitual entrepreneurs and then between serial and portfolio entrepreneurs are examined.

Table 6.22 Summary of Findings

Hypothesis Number and Description	Bivariate Results	Multivariate Results
H <sub>1a</sub> Education <sub>habitual</sub> > Education <sub>novice</sub>	Not supported	Not supported
H <sub>1b</sub> Education <sub>portfolio</sub> > Education <sub>serial</sub>	Not supported	Not supported
H <sub>2a</sub> Managerial HK <sub>habitual</sub> > Managerial HK <sub>novice</sub>	Supported	Not supported
H <sub>2b</sub> Managerial HK <sub>portfolio</sub> > Managerial HK <sub>serial</sub>	Not supported	Not supported
H <sub>3a</sub> Managerial Capability <sub>habitual</sub> > Managerial Capability <sub>novice</sub>	Supported	Not supported
H <sub>3b</sub> Managerial Capability <sub>portfolio</sub> > Managerial Capability <sub>serial</sub>	Supported	Supported
H <sub>4a</sub> Technical Capability <sub>habitual</sub> < Technical Capability <sub>novice</sub>	Supported	Supported
H <sub>4b</sub> Technical Capability <sub>portfolio</sub> < Technical Capability <sub>serial</sub>	Not supported	Not supported
H <sub>5a</sub> Entrepreneurial Capability <sub>habitual</sub> > Entrepreneurial Capability <sub>novice</sub>	Not supported	Not supported
H <sub>5b</sub> Entrepreneurial Capability <sub>portfolio</sub> > Entrepreneurial Capability <sub>serial</sub>	Not supported	Not supported
H <sub>6a</sub> Business owner parent <sub>habitual</sub> > Business owner parent <sub>novice</sub>	Supported	Supported
H <sub>6b</sub> Business owner parent <sub>portfolio</sub> > Business owner parent <sub>serial</sub>	Not supported	Not supported
H <sub>7a</sub> Alertness approach <sub>habitual</sub> > Alertness approach <sub>novice</sub>	Not supported	-
H <sub>7b</sub> Alertness approach <sub>portfolio</sub> > Alertness approach <sub>serial</sub>	Supported	-
H <sub>7c</sub> Developmental approach <sub>habitual</sub> > Developmental approach <sub>novice</sub>	Not supported	Not supported
H <sub>7d</sub> Developmental approach <sub>portfolio</sub> < Developmental approach <sub>serial</sub>	Not supported	Not supported
H <sub>8a</sub> Business similarity <sub>habitual</sub> > Business similarity <sub>novice</sub>	Supported	Not supported
H <sub>8b</sub> Business similarity <sub>portfolio</sub> > Business similarity <sub>serial</sub>	Not supported	Not supported
H <sub>8c</sub> Task similarity <sub>habitual</sub> > Task similarity <sub>novice</sub>	Not supported	Not supported
H <sub>8d</sub> Task similarity <sub>portfolio</sub> > Task similarity <sub>serial</sub>	Not supported	Supported
H <sub>9a</sub> Intrinsic motivation <sub>habitual</sub> > Intrinsic motivation <sub>novice</sub>	Some support	Supported
H <sub>9b</sub> Intrinsic motivation <sub>portfolio</sub> < Intrinsic motivation <sub>serial</sub>	Not supported	Supported

**CHAPTER SEVEN**  
**INFORMATION SEARCH AND OPPORTUNITY IDENTIFICATION,**  
**PURSUIT, AND EXPLOITATION BY TYPE OF ENTREPRENEUR**

**7.1 INTRODUCTION**

Guided by the human capital framework, in this chapter, differences between the types of entrepreneurs are explored with regards to information search, opportunity identification, pursuit, and exploitation. Presented hypotheses will be tested with a bivariate statistical framework, and then a multivariate statistical framework. Tests will compare habitual and novice entrepreneurs, and then serial and portfolio entrepreneurs will be compared.

**7.2 INFORMATION SEARCH AND OPPORTUNITY IDENTIFICATION,**  
**PURSUIT, AND EXPLOITATION: BIVARIATE ANALYSIS**

**7.2.1 Information Search**

Respondents were presented with 14 sources of information. They were asked to indicate if they had used any of them. Table 7.1 shows that habitual entrepreneurs used weakly significantly ( $p < 0.09$ ) more information sources (8.37) than novice entrepreneurs (8.94). Table 7.2 shows that while portfolio entrepreneurs used more information sources than serial entrepreneurs, this difference was not statistically significant. Overall, these findings do not provide support for hypotheses  $H_{10a}$  and  $H_{10b}$ . Contrary to expectation, habitual entrepreneurs used more information sources than their novice entrepreneurs.

**Table 7.1 Number of Information Sources Utilised by Novice and Habitual Entrepreneurs**

Variable (mean scores)	Novice	Habitual	n	t-statistic	Sig. level (2-tailed)
Number of information sources used	8.37	8.94	730	-1.71	0.09

**Table 7.2 Number of Information Sources Utilised by Serial and Portfolio Entrepreneurs**

Variable (mean scores)	Serial	Portfolio	n	t-statistic	Sig. level (2-tailed)
Number of information sources used	8.57	9.22	378	-1.43	0.15

Tables 7.3 and 7.4 report individual sources of information used by types of entrepreneurs. Table 7.3 shows that a significantly larger proportion of habitual rather than novice entrepreneurs utilised employees, consultants, financiers, and national government sources.

**Table 7.3 Information Sources Utilised by Novice and Habitual Entrepreneurs**

Variable	Novice <sup>a</sup>		Habitual <sup>a</sup>		$\chi^2$ statistic	Sig. level
	No.	%	No.	%		
Suppliers	250	71.0	266	70.4	0.04	0.87
<b>Employees</b>	<b>208</b>	<b>59.1</b>	<b>267</b>	<b>70.6</b>	<b>10.69</b>	<b>0.00</b>
Customers	292	83.0	327	86.5	1.79	0.22
Other business owners	271	77.0	305	80.7	1.50	0.34
<b>Consultants</b>	<b>167</b>	<b>47.4</b>	<b>207</b>	<b>54.8</b>	<b>3.91</b>	<b>0.05</b>
<b>Financiers</b>	<b>183</b>	<b>52.0</b>	<b>225</b>	<b>59.5</b>	<b>4.20</b>	<b>0.04</b>
Personal friends	250	71.0	282	74.6	1.18	0.28
Family	250	71.0	277	73.3	0.46	0.51
Magazines / newspapers	224	63.6	244	64.6	0.07	0.82
Trade publications	240	68.2	259	68.5	0.01	0.94
Patent filings	102	29.0	120	31.7	0.66	0.42
Technical literature	184	52.3	208	55.0	0.56	0.46
<b>National government sources</b>	<b>137</b>	<b>38.9</b>	<b>170</b>	<b>45.0</b>	<b>2.74</b>	<b>0.10</b>
Local enterprise / development agencies	174	49.4	200	52.9	0.88	0.37

Note. <sup>a</sup> Number and proportion of entrepreneurs who indicated that they had used the source of information in question.

Table 7.4 reports differences between serial and portfolio entrepreneurs with respect to the information sources used. Only two significant differences were detected. Significantly larger proportions of portfolio rather than serial entrepreneurs had used consultants as a source of information, and had used technical literature. The latter difference was only weakly significant.

**Table 7.4 Information Sources Utilised by Serial and Portfolio Entrepreneurs**

Variable	Serial <sup>(a)</sup>		Portfolio <sup>(a)</sup>		$\chi^2$ statistic	Sig. level
	No.	%	No.	%		
Suppliers	114	70.4	152	70.4	0.00	1.00
Employees	107	66.0	160	74.1	2.87	0.11
Customers	140	86.4	187	86.6	0.00	1.00
Other business owners	129	79.6	176	81.5	0.20	0.69
<b>Consultants</b>	<b>77</b>	<b>47.5</b>	<b>130</b>	<b>60.2</b>	<b>5.98</b>	<b>0.02</b>
Financiers	93	57.4	132	61.1	0.53	0.53
Personal friends	118	72.8	164	75.9	0.47	0.55
Family	114	70.4	163	75.5	1.23	0.29
Magazines / newspapers	100	61.7	144	66.7	0.99	0.33
Trade publications	106	65.4	153	70.8	1.25	0.27
Patent filings	48	29.6	72	33.3	0.59	0.50
<b>Technical literature</b>	<b>80</b>	<b>49.4</b>	<b>128</b>	<b>59.3</b>	<b>3.65</b>	<b>0.06</b>
National government sources	69	42.6	101	46.8	0.65	0.47
Local enterprise / development agencies	83	51.2	117	54.2	0.32	0.60

Note. <sup>a</sup> Number and proportion of entrepreneurs who indicated that they had used the source of information in question.

Entrepreneurs were asked to indicate whether the sources of information used have been useful. Table 7.5 shows that novice rather than habitual entrepreneurs found customers and financiers were more useful. Further, Table 7.6 shows that serial entrepreneurs rather than portfolio entrepreneurs suggested that trade publications were significantly more useful.

**Table 7.5 Usefulness of Information Sources Utilised by Novice and Habitual Entrepreneurs <sup>a</sup>**

Variable (mean scores)	Novice	Habitual	No. of respondents	t – statistic	Sig. level (two-tailed)
Suppliers	3.82	3.88	516	-0.68	0.50
Employees	3.69	3.66	619	0.39	0.70
<b>Customers</b>	<b>4.29</b>	<b>4.14</b>	<b>619</b>	<b>2.69</b>	<b>0.01</b>
Other business owners	3.72	3.82	576	-1.33	0.18
Consultants	2.88	2.88	374	-0.03	0.97
<b>Financiers</b>	<b>2.98</b>	<b>2.78</b>	<b>408</b>	<b>1.65</b>	<b>0.10</b>
Personal friends	3.47	3.38	532	0.97	0.33
Family	3.50	3.41	527	0.92	0.36
Magazines / newspapers	3.24	3.22	468	0.20	0.84
Trade publications	3.46	3.46	499	-0.01	0.99
Patent filings	2.54	2.57	222	-0.20	0.85
Technical literature	3.32	3.27	392	0.43	0.67
National government sources	2.62	2.74	307	-0.87	0.38
Local enterprise / development agencies	2.98	2.78	374	1.51	0.13

Note. <sup>a</sup> The following scale was used: (1) not at all useful, (2) not useful, (3) neither not useful nor useful, (4) useful, and (5) very useful.



**Table 7.6 Usefulness of Information Sources Utilised by Serial and Portfolio Entrepreneurs <sup>a</sup>**

Variable (mean scores)	Serial	Portfolio	No. of respon- dents	t – statistic	Sig. level (two- tailed)
Suppliers	3.96	3.81	266	1.55	0.12
Employees	3.66	3.66	267	0.06	0.95
Customers	4.13	4.14	327	-0.19	0.85
Other business owners	3.77	3.85	305	-0.91	0.37
Consultants	2.81	2.93	207	-0.74	0.46
Financiers	2.80	2.77	225	0.18	0.85
Personal friends	3.36	3.40	282	-0.26	0.79
Family	3.49	3.36	277	1.03	0.31
Magazines / newspapers	3.26	3.19	244	0.54	0.59
<b>Trade publications</b>	<b>3.67</b>	<b>3.31</b>	<b>259</b>	<b>2.86</b>	<b>0.01</b>
Patent filings	2.54	2.58	120	-0.23	0.82
Technical literature	3.29	3.27	208	0.14	0.89
National government sources	2.78	2.70	170	0.45	0.66
Local enterprise / development agencies	2.80	2.77	200	0.15	0.88

Note. <sup>a</sup> The following scale was used: (1) not at all useful, (2) not useful, (3) neither not useful nor useful, (4) useful, and (5) very useful.

Respondents' views relating to the usefulness of cited information sources were used to create an information search intensity measure. As proposed by Cooper et al. (1995) (Table 5.4), this measure relates to those information sources cited by 60% of the respondents. Of the fourteen information sources, only eight had been used by 60% of the respondents. The information search intensity measure was computed by summing the ('usefulness') ratings for all eight information sources. Table 7.7 shows no significant differences were detected between novice and habitual entrepreneurs with regard to the information search intensity measure. Moreover, Table 7.8 shows no significant differences were detected between serial and portfolio entrepreneurs. Consequently, hypotheses H<sub>10a</sub> and H<sub>10b</sub> cannot be supported.

**Table 7.7 Information Search Intensity of Novice and Habitual Entrepreneurs**

Variable (mean scores)	Novice	Habitual	No. of respon- dents	t – statistic	Sig. level (two- tailed)
Information search intensity	20.69	21.44	730	-1.06	0.29

**Table 7.8 Information Search Intensity of Serial and Portfolio Entrepreneurs**

Variable (mean scores)	Serial	Portfolio	No. of respon- -dents	t – statistic	Sig. level (two- tailed)
Information search intensity	21.10	21.70	378	-0.63	0.53

**7.2.2 Opportunity Identification, Pursuit and Exploitation**

Though the results relating to the amount of information sought suggests that there are no significant differences between the different types of entrepreneur, the extent to which this information is ‘converted’ into opportunities is worth exploring. In this section the extent and nature of opportunity identification reported by the types of entrepreneurs is explored. Respondents were asked to indicate the number of opportunities for creating or purchasing a business they had: (a) identified and (b) pursued (i.e., committed time and financial resources) within the last five years. Table 7.9 illustrates that a significantly larger proportion of habitual entrepreneurs had identified a greater number of opportunities over the past five years than novice entrepreneurs. Hypothesis H<sub>11a</sub> is, therefore, supported. In addition, Table 7.9 shows that a significantly larger proportion of habitual entrepreneurs rather than novice entrepreneurs had pursued two or more opportunities. Furthermore, a significantly larger proportion of habitual rather than novice entrepreneurs considered two or more of the pursued opportunities to be successes.

Table 7.10 shows that a significantly larger proportion of portfolio rather than serial entrepreneurs had identified and pursued a greater number of opportunities for creating or purchasing a business. Hypothesis H<sub>11b</sub> is, therefore, supported. A significantly larger proportion of portfolio rather than serial entrepreneurs considered two or more of the pursued opportunities to be successes. Conversely, a significantly larger proportion of serial rather than portfolio entrepreneurs considered none of the pursued opportunities to be successes.

**Table 7.9 Number of Opportunities Identified and Pursued Reported by novice and Habitual Entrepreneurs**

Variable	Novice		Habitual		$\chi^2$ statistic	Sig. level
	No.	%	No.	%		
<b>Opportunities identified</b>					<b>62.19</b>	<b>0.00</b>
0	218	65.5	134	36.1	60.46	0.00
1	32	9.6	50	13.5	2.55	0.13
2 or more	83	24.9	187	50.4	48.19	0.00
<b>Opportunities pursued</b>					<b>22.80</b>	<b>0.00</b>
0	32	27.8	26	11.0	15.99	0.00
1	48	41.7	85	35.9	1.14	0.29
2 or more	35	30.4	126	53.2	16.12	0.00
<b>Opportunities considered to be successes</b>					<b>11.97</b>	<b>0.00</b>
0	15	18.5	37	17.8	3.99	0.06
1	51	63.0	90	43.3	3.13	0.09
2 or more	15	18.5	81	38.9	15.01	0.00

**Table 7.10 Number of Opportunities Identified and Pursued Reported by Serial and Portfolio Entrepreneurs**

Variable	Serial		Portfolio		$\chi^2$ statistic	Sig. level
	No.	%	No.	%		
<b>Opportunities identified</b>					<b>10.65</b>	<b>0.01</b>
0	71	44.9	63	29.6	9.28	0.00
1	22	13.9	28	13.1	0.05	0.88
2 or more	65	41.1	122	57.3	9.45	0.00
<b>Opportunities pursued</b>					<b>20.23</b>	<b>0.00</b>
0	17	19.5	9	6.0	10.34	0.00
1	39	44.8	46	30.7	4.80	0.04
2 or more	31	35.6	95	63.3	16.97	0.00
<b>Opportunities considered to be successes</b>					<b>22.16</b>	<b>0.00</b>
0	24	34.3	13	9.4	28.02	0.00
1	30	42.9	60	43.5	0.63	0.48
2 or more	16	22.9	65	47.1	15.22	0.00

The proportion of identified opportunities, which are actually exploited, was also monitored. While an individual may be very good at identifying opportunities, these opportunities may remain no more than an idea which has not been evaluated. Table 7.11 shows a significant difference between novice and habitual entrepreneur in terms of the proportion of identified opportunities they had pursued. A significantly

larger proportion of novice entrepreneur reported that they had not pursued any of the opportunities for creating or purchasing a business they had identified. Furthermore, a significantly larger proportion of habitual rather than novice entrepreneurs indicated that they had pursued all the opportunities they had identified over the past five years. These findings lend support for hypothesis H<sub>12a</sub>.

**Table 7.11 Proportion of Identified Opportunities Pursued by Novice and Habitual Entrepreneurs**

Variable	Novice		Habitual		$\chi^2$ statistic	Sig. level
	No.	%	No.	%		
<b>Proportion of identified opportunities pursued</b>					<b>16.26</b>	<b>0.00</b>
<b>No identified opportunities pursued</b>	<b>32</b>	<b>27.8</b>	<b>26</b>	<b>11.2</b>	<b>15.40</b>	<b>0.00</b>
Less that 50% of identified opportunities pursued	20	17.4	41	17.6	0.00	1.00
50% of more identified opportunities were pursued	24	20.9	57	24.5	0.56	0.50
<b>All identified opportunities were pursued</b>	<b>39</b>	<b>33.9</b>	<b>109</b>	<b>46.8</b>	<b>5.22</b>	<b>0.03</b>

A significant difference was detected between serial and portfolio entrepreneurs in terms of the proportion of identified opportunities pursued. Table 7.12 shows that a significantly higher proportion of serial rather than portfolio entrepreneurs reported that they had not pursued any of the opportunities for creating or purchasing a business they had identified over the past five years. This finding offers some support for hypothesis H<sub>12b</sub>.

**Table 7.12 Proportion of Identified Opportunities Pursued by Serial and Portfolio Entrepreneurs**

Variable	Serial		Portfolio		$\chi^2$ statistic	Sig. level
	No.	%	No.	%		
<b>Proportion of identified opportunities pursued</b>					<b>11.22</b>	<b>0.01</b>
<b>No identified opportunities pursued <sup>a</sup></b>	<b>17</b>	<b>19.8</b>	<b>9</b>	<b>6.1</b>	<b>10.09</b>	<b>0.00</b>
Less that 50% of identified opportunities pursued	11	12.8	30	20.4	2.17	0.16
50% of more identified opportunities were pursued	19	22.1	38	25.9	0.42	0.64
<b>All identified opportunities were pursued</b>	<b>39</b>	<b>45.3</b>	<b>70</b>	<b>47.9</b>	<b>0.11</b>	<b>0.79</b>

A significant difference was detected between novice and habitual entrepreneurs with respect to the selected mode of exploitation. Table 7.13 shows that a significantly larger proportion of novice rather than habitual entrepreneurs had exploited the opportunity associated with the surveyed business through a start-up. Hypothesis H<sub>13a</sub> is, therefore, supported.

**Table 7.13 Mode of Exploitation for the Surveyed Business Reported by Novice and Habitual Entrepreneurs**

Variable	Novice		Habitual		$\chi^2$ statistic	Sig. level
	No.	%	No.	%		
Mode of exploitation					25.37	0.00
Start-up	299	84.9	294	77.8	6.14	0.01
Purchase	53	15.1	58	15.3	0.01	0.92
Inheritance	-	-	26	6.9	n/a	n/a

Table 7.14 shows that a larger proportion of portfolio entrepreneurs had exploited the opportunity through a start-up mode. Conversely, a larger proportion of serial entrepreneurs used a purchase mode of exploitation. Both these differences were not statistically significant. Consequently, there is no support for hypothesis H<sub>13b</sub>.

**Table 7.14 Mode of Exploitation for the Surveyed Business Reported by Serial and Portfolio Entrepreneurs**

Variable	Serial		Portfolio		$\chi^2$ statistic	Sig. level
	No.	%	No.	%		No.
Mode of exploitation					3.90	0.14
Start-up	126	81.3	168	85.3	0.00	1.00
Purchase	29	18.7	29	14.7	1.43	0.25
Inheritance	-	-	19	8.8	n/a	n/a

7.3

INFORMATION SEARCH AND OPPORTUNITY

IDENTIFICATION, PURSUIT, AND EXPLOITATION:

MULTIVARIATE ANALYSIS

Presented hypotheses were tested within a multivariate statistical framework. Ordinary Least Squares (OLS) regression analysis was used. A confirmatory forced entry OLS regression approach was utilised. While forced entry regression tends to produce lower overall model fit (i.e., R-squared), it is often deemed more robust by

identifying a more parsimonious model (Hair et al., 1995). Furthermore, it minimises the risk from other methods that theoretically important variables may be deemed statistically inconsequential, and excluded from the final model.

Appendix V provides the means and standard deviations for the independent and control variables. Correlation coefficients between the independent and control variables and the VIF scores are also reported in Appendix V. The correlation matrix and the VIF scores suggest that the models will not be seriously distorted by multicollinearity. The reader will note that there is a slight variation in the sample size across various models due to a number of respondents who filed missing information for some of the selected dependent and independent variables. For example, for the models relating to information search (i.e., number of information sources used and search intensity), 612 respondents were used, while 599 respondents were used for the opportunity identification models. Sample sensitivity tests were conducted. The information search models were, for example, run on the sample of 599 respondents. The difference between the two models was negligible. Models relating to the samples containing most respondents are now discussed.

Two OLS regression models are presented. The first model explores the contribution made by the control variables (i.e., Models 1a, 1b, 4a, 3b, 7a, 5b, 10a and 7b). The independent variables relating to business ownership experience were not included within the first model. Variables relating to general human capital and human capital specific to entrepreneurship other than business ownership experience were included in the control model. For the models relating to the full sample (i.e., novice and habitual entrepreneurs), two additional regression models are presented. In the first additional model, habitual entrepreneur dummy variable (HABITUAL) is included (i.e., Models 2a, 5a, 8a and 11a). By comparing this model against the control model, the contribution of including business ownership experience could be ascertained with reference to the change in the adjusted  $R^2$  between the two models. To test for definitional sensitivities, a second additional model was computed. Instead of the habitual entrepreneur dummy variable, a continuous variable representing the number of previous minority and / or majority businesses owned was included (i.e., Models 3a, 6a, 9a and 12a).

A similar set of models was computed for the sub-sample of habitual entrepreneurs. The first model included the control variables only (i.e., Models 1b, 3b, 5b and 7b). The second model introduced the PORTFOLIO dummy variable representing whether the entrepreneur was a portfolio entrepreneur or not (i.e., Models 2b, 4b, 6b and 8b).

In addition to the analysis carried out to test the hypotheses developed in Chapter 4, it was also deemed appropriate to check for the possibility of similarities and differences between novice and serial entrepreneurs, and between novice and portfolio entrepreneurs. The results of these checks are reported in Appendix VI. Significant differences between the two pairs are also reported in the footnotes following each model reported in this chapter. Further discussion of these models, with particular reference to the full models used to test the relevant hypotheses, now follows.

### 7.3.1 Number of Information Sources Used

In the following discussion, the dependent variable relates to the number of information sources used (i.e., NUMBER OF INFORMATION SOURCES). The first model (i.e., Model 1a) explores the association between the control variables and the dependent variable. The following relationship is assumed (see section 6.3 for a description of the control variables):

Model 1a:

$$\text{NUMBER OF INFORMATION SOURCES} = f(\text{GHK}, \text{SHK}_E)$$

The second models (i.e., Models 2a and 3a) explore the association between the control variables and independent business ownership experience variables, and the dependent variable. In Model 2a, the independent variable relates to the binary HABITUAL variable. In Model 3a, the independent variable relates to the continuous TOTAL variable. The following relationships were assumed:

Model 2a:

$$\text{NUMBER OF INFORMATION SOURCES} = f(\text{GHK}, \text{SHK}_E, \text{HABITUAL})$$

Model 3a:

$$\text{NUMBER OF INFORMATION SOURCES} = f(\text{GHK}, \text{SHK}_E, \text{TOTAL})$$

With respect to the habitual entrepreneur sub-sample, the following relationship was assumed for the control Model 1b:

$$\text{NUMBER OF INFORMATION SOURCES} = f(\text{GHK}, \text{SHK}_E)$$

The PORTFOLIO represents the binary independent was then introduced. The following relationship was assumed in Model 2b:

$$\text{NUMBER OF INFORMATION SOURCES} = f(\text{GHK}, \text{SHK}_E, \text{PORTFOLIO})$$

All models relating to the full sample of habitual and novice entrepreneurs (i.e., Models 1a, 2a and 3a) were significant at the 0.001 level (Table 7.15). Relative to the control model (Model 1a), the introduction of the business ownership experience variables (i.e., HABITUAL in Model 2a and TOTAL in Model 3a) had no significant effect on the model fit (i.e.,  $R^2$ ). Consistent with the bivariate analysis reported earlier, Models 2a and 3a indicates that neither of the ownership experience variables were related to the number of information sources used. Consequently, there is no support for hypothesis  $H_{10a}$ .

Two control variables relating to GHK (i.e., gender and perceived managerial capability), were weakly significantly related to the number of information sources used in all three models. Male entrepreneurs and those reporting higher level of perceived managerial capability used more information sources in both Models 2a and 3a. Among the variables relating to  $\text{SHK}_E$ , those respondents reporting higher levels of entrepreneurial capability and those indicating the importance of a developmental approach to opportunity identification used more information sources.

Models 1b and 2b in Table 7.16 relate to the sample of habitual entrepreneurs alone. Both models were significant at the 0.01 level. The inclusion of the portfolio entrepreneur dummy variable had no effect on the  $R^2$ , when compared with the



control model (Model 1b). Among habitual entrepreneurs, there was no significant association between being a portfolio entrepreneur and the number of information sources used. Hypothesis H<sub>10b</sub> is, therefore, not supported. In line with the full sample models (i.e., novice and habitual entrepreneurs), the habitual entrepreneur only models suggest that gender, managerial capability, entrepreneurial capability, and emphasis on a developmental approach to opportunity identification were all significantly related to the number of information sources used.

**Table 7.15      OLS Regression Models of Variables Associated with the Number of Information Sources Used by Novice and Habitual Entrepreneurs**

Independent Variables	Model 1a <sup>a</sup> :		Model 2a <sup>a</sup> :		Model 3a <sup>a</sup> :	
	$\beta$		$\beta$		$\beta$	
<i>GHK</i>						
Age	-0.03		-0.03		-0.03	
Age <sup>2</sup>	-0.02		-0.02		-0.02	
Gender	0.06		0.06		0.06	
Education	0.04		0.04		0.04	
Managerial human capital	0.03		0.03		0.03	
Managerial capability	0.11	**	0.10	**	0.11	**
Technical capability	-0.01		-0.01		-0.01	
<i>SHK<sub>E</sub></i>						
Entrepreneurial capability	0.07	†	0.07	†	0.07	†
Parent business owners	0.05		0.05		0.05	
Development	0.14	**	0.14	**	0.14	**
<i>HABITUAL</i>						
	-		0.00		-	
TOTAL	-		-		-0.01	
F-value	3.50	****	3.17	***	3.17	****
R <sup>2</sup>	0.06		0.06		0.06	
Adjusted R <sup>2</sup>	0.04		0.04		0.04	
Change in R <sup>2</sup>	-		0.00		0.00	
N	612		612		612	

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001.  
<sup>a</sup> VIF scores for all the models were well below the maximum level of 10 (maximum score of 2.09).

**Table 7.16     OLS Regression Models of Variables Associated with the Number of Information Sources Used by Serial and Portfolio Entrepreneurs**

Independent Variables	Model 1b <sup>a</sup> : β	Model 2b <sup>a</sup> : β
<i>GHK</i>		
Age	0.02	0.02
Age <sup>2</sup>	-0.04	-0.04
Gender	0.10 †	0.09
Education	0.05	0.04
Managerial human capital	0.03	0.03
Managerial capability	0.13 *	0.12 *
Technical capability	0.05	0.05
<i>SHK<sub>E</sub></i>		
Entrepreneurial capability	0.10 †	0.10 †
Parent business owners	-0.03	-0.03
Development	0.12 *	0.13 *
PORTFOLIO <sup>b</sup>	-	0.03
F-value	2.40 **	2.20 **
R <sup>2</sup>	0.07	0.07
Adjusted R <sup>2</sup>	0.04	0.04
Change in R <sup>2</sup>	-	0.00
N	323	323

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001.  
No significant differences were detected between novice and serial entrepreneurs or novice and portfolio entrepreneurs.  
<sup>a</sup> VIF scores for both models were well below the maximum appropriate level of 10 (maximum score of 2.68).  
<sup>b</sup> Reference category serial entrepreneurs.

**7.3.2 Information Search Intensity**

The information search intensity variable was also selected as a dependent variable. It takes into account the particular information source and its importance. The method of analysis follows the logic presented to explore the dependent variable in section 7.3.1. Consequently, the first model (i.e., Model 4a) explores the association between the control variables and the dependent variable. The following relationship is assumed:

Model 4a:

INFORMATION SEARCH INTENSITY = *f* (GHK, SHK<sub>E</sub>)

The second models (i.e., Models 5a and 6a) explore the association between the control variables and independent business ownership experience variables, and the

information search intensity dependent variable. In Model 5a, the independent variable relates to the binary HABITUAL variable. In Model 6a, the independent variable relates to the continuous TOTAL variable. The following relationships were assumed:

Model 5a:

$$\text{INFORMATION SEARCH INTENSITY} = f(\text{GHK}, \text{SHK}_E, \text{HABITUAL})$$

Model 6a:

$$\text{INFORMATION SEARCH INTENSITY} = f(\text{GHK}, \text{SHK}_E, \text{TOTAL})$$

With respect to the habitual entrepreneur sub-sample, the following relationship was assumed for the control Model 3b:

$$\text{INFORMATION SEARCH INTENSITY} = f(\text{GHK}, \text{SHK}_E)$$

The PORTFOLIO was then introduced. The following relationship was assumed in Model 4b:

$$\text{INFORMATION SEARCH INTENSITY} = f(\text{GHK}, \text{SHK}_E, \text{PORTFOLIO})$$

Table 7.17 shows that both the control Model 4a and the full Models 5a and 6a were highly significant with an  $R^2$  of 0.10. The inclusion of the business ownership variables had no impact on the overall model fit. Hypothesis  $H_{10a}$  is, therefore, not supported. The finding is in line with the bivariate evidence.

Among the control variables, managerial capability, entrepreneurial capability, having at least one parent who was a business owner, and a favourable attitude towards a developmental approach to opportunity identification were positively related to information search intensity. Entrepreneurs reporting a high perceived level of technical capability, however, reported significantly lower levels of information search intensity.

**Table 7.17 OLS Regression Models of Variables Associated with Information Search Intensity of Novice and Habitual Entrepreneurs**

Independent Variables	Model 4a <sup>a</sup> : $\beta$	Model 5a <sup>a</sup> : $\beta$	Model 6a <sup>a</sup> : $\beta$
<i>GHK</i>			
Age	-0.06	-0.06	-0.06
Age <sup>2</sup>	0.04	0.04	0.04
Gender	-0.01	-0.01	-0.01
Education	0.02	0.02	0.02
Managerial human capital	0.03	0.03	0.03
Managerial capability	0.09 *	0.09 *	0.09 *
Technical capability	-0.09 *	-0.09 *	-0.09 *
<i>SHK<sub>E</sub></i>			
Entrepreneurial capability	0.10 *	0.10 *	0.10 *
Parent business owners	0.07 †	0.07 †	0.07 †
Development	0.22 ****	0.22 ****	0.22 ****
HABITUAL	-	-0.02	
TOTAL	-	-	-0.02
F-value	6.62 ****	6.04 ****	6.03 ****
R <sup>2</sup>	0.10	0.10	0.10
Adjusted R <sup>2</sup>	0.08	0.08	0.08
Change in R <sup>2</sup>	-	0.00	0.00
N	612	612	612

Notes. †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ; \*\*\*\*  $p < 0.0001$

<sup>a</sup> VIF scores for all the models were well below the maximum level of 10 (maximum score of 2.09).

Table 7.18 shows the relationship between information search intensity and the nature of business ownership experience (i.e., being a portfolio or a serial entrepreneur). Both the control Model 3a and full Model 4b were highly significant and they both have an adjusted R<sup>2</sup> of 0.07. The inclusion of the PORTFOLIO variable in Model 4b had no significant impact on the overall model fit. Moreover, PORTFOLIO is not individually significantly associated with information search intensity. Hypothesis H<sub>10b</sub> is, therefore, not supported.

As found in Models 5a and 6a with regard to the full sample, high information search intensity was positively associated with managerial capability, entrepreneurial capability, and a favourable attitude towards a developmental approach to opportunity identification.

**Table 7.18 OLS Regression Models of Variables Associated with Information Search Intensity of Serial and Portfolio Entrepreneurs**

Independent Variables	Model 3b <sup>a</sup> :		Model 4b <sup>a</sup> :	
	$\beta$		$\beta$	
<i>GHK</i>				
Age	-0.06		-0.06	
Age <sup>2</sup>	0.04		0.04	
Gender	0.04		0.04	
Education	0.02		0.02	
Managerial human capital	-0.01		-0.01	
Managerial capability	0.12	**	0.12	**
Technical capability	-0.06		-0.06	
<i>SHK<sub>E</sub></i>				
Entrepreneurial capability	0.12	*	0.12	*
Parent business owners	-0.02		-0.02	
Development	0.22	****	0.22	****
PORTFOLIO <sup>b</sup>			-0.01	
F-value	3.45	****	3.13	****
R <sup>2</sup>	0.10		0.10	
Adjusted R <sup>2</sup>	0.07		0.07	
Change in R <sup>2</sup>	-		0.00	
N	323		323	

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

No significant differences were detected between novice and serial entrepreneurs or novice and portfolio entrepreneurs.

<sup>a</sup> VIF scores for both models were well below the maximum appropriate level of 10 (maximum score of 2.68).

<sup>b</sup> Reference category serial entrepreneurs

### 7.3.3 Opportunity Identification

Here, the dependent variable is number of opportunities identified in a given period (NUMBER OF OPPORTUNITIES IDENTIFIED). The logic in the previous two sections is followed. For the full sample, the control model (Model 7a) was specified as follows:

$$\text{NUMBER OF OPPORTUNITIES IDENTIFIED} = f(\text{GHK}, \text{SHK}_E, \text{INFORMATION SEARCH INTENSITY})$$

As before, the two business ownership variables, HABITUAL and TOTAL were then included. Models 8a and 9a, were specified as follows, respectively:

NUMBER OF OPPORTUNITIES IDENTIFIED =  $f(\text{GHK}, \text{SHK}_E, \text{INFORMATION SEARCH INTENSITY}, \text{HABITUAL})$

NUMBER OF OPPORTUNITIES IDENTIFIED =  $f(\text{GHK}, \text{SHK}_E, \text{INFORMATION SEARCH INTENSITY}, \text{TOTAL})$

With respect to the habitual entrepreneur sub-sample, the following relationship was assumed for the control Model 5b:

NUMBER OF OPPORTUNITIES IDENTIFIED =  $f(\text{GHK}, \text{SHK}_E, \text{INFORMATION SEARCH INTENSITY})$

The PORTFOLIO represents the binary independent was then introduced. The following relationship was assumed in Model 6b:

NUMBER OF OPPORTUNITIES IDENTIFIED =  $f(\text{GHK}, \text{SHK}_E, \text{INFORMATION SEARCH INTENSITY}, \text{PORTFOLIO})$

With regard to the full sample (i.e., novice and habitual entrepreneurs), the control model 7a is highly significant, with an adjusted  $R^2$  of 0.11. The full models 8a and 9a were also highly significant, with adjusted  $R^2$  0.16 and 0.2, respectively. An examination of the  $R^2$  in each model suggests that the inclusion of both business ownership experience variables (i.e., HABITUAL and TOTAL) resulted in a significant improvement in the model fit. Furthermore, both HABITUAL and TOTAL were highly significant. Consequently hypothesis  $H_{11a}$  is supported. These findings are in line with the bivariate evidence.

Models 8a and 9a also show that younger and male entrepreneurs identified more opportunities. Entrepreneurs reporting higher levels of education, managerial human capital, managerial capability, entrepreneurial capability, and information search intensity also reported the identification of more opportunities.

Among the habitual entrepreneurs, Table 7.20 shows that although the control model 5b and the full model 6b were highly significant ( $p < 0.0001$ ), the inclusion of

the PORTFOLIO dummy variable resulted in a significant ( $p < 0.01$ ) improvement in the model fit. The PORTFOLIO variable was significantly ( $p < 0.01$ ) and positively associated with the number of opportunities identified. This finding lends support to hypothesis  $H_{11b}$  that portfolio entrepreneurs will identify more opportunities in a given period than their serial counterparts.

**Table 7.19      OLS Regression Models of Variables Associated with the Number of Opportunities for Creating / Purchasing an Opportunity Identified by Novice and Habitual Entrepreneurs**

Independent Variables	Model 7a <sup>a</sup> :		Model 8a <sup>a</sup> :		Model 9a <sup>a</sup> :	
	$\beta$		$\beta$		$\beta$	
<i>GHK</i>						
Age	-0.20	****	-0.22	****	-0.23	****
Age <sup>2</sup>	0.00		0.01		0.01	
Gender	0.18	****	0.15	****	0.14	****
Education	0.10	**	0.09	*	0.09	*
Managerial human capital	0.07	†	0.06		0.07	†
Managerial capability	0.09	*	0.08	*	0.06	
Technical capability	-0.03		-0.01		-0.01	
<i>SHK<sub>E</sub></i>						
Entrepreneurial capability	0.12	**	0.13	**	0.10	**
Parent business owners	0.02		-0.01		-0.04	
Development	0.07		0.06		0.08	†
Search intensity	0.09	*	0.10	*	0.10	**
HABITUAL	-		0.23	****	-	
TOTAL	-		-		0.33	****
F-value	7.83	****	10.53	****	14.68	****
R <sup>2</sup>	0.13		0.18		0.23	
Adjusted R <sup>2</sup>	0.11		0.16		0.22	
Change in R <sup>2</sup>	-		0.05	****	0.10	****
N	599		599		599	

Notes. †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ; \*\*\*\*  $p < 0.0001$ .  
Serial entrepreneurs identified significantly more opportunities than novice entrepreneurs ( $p < 0.01$ ). Portfolio entrepreneurs identified significantly more opportunities than novice entrepreneurs ( $p < 0.0001$ ).  
<sup>a</sup> VIF scores for all models were well below the maximum level of 10 (maximum score of 2.09).

**Table 7.20 OLS Regression Models of Variables Associated with the Number of Opportunities for Creating / Purchasing an Opportunity Identified by Serial and Portfolio Entrepreneurs**

Independent Variables	Model 5b <sup>a</sup> :		Model 6b <sup>a</sup> :	
	$\beta$		$\beta$	
<i>GHK</i>				
Age	-0.20	****	-0.19	****
Age <sup>2</sup>	-0.02		-0.02	
Gender	0.11	**	0.09	
Education	0.06		0.05	
Managerial human capital	0.06		0.06	
Managerial capability	0.14	**	0.12	*
Technical capability	0.00		0.00	
<i>SHK<sub>E</sub></i>				
Entrepreneurial capability	0.20	****	0.19	***
Parent business owners	-0.04		-0.04	
Development	0.00		0.01	
Search intensity	0.08		0.08	
PORTFOLIO <sup>b</sup>	-		0.15	**
F-value	3.45	****	3.76	****
R <sup>2</sup>	0.14		0.16	
Adjusted R <sup>2</sup>	0.10		0.12	
Change in R <sup>2</sup>	-		0.02	**
N	319		319	

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001.

<sup>a</sup> VIF scores for both models were well below the maximum appropriate level of 10 (maximum score of 2.68).

<sup>b</sup> Reference category serial entrepreneurs.

#### 7.3.4 Opportunity Pursuit

In this section the dependent variable explored relates to the proportion of opportunities identified with were pursued (PROPORTION OF OPPORTUNITIES PURSUED). As before, the control model computed on the full sample (i.e., novice and habitual entrepreneurs) was specified as follows:

Model 10a:

PROPORTION OF OPPORTUNITIES PURSUED =  $f$  (GHK, SHK<sub>E</sub>, INFORMATION SEARCH INTENSITY)

In Models 11a and 12a, the two business ownership experience independent variables (i.e., HABITUAL and TOTAL) were included, respectively. The following relationships were assumed:



Model 11a:

PROPORTION OF OPPORTUNITIES PURSUED =  $f$  (GHK, SHK<sub>E</sub>,  
INFORMATION SEARCH INTENSITY, HABITUAL)

Model 12a:

PROPORTION OF OPPORTUNITIES PURSUED =  $f$  (GHK, SHK<sub>E</sub>,  
INFORMATION SEARCH INTENSITY, TOTAL)

With regard to the sub-sample of habitual entrepreneurs, the control model (i.e., Model 7b) was specified as follows:

PROPORTION OF OPPORTUNITIES PURSUED =  $f$  (GHK, SHK<sub>E</sub>,  
INFORMATION SEARCH INTENSITY, PORTFOLIO)

The PORTFOLIO independent variable was then added in Model 8b. Model 8b was specified as follows:

PROPORTION OF OPPORTUNITIES PURSUED =  $f$  (GHK, SHK<sub>E</sub>,  
INFORMATION SEARCH INTENSITY, PORTFOLIO)

Table 7.21 shows that the control Model 10a and Model 12a are not significant. However, Model 11a was significant at  $p < 0.05$ , with an adjusted  $R^2$  of 0.04. Compared to the control model, the inclusion of the HABITUAL variable resulted in a significant improvement in the model fit. Consequently, hypothesis H<sub>12a</sub> is supported.

**Table 7.21 OLS Regression Models of Variables Associated with the Proportion of Identified Opportunities that were Pursued by Novice and Habitual Entrepreneurs**

Independent Variables	Model 10a <sup>a</sup> :	Model 11a <sup>a</sup> :	Model 12a <sup>a</sup> :
	β	β	β
<i><b>GHK</b></i>			
Age	0.12 †	0.09	0.12 †
Age <sup>2</sup>	0.09	0.09	0.09
Gender	-0.02	-0.03	-0.02
Education	-0.03	-0.02	-0.03
Managerial human capital	-0.02	-0.02	-0.02
Managerial capability	0.08	0.07	0.08
Technical capability	0.08	0.09	0.08
<i><b>SHK<sub>E</sub></b></i>			
Entrepreneurial capability	0.07	0.06	0.07
Parent business owners	-0.01	-0.02	-0.01
Development	0.06	0.06	0.06
Search Intensity	-0.14 *	-0.12 *	-0.14 *
<b>HABITUAL</b>	-	0.17 **	-
<b>TOTAL</b>	-	-	0.02
F-value	1.37 n/s <sup>b</sup>	1.67 *	1.26 n/s <sup>b</sup>
R <sup>2</sup>	0.05	0.08	0.05
Adjusted R <sup>2</sup>	0.01	0.04	0.01
Change in R <sup>2</sup>	-	0.03 **	0.00
N	299	299	299

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001  
<sup>a</sup> Variance Inflation Factor (VIF) scores for all models were well below the maximum level of 10 (maximum score of 2.84)  
<sup>b</sup> Not significant

Table 7.22 shows that both the control model 7b and full model 8b are significant, with a minimum adjusted R<sup>2</sup> of 0.05. The inclusion of the PORTFOLIO variable resulted in a significant improvement in the model fit and the variable itself was significant. Hypothesis H<sub>12b</sub> is, therefore, supported.

**Table 7.22 OLS Regression Models of Variables Associated with the Proportion of Identified Opportunities that were Pursued by Serial and Portfolio Entrepreneurs**

Independent Variables	Model 7b <sup>a</sup> :	Model 8b <sup>a</sup> :
	$\beta$	$\beta$
<b><i>GHK</i></b>		
Age	0.07	0.07
Age <sup>2</sup>	0.16 *	0.17 *
Gender	0.01	-0.02
Education	-0.06	-0.07
Managerial human capital	-0.05	-0.04
Managerial capability	0.08	0.07
Technical capability	0.13 †	0.13 †
<b><i>SHK<sub>E</sub></i></b>		
Entrepreneurial capability	0.09	0.07
Parent business owners	0.01	0.02
Development	0.17 *	0.18 *
Search Intensity	-0.19 *	-0.19 **
PORTFOLIO <sup>b</sup>	-	0.13 †
F-value	1.85 *	2.01 *
R <sup>2</sup>	0.10	0.11
Adjusted R <sup>2</sup>	0.05	0.06
Change in R <sup>2</sup>	-	0.02 †
N	202	202

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001.  
Portfolio entrepreneurs pursued a significantly larger proportion of identified opportunities than novice entrepreneurs (P < 0.0001). No significant difference between serial and novice entrepreneurs was detected.  
<sup>a</sup> VIF scores for both models were well below the maximum appropriate level of 10 (maximum score of 3.46).  
<sup>b</sup> Reference category serial entrepreneurs.

### 7.3.5 Opportunity Exploitation

In this section, the dependent variable explored relates to the mode of exploitation. In particular, the LIKELIHOOD OF PURCHASE dependent variable is a binary variable which takes a value of ‘1’ if the respondent had purchased the surveyed business, and ‘0’ if otherwise. Given the binary nature of this dependent variable, a logistic regression was computed. The control model (i.e., Model 13a) for the full sample was based on the following assumed relationship:

$$\text{LIKELIHOOD OF PURCHASE} = f \text{ (GHK, SHK}_{\text{E}}\text{, INFORMATION SEARCH INTENSITY)}$$

The full models (i.e., Model 14a and 15a) included the two business ownership independent variables and were specified as follows:

Model 14a:

$$\text{LIKELIHOOD OF PURCHASE} = f \text{ (GHK, SHK}_E\text{, INFORMATION SEARCH INTENSITY, HABITUAL)}$$

Model 15a:

$$\text{LIKELIHOOD OF PURCHASE} = f \text{ (GHK, SHK}_E\text{, INFORMATION SEARCH INTENSITY, TOTAL)}$$

The control model (i.e., Model 9b) for the sub-sample of habitual entrepreneurs assumed the following relationship:

$$\text{LIKELIHOOD OF PURCHASE} = f \text{ (GHK, SHK}_E\text{, INFORMATION SEARCH INTENSITY)}$$

In Model 10b, the PORTFOLIO independent variable was introduced. The following relationship is assumed:

$$\text{LIKELIHOOD OF PURCHASE} = f \text{ (GHK, SHK}_E\text{, INFORMATION SEARCH INTENSITY, PORTFOLIO)}$$

Table 7.23 reports findings relating to the full sample and shows that the control model 13a and full models 14a and 15a are significant, with an  $R^2$  ranging between 0.06 and 0.10 depending on the  $R^2$  indicator used. The inclusion of both business ownership experience variables (i.e., HABITUAL and TOTAL) did not significantly improve the model fit. Further, these independent variables were not individually significant. Consequently, hypothesis  $H_{13a}$  cannot be supported.

Entrepreneurs reporting higher levels of managerial human capital, technical capability, and entrepreneurial capability were less likely to have purchased their surveyed business. Entrepreneurs who had at least one parent who was / is a business owner were more likely to have purchased the surveyed business.

With respect to the sub-sample of habitual entrepreneurs, Table 7.24 shows that while the control model 9b and the full model 10b were significant, the inclusion of PORTFOLIO had no significant effect on the model fit. Furthermore, PORTFOLIO itself was not significant. Hence, there is no support for hypothesis H<sub>13b</sub>. As highlighted in models 11a and 12a, managerial human capital and technical capability were negatively associated with the likelihood of having purchased the surveyed business. Finally, while there appeared to be a significant and positive relationship between the age of the entrepreneur and the likelihood of having purchased the surveyed business, this relationship was not linear. This is evident from the significance of the age<sup>2</sup> variable. Hence, while older entrepreneurs appear to be more likely to purchase a business, beyond a certain age, this relationship is reversed.

**Table 7.23 Logistic Regression Models of Variables associated with the Purchase of a Business as the Mode of Exploitation for the Surveyed Business by Novice and Habitual Entrepreneurs**

Independent Variables	Model 10a <sup>a</sup> :	Model 11a <sup>a</sup> :	Model 12a <sup>a</sup> :
	$\beta$	$\beta$	$\beta$
<b>GHK</b>			
Age	0.01	0.01	0.01
Age <sup>2</sup>	-0.01 *	-0.01 *	-0.01 *
Gender	-0.29	-0.28	-0.30
Education	0.16	0.16	0.16
Managerial human capital	-0.06 **	-0.06 **	-0.06 **
Managerial capability	0.04	0.05	0.04
Technical capability	-0.36 **	-0.36 **	-0.36 **
<b>SHK<sub>E</sub></b>			
Entrepreneurial capability	-0.29 *	-0.29 *	-0.29 *
Parent business owners	0.41	0.42 †	0.40 †
Development	-0.04	-0.04	-0.05
Search Intensity	0.01	0.01	0.01
HABITUAL	-	-0.06	-
TOTAL	-	-	0.02
Model $\chi^2$	35.97 ***	36.03 ***	36.04 ***
-2 log likelihood	485.5	485.5	485.5
Overall predictive accuracy	84.12	84.12	84.29
Cox & Snell R square	0.06	0.06	0.06
Nagelkerke R square	0.10	0.10	0.10
n	592	592	592

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001.

<sup>a</sup> VIF scores for all models were well below the maximum level of 10 (maximum score of 2.84).

<sup>b</sup> Not significant.

**Table 7.24    Logistic Regression Models of Variables associated with the Purchase of a Business as the Mode of Exploitation for the Surveyed Business by Serial and Portfolio Entrepreneurs**

Independent Variables	Model 7b <sup>a</sup> : $\beta$	Model 8b <sup>a</sup> : $\beta$
<b><i>GHK</i></b>		
Age	0.04 †	0.04 †
Age <sup>2</sup>	-0.01 *	-0.01 *
Gender	-0.66	-0.61
Education	0.11	0.11
Managerial human capital	-0.05 †	-0.05 †
Managerial capability	0.11	0.12
Technical capability	-0.50 **	-0.50 **
<b><i>SHK<sub>E</sub></i></b>		
Entrepreneurial capability	-0.24	-0.23
Parent business owners	0.36	0.35
Development	-0.01	-0.01
Search Intensity	0.00	0.00
PORTFOLIO <sup>b</sup>	-	-.25
Model $\chi^2$	27.93 **	28.50 **
-2 log likelihood	240.2	239.7
Overall predictive accuracy (%)	84.49	84.49
Cox & Snell R square	0.09	0.09
Nagelkerke R square	0.15	0.15
n	303	303

Notes. †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ; \*\*\*\*  $p < 0.0001$   
No significant differences between novice and serial or novice and portfolio entrepreneurs were detected.  
<sup>a</sup> VIF scores for both models were well below the maximum appropriate level of 10 (maximum score of 3.46).  
<sup>b</sup> Reference category serial entrepreneurs.

## 7.4 CONCLUSION

Table 7.25 summarises the findings of the bivariate and multivariate analyses relating to information search, as well as, opportunity identification, pursuit and exploitation. Many of the relationships detected by the bivariate analyses were supported by the multivariate analyses. Table 7.25 shows that there is no support for hypotheses  $H_{10a}$  and  $H_{10b}$  that, respectively, habitual and portfolio entrepreneur would search for less information than their novice and serial counterparts. Despite these findings, however, supporting hypotheses  $H_{11a}$  and  $H_{11b}$ , both habitual and portfolio entrepreneurs were able to identify significantly more opportunities in the 5 years prior to the study than novice and serial entrepreneurs. Furthermore, supporting hypotheses  $H_{12a}$  and  $H_{12b}$ , habitual entrepreneurs, particularly portfolio

entrepreneurs, were more likely to pursue an identified opportunity than their novice or serial counterparts. Finally, in contrast to the bivariate evidence, there was no support for the hypothesis that habitual entrepreneurs would be more likely to opt for the purchase of a business as a mode of opportunity exploitation (i.e., hypothesis H<sub>13a</sub>). There was also no support for hypothesis H<sub>13b</sub>.

**Table 7.25 Summary of Findings Relating to Information Search and Opportunity Identification, Pursuit and Exploitation**

Hypothesis Number and Description	Bivariate Results	Multivariate Results
H <sub>10a</sub> Info. Search <sub>habitual</sub> < Info. Search <sub>novice</sub>	Not supported	Not supported
H <sub>10b</sub> Info. Search <sub>portfolio</sub> < Info. Search <sub>serial</sub>	Not supported	Not supported
H <sub>11a</sub> Opp. Identification <sub>habitual</sub> > Opp. Identification <sub>novice</sub>	Supported	Supported
H <sub>11b</sub> Opp. Identification <sub>portfolio</sub> > Opp. Identification <sub>serial</sub>	Supported	Supported
H <sub>12a</sub> Opp. Pursuit <sub>habitual</sub> > Opp. Pursuit <sub>novice</sub>	Supported	Supported
H <sub>12b</sub> Opp. Pursuit <sub>portfolio</sub> > Opp. Pursuit <sub>serial</sub>	Supported	Supported
H <sub>13a</sub> Purchase <sub>habitual</sub> > Purchase <sub>novice</sub>	Some support	Not supported
H <sub>13b</sub> Purchase <sub>portfolio</sub> < Purchase <sub>serial</sub>	Not supported	Not supported

Overall, the above findings suggest that there is a relationship between the extent and nature of business ownership experience and information search as well as opportunity identification, pursuit and exploitation. Habitual entrepreneurs, particularly portfolio entrepreneurs, appear to be able to identify more opportunities for creating or purchasing a business in a given period than novice or serial entrepreneurs. Furthermore, habitual and portfolio entrepreneurs were more likely to pursue identified opportunities (i.e., commit time and resources to evaluating the opportunity). The following chapter explores differences between the types of entrepreneurs with regard to the performance of the entrepreneurs and their surveyed business.

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## **CHAPTER EIGHT**

### **FIRM AND ENTREPRENEUR PERFORMANCE BY TYPE OF ENTREPRENEUR**

#### **8.1 INTRODUCTION**

The performance of surveyed firms owned by novice and habitual as well as serial and portfolio entrepreneurs are examined with regard to several financial and non-financial performance indicators. In addition, a number of indicators relating to the entrepreneurs' performance are discussed. The structure of the chapter is as follows. In section 8.2, surveyed firm performance differences between novice and habitual entrepreneurs, and then serial and portfolio entrepreneurs, are examined with within a bivariate statistical framework. Firm performance is monitored with regard to the surveyed business in terms of two weighted performance measures, sales and employment growth, as well as profitability relative to competitors. This is followed by a discussion of entrepreneur performance with regard to the standard of living in relation to when the surveyed business was first started / purchased and money taken out of the business(es) owned. In Section 8.3, firm and then entrepreneur performance differences are examined within a multivariate statistical framework. Finally, conclusions are provided in Section 8.4.

#### **8.2 SURVEYED FIRM AND ENTREPRENEUR PERFORMANCE: BIVARIATE ANALYSIS**

This section presents the findings relating to differences reported by novice and habitual and then serial and portfolio entrepreneurs in terms of various dimensions of performance within a bivariate framework.

##### **8.2.1 Surveyed Firm Performance**

Table 8.1 shows that no significant differences were detected between novice and habitual entrepreneurs with respect to the two weighted performance measures, and profit relative to competitors.



**Table 8.1 Performance of the Surveyed Business Reported by Novice and Habitual Entrepreneurs**

Variable	Novice (n = 294)	Habitual (n = 348)	t- statistic	Df	Sig. level (2-tailed)
Weighted performance I <sup>a</sup>	11.95	11.55	1.24	640	0.22
Weighted performance II <sup>b</sup>	12.97	12.96	0.30	640	0.98
Profit relative to competitors <sup>c</sup>	3.42	3.39	0.51	640	0.61

Notes. <sup>a</sup> Weighted Performance I relates to the original Naman and Slevin (1993) measure.

<sup>b</sup> Weighted Performance II relates to the extended measure.

<sup>c</sup> The following scale was used: (1) very poor; (2) poor; (3) about average; (4) good; and (5) very good.

The employment contribution made by each type of entrepreneur between 1996 and 2001 is summarised in Table 8.2. In total, firms owned by habitual entrepreneurs had lost just under 300 jobs. In comparison, firms owned by novice entrepreneurs had lost 88.5 jobs. Among those firms that had created jobs during the period in question, those owned by the habitual entrepreneurs had created just under 2,110 jobs compared with just under 670 jobs by firms owned by novice entrepreneurs. The top 4% fastest growing businesses owned by habitual entrepreneurs had created 802.25 (i.e., 38.03%) of all jobs created. In comparison, firms owned by novice entrepreneurs had created 376.5 (i.e., 55.43) of all jobs created.

**Table 8.2 Total Employment Contribution of Surveyed Firms between 1996 and 2001 by Type of Entrepreneur <sup>a</sup>**

Variable	Novice (n=274)	Habitual (n=313)	Serial (n=132)	Portfolio (n=181)
Gross absolute total employment loss in firms reporting total employment losses	88.50	299.75	86.5	213.25
Gross absolute total employment growth in total employment growing firms	679.25	2,106	1,031.25	1,074.75
Gross absolute total employment growth reported by the 4% fastest total employment growing firms <sup>c</sup>	376.50	802.25	822.00 <sup>b</sup>	500.50
Proportion of total employment growth reported by the 4% fastest total employment growing firms	55.43	38.03	79.71 <sup>b</sup>	46.57

Notes. <sup>a</sup> Full-time, part-time and casual employees were taken into account in the measure of total employment by scoring full-time, part-time and casual employees as 1, 0.5 and 0.25, respectively.

<sup>b</sup> One serial entrepreneur reported a growth of 640 jobs (i.e., 62% of all employment growth in the serial entrepreneurs sub-sample).

<sup>c</sup> Among the fastest growing 4% of firms, firms owned by habitual entrepreneurs reported a significantly higher number of jobs created (i.e., 101 jobs) than novice entrepreneurs (i.e., 31 jobs) ( $p < 0.01$ ). There was no significant difference between the 4% fastest employment growing firms owned by serial and portfolio entrepreneurs in terms of the average number of jobs created (137 and 63 jobs, respectively). These differences were tested using non-parametric Mann-Whitney U tests due to the small number of cases involved.

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Finer level employment and sales change reported by novice and habitual entrepreneur firms are reported in Table 8.3. No significant differences were detected between the two groups in terms of absolute total employment change; absolute total employment change standardised by business age, or the percentage change in total employment. Firms owned by habitual entrepreneurs that had reported job losses lost significantly more jobs than their novice counterparts (i.e., 3.75 jobs lost compared with 1.51 jobs lost). However, job creating firms owned by habitual entrepreneurs reported that they had created more jobs (i.e., 12.66 jobs) than their novice counterparts (i.e., 5.19 jobs). This difference was only weakly significant. Table 8.4 reports the number of firms that reported job losses, no change in employment and job creation. While there was an overall significant difference between novice and habitual entrepreneurs, this difference was largely attributable to the larger proportion of firms owned by novice entrepreneurs that had reported no change in total employment over the period of 1996 to 2001. With respect to sales growth (Table 8.3), no significant differences between the two groups were detected in terms of the absolute change in sales standardised by employment, or the percentage change in sales over the period of 1996 to 1999. Habitual entrepreneurs did, however, report significantly higher rates of growth in terms of the absolute change in sales (£367,724 compared with £149,518); absolute change in sales standardised by business age (£28,971 compared with £13,067); and absolute change in sales standardised by both employment at the start of the period and business age (£7,106 compared with £3,141).

**Table 8.3 Employment and Sales Growth of the Surveyed Businesses Reported by Novice and Habitual Entrepreneurs**

Variable	Novice (n = 232)	Habitual (n = 292)	t- statistic	Df	Sig. level (2-tailed)
<i>Employment Growth (1996-2001)<sup>a</sup></i>					
Absolute total employment change	2.29	6.09	-1.44	522	0.15
Absolute total employment change standardised by business age	0.19	0.49	-1.37	522	0.17
Percentage change in total employment	37	80	-1.12	522	0.26
Number of jobs lost by firms reporting total employment losses	1.51	3.75	3.09	136	0.00
Number of jobs created by firms reporting total employment growth	5.19	12.66	-1.63	296	0.10
<i>Sales Growth (1996-1999)</i>					
Absolute change in sales	149,518	367,724	-1.97	463	0.05
Absolute change in sales standardised by business age	13,067	28,971	-1.97	463	0.05
Absolute change in sales standardised by employment in 1996	33,731	67,519	-1.45	463	0.15
Absolute change in sales standardised by employment in 1996 then by business age	3,141	7,106	-1.68	463	0.09
Percentage change in sales	110	128	-0.43	463	0.67

Note. <sup>a</sup> Full-time, part-time and casual employees were taken into account in the measure of total employment by scoring full-time, part-time and causal employees as 1, 0.5 and 0.25, respectively.

**Table 8.4 Total Employment Contribution of Surveyed Firms Owned by Novice and Habitual Entrepreneurs over the 1996 to 2001 Period**

Variable	Novice		Habitual		$\chi^2$ statistic	Sig. level (2-tailed)
	No.	%	No.	%		
Number of firms reporting total employment losses	58	21.2	80	25.6	7.69	0.021
Number of firms reporting no change in total employment size	85	31.0	66	21.1	7.55	0.008
Number of firms reporting total employment growth	131	47.8	167	53.4	1.80	0.186

Table 8.5 shows that significant differences were detected between serial and portfolio entrepreneurs in terms of weighted performance I, and profit relative to competitors. However, portfolio entrepreneurs reported a significantly higher weighted performance II than serial entrepreneurs.

**Table 8.5 Performance of the Surveyed Business Reported by Serial and Portfolio Entrepreneurs**

Variable	Serial (n = 151)	Portfolio (n = 197)	t- statistic	Df	Sig. level (2-tailed)
Weighted performance I <sup>a</sup>	11.45	11.62	-0.38	346	0.71
<b>Weighted performance II <sup>b</sup></b>	<b>12.60</b>	<b>13.24</b>	<b>-1.71</b>	<b>346</b>	<b>0.09</b>
Profit relative to competitors <sup>c</sup>	3.36	3.41	-0.45	346	0.66

Notes. <sup>a</sup> Weighted Performance I relates to the original Naman and Slevin (1993) measure.

<sup>b</sup> Weighted Performance II relates to the extended measure.

<sup>c</sup> The following scale was used: (1) very poor; (2) poor; (3) about average; (4) good; and (5) very good.

Table 8.6 shows that no significant differences between serial and portfolio entrepreneurs with regard to employment and sales change of the surveyed firms were detected. Further, Table 8.7 shows that there was no significant difference in the proportion of firms owned by serial and portfolio entrepreneurs who had reported either job losses, no change in employment size or job creation.

**Table 8.6 Employment and Sales Change of the Surveyed Businesses Reported by Serial and Portfolio Entrepreneurs**

Variable	Serial (n = 124)	Portfolio (n = 168)	t- statistic	Df	Sig. level (2-tailed)
<i>Employment Growth (1996-2001)<sup>a</sup></i>					
Absolute total employment change 1996-2001	7.60	4.97	0.56	290	0.58
Absolute total employment change 1996-2001 standardised by business age	0.66	0.36	0.78	290	0.44
Percentage change in total employment 1996-2001	50	102	-0.78	290	0.44
Number of jobs lost by firms reporting total employment losses	2.62	4.54	1.60	78	0.12
Number of jobs created by firms reporting total employment growth	14.91	11.07	0.47	165	0.64
<i>Sales Growth (1996-1999)</i>					
Absolute change in sales 1996-2001	233,733	465,091	-1.24	257	0.22
Absolute change in sales 1996-2001 standardised by business age	22,218	33,879	-0.89	257	0.37
Absolute change in sales 1996-2001 standardised by employment in 1996	53,250	77,889	-0.60	257	0.55
Absolute change in sales 1996-2001 standardised by employment in 1996 then by business age	7,795	6,605	0.29	257	0.77
Percentage change in sales 1996-2001	147	114	0.65	257	0.52

Note. <sup>a</sup> Full-time, part-time and casual employees were taken into account in the measure of total employment by scoring full-time, part-time and casual employees as 1, 0.5 and 0.25, respectively.

**Table 8.7 Total Employment Contribution of Surveyed Firms Owned by Serial and Portfolio Entrepreneurs over the 1996 to 2001 Period**

Variable	Serial		Portfolio		X <sup>2</sup> statistic	Sig. level (2-tailed)
	No.	%	No.	%		
Number of firms reporting total employment losses	33	25.0	47	26.0	0.37 0.04	0.831 0.896
Number of firms reporting no change in total employment size	30	22.7	36	19.9	0.37	0.576
Number of firms reporting total employment growth	69	52.3	98	54.1	0.11	0.819

### 8.2.2 Entrepreneur Performance

No significant differences were detected between novice and habitual entrepreneurs with regard to the standard of living relative to when the respondent first started or purchased the surveyed business. Habitual entrepreneurs, however, had taken significantly greater amounts of money out of the business(es) they currently owned than novice entrepreneurs (£36,660 and £28,036, respectively). This finding is not particularly surprising, as portfolio entrepreneurs among the habitual entrepreneurs group, by definition, own multiple businesses. To control for this effect, the amount of money taken out was standardised by the number of businesses currently owned. Table 8.8 shows that when standardised for the number of businesses currently owned, habitual entrepreneurs had taken significantly smaller amounts of money out of their business(es) than their novice counterparts (£21,462 and £28,036, respectively). Unfortunately, in this study it was not possible to identify the size of each of the businesses owned by portfolio entrepreneurs. It may be the case that portfolio entrepreneurs own several smaller businesses. Consequently, measures of money taken out standardised by the number of businesses owned should be interpreted with caution.

Table 8.9 shows that portfolio entrepreneurs reported a significantly higher standard of living relative to their serial counterparts. Before controlling for the number of businesses currently owned, portfolio entrepreneurs reported that they had taken significantly more money out of the business(es) they owned in the previous 12

months than serial entrepreneurs (£44,873 compared with £25,944). When the amount of money taken out was standardised by the number of business currently owned, however, portfolio entrepreneurs reported significantly smaller amounts of money taken out over the previous 12 months than serial entrepreneurs (£18,028 compared with £25,944).

**Table 8.8 Entrepreneur Performance Reported by Novice and Habitual Entrepreneurs**

Variable	Novice (n = 294)	Habitual (n = 348)	t- statistic	Df	Sig. level (2-tailed)
Standard of living relative to when first started / purchased this business <sup>a</sup>	3.78	3.82	-0.67	640	0.50
Money taken out I <sup>b</sup>	28,036	36,660	-3.42	640	0.00
Money taken out II <sup>c</sup>	28,036	21,462	3.31	640	0.00

Notes. <sup>a</sup> The following scale was used: (1) very poor; (2) poor; (3) about average; (4) good; and (5) very good.

<sup>b</sup> Money taken out I relates to the amount of money taken out of all businesses currently owned over the past 12 months.

<sup>c</sup> Money taken out II relates to the Money taken out I measure standardised by the number of businesses currently owned.

**Table 8.9 Entrepreneur Performance Reported by Serial and Portfolio Entrepreneurs**

Variable (factor scores)	Serial (n = 151)	Portfolio (n = 197)	t- statistic	Df	Sig. level (2-tailed)
Standard of living relative to when first started/purchased this business <sup>a</sup>	3.70	3.92	-2.08	346	0.04
Money taken out I <sup>b</sup>	25,944	44,873	-5.32	346	0.00
Money taken out II <sup>c</sup>	25,944	18,028	3.48	346	0.00

Notes. <sup>a</sup> The following scale was used: (1) very poor; (2) poor; (3) about average; (4) good; and (5) very good.

<sup>b</sup> Money taken out I relates to the amount of money taken out of all businesses currently owned over the past 12 months.

<sup>c</sup> Money taken out II relates to the Money taken out I measure standardised by the number of businesses currently owned.

### 8.2.3 Summary

Consistent with previous studies (Birley and Westhead, 1993b; Kolvereid and Bullvag, 1993; Westhead and Wright, 1998a, b), the bivariate analysis provides mixed evidence. Habitual entrepreneurs did not out-perform novice entrepreneurs in terms of the surveyed business, but they did report higher levels of sales growth during the given period. Furthermore, habitual entrepreneurs were able to take out

money in the given period relative to their novice counterparts. However, when this amount was standardised by the number of businesses currently owned, habitual entrepreneurs took out significantly less money than novice entrepreneurs.

There were few significant differences between serial and portfolio entrepreneurs. Portfolio entrepreneurs did report a significantly higher standard of living compared to when they first started or established the surveyed business than serial entrepreneurs. The results relating to the amount of money taken out of business(es) owned mirrored earlier findings relating to habitual entrepreneurs. Portfolio entrepreneurs did take out a significantly larger amount of money than their serial counterparts. When this amount was standardised by the number of businesses currently owned, portfolio entrepreneurs actually took out less money per business than serial entrepreneurs.

### **8.3 SURVEYED FIRM AND ENTREPRENEUR PERFORMANCE: MULTIVARIATE ANALYSIS**

The bivariate results discussed above provide an initial indication of the extent and nature of performance-based differences between novice and habitual entrepreneurs and serial and portfolio entrepreneurs. Consistent with previous chapters where results have been presented, it was deemed necessary to supplement this initial analysis with multivariate analysis, allowing the researcher to control for other factors that are expected to influence performance based on theory and previous empirical studies. As in the previous chapter, a confirmatory forced entry OLS regression approach was utilised.

Appendix VI provides the means and standard deviations for the independent and control variables. Correlation coefficients between the independent and control variables are reported in Appendix VI. Also, VIF scores are reported. This evidence suggests that the multivariate OLS models will not be seriously distorted by multicollinearity.

Firm performance is often deemed sensitive by respondents, often resulting in a reluctance to answer performance questions. This problem was encountered in this

study. Performance measures relating to satisfaction appear to have been seen as involving less sensitive information by the respondents than those relating to sales and profitability. If the analysis relates to the respondents that answered all performance questions, there would be a considerable reduction in the working sample size. A valid sample for each performance dependent variable was selected. Consequently, the valid sample of respondents varies between the selected performance models. A correlation matrix and VIF scores was computed for each sample. The correlation matrix and VIF scores relating to the first set of models is reported for simplicity in Appendix VI. A comparison of each of the correlation matrices and VIF scores revealed that there were no major inconsistencies resulting from varying sample sizes.

To determine the extent to which the business ownership experience variables (i.e., habitual versus novice entrepreneurs and portfolio versus serial entrepreneur) ‘explained’ performance, as in the previous chapter, two OLS regression models were conducted. The first models represent the control models (i.e., Models 1i – 8i), whereby the independent variables relating to business ownership experience were excluded. Variables relating to general and specific human capital other than business ownership experience, the environment, firm-characteristics and strategy were included in these control models. The following relationships were assumed in each control model:

Control Model:

$$\text{PERFORMANCE} = f(\text{GHK, SHK}_E, \text{SHK}_V, \text{INFORMATION SEARCH INTENSITY, ENVIRONMENT, STRATEGY, FIRM-SPECIFIC})$$

Where;

ENVIRONMENT is measured in terms of the respondents expectation of what will happen to the number of competitors in the next five years (*Expectation of competition*), the extent to which the respondent felt the business was changing rapidly (*Business change*), and three industry dummy variables (*Agriculture, Manufacturing and Construction*, with the reference category selected being services) (See Table 5.6).



STRATEGY was measured in terms of three broad strategies (i.e., *Differentiation*, *Innovation* and *Cost-based*) (see Table 5.13).

FIRM-SPECIFIC characteristics were measured in terms of employment size (i.e., *10-49 employees*, *50 or more employees* and, *1-9 employees* as the reference category), business age (i.e., *1-5 years old*, *6-10 years old* and *11 years or older* as the reference category), mode of opportunity exploitation (i.e., *Purchased* or not), and the number of initial equity partners (i.e., *Number of equity partners*) (see Table 5.6).

Details of GHK, SHK<sub>E</sub> and SHK<sub>V</sub> and INFORMATION SEARCH INTENSITY were provided in section 6.3 and Table 5.5.

In chapter 6, the data were explored to establish if novice and habitual entrepreneurs could be distinguished in terms of elements of general and specific human capital other than business ownership experience. Business ownership experience may, therefore, be endogenous in the performance equations. To formally check for endogeneity, a Hausman test was conducted (Hausman, 1978, 1983). For all performance equations, the null hypothesis of no endogeneity could not be rejected at standard significance levels.

In the full models, in addition to the control variables discussed above, the business ownership experience independent variables were introduced sequentially. Three sets of independent variables relating to business ownership experience were considered. The first two of these relate to HABITUAL and TOTAL (as discussed in Chapter 6 and 7). The third set of independent variable was operationalised to capture the learning effects from failure and success discussed in Section 4.4. Four independent dummy variables were considered: HABITUAL<sub>failed</sub>, HABITUAL<sub>successful</sub>, HABITUAL<sub>Mixed (no exit)</sub>, and HABITUAL<sub>Mixed (with exit)</sub>. HABITUAL<sub>failed</sub> represents a dummy variable which took a value of '1' if the habitual entrepreneur reported that the proportion of business which had failed (i.e., had closed/sold a business because the performance was too low in relation to the entrepreneur's expectations or had faced bankruptcy, liquidation or receivership) was greater than those which had been sold / closed because there was an opportunity to

realise a capital gain or a better opportunity presented itself; and ‘0’ otherwise.  $HABITUAL_{successful}$  took a value of ‘1’ if the habitual entrepreneur reported that the proportion of business which had failed (i.e., had closed/sold a business because the performance was too low in relation to the entrepreneur’s expectations or had faced bankruptcy, liquidation or receivership) was less than those which had been sold / closed because there was an opportunity to realise a capital gain or a better opportunity presented itself; and ‘0’ otherwise.  $HABITUAL_{Mixed (no exit)}$  took a value of ‘1’ if the habitual entrepreneur had not closed or sold any businesses (i.e., a pure portfolio entrepreneur). And  $HABITUAL_{Mixed (with exit)}$  took a value of ‘1’ if the habitual entrepreneur has closed or sold the same number of businesses due to failure and success. The reference category for all four dummy variables was the novice entrepreneur group.

Based on the above definitions of the control and independent variables, the following relationships were assumed and tested for each performance dependent variable in turn:

PERFORMANCE = $f$	(GHK, SHK <sub>E</sub> , SHK <sub>V</sub> , INFORMATION SEARCH INTENSITY, ENVIRONMENT, STRATEGY, FIRM-SPECIFIC, HABITUAL)
PERFORMANCE = $f$	(GHK, SHK <sub>E</sub> , SHK <sub>V</sub> , INFORMATION SEARCH INTENSITY, ENVIRONMENT, STRATEGY, FIRM-SPECIFIC, TOTAL)
PERFORMANCE = $f$	(GHK, SHK <sub>E</sub> , SHK <sub>V</sub> , INFORMATION SEARCH INTENSITY, ENVIRONMENT, STRATEGY, FIRM-SPECIFIC, $HABITUAL_{failed}$ , $HABITUAL_{successful}$ , $HABITUAL_{Mixed (No exit)}$ , $HABITUAL_{Mixed (With exit)}$ )

For the models carried out on the habitual entrepreneur sub-sample, one set of control models as described above and one set of models containing the PORTFOLIO independent variable is presented. The full models were specified as follows:

$$\text{PERFORMANCE} = f \quad (\text{GHK, SHK}_E, \text{SHK}_V, \text{ENVIRONMENT, STRATEGY, FIRM-SPECIFIC, PORTFOLIO})$$

In addition to the analysis carried out to test the hypotheses developed in Chapter 4, it was also deemed appropriate to check for the possibility of similarities and differences between novice and serial entrepreneurs and between novice and portfolio entrepreneurs. The results of these checks are reported in Appendix VII. Significant differences between the two pairs are also reported in the footnotes following each model reported in this chapter. Further discussion of these models is provided below.

Before doing so, however, it was deemed necessary to examine the relationship between the various performance measures used. As intimated earlier, there is considerable heterogeneity in the selection of performance measures across studies. The correlation matrix in Table 8.10 illustrates the extent to which the performance measures used in this study were related to each other. Table 8.8 shows that there is a strong correlation particularly between Weighted Performance I, Weighted performance II, Profit relative to Competitors, Standard of Living, Money taken out I and Money taken out II. The measures relating to growth (i.e., absolute change in employment, absolute change in sales, percentage change in employment, percentage change in sales) appear to be less strongly correlated with the other performance measures. This suggests a need to distinguish between growth and operating performance (in term of the firm and/or the entrepreneur). Despite the significant correlation among some of the performance measures, the discussion below is based on regression models run for each performance measure. This allows the reader to determine the extent to which the independent variable (i.e., ownership experience) and the control variables are consistently related to the performance measures.

Table 8.10 Correlation Matrix Relating to the Performance Variables

Variable	Mean	Standard deviation	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Weighted performance I <sup>a</sup>	13.06	0.86	1.00								
2. Weighted performance II <sup>b</sup>	11.74	3.50	0.86****	1.00							
3. Profit relative to competitors	3.44	0.94	0.47****	0.45****	1.00						
4. Absolute total employment change (log of)	1.59	0.11	0.10*	0.07†	0.06	1.00					
5. Percentage change in total employment	71.15	470.47	0.10*	0.06†	0.06	0.19****	1.00				
6. Absolute change in sales (log of)	6.32	0.32	0.19****	0.15***	0.10*	0.32****	0.07†	1.00			
7. Percentage change in sales	133.05	472.53	0.14***	0.14***	0.11*	0.06	0.11*	0.11*	1.00		
8. Standard of living	3.84	2.38	0.35****	0.38****	0.42****	0.04	0.03	0.13**	0.11*	1.00	
9. Money taken out I <sup>c</sup>	35,718	32,957	0.35****	0.32****	0.33****	0.29****	0.14**	0.09*	0.16****	0.40****	1.00
10. Money taken out II <sup>d</sup>	26,853	26,844	0.33****	0.28****	0.31****	0.17****	0.08*	0.15***	0.18****	0.35****	0.83****

Notes. †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ; \*\*\*\*  $p < 0.0001$   
n=435

<sup>a</sup> Weighted Performance I relates to the original Naman and Slevin (1993) measure.

<sup>b</sup> Weighted Performance II relates to the extended measure.

<sup>c</sup> Money taken out I relates to the amount of money taken out of all businesses currently owned over the past 12 months.

<sup>d</sup> Money taken out II relates to the Money taken out I measure standardised by the number of businesses currently owned.

### 8.3.1 Surveyed Firm Performance

#### 8.3.1.1 Weighted Performance Index I

Table 8.11 reports regression models relating to the dependent variable corresponding to Naman and Slevin's (1993) weighted performance index. As explained above, Control Model 1i relates to the model where all variables except the business ownership experience variables are included. This is followed by Models 1a, 1b and 1c, which relate to those models where the HABITUAL, TOTAL and then the HABITUAL<sub>failed</sub>, HABITUAL<sub>successful</sub>, HABITUAL<sub>Mixed (No exit)</sub> and HABITUAL<sub>Mixed (With exit)</sub> variables are included, respectively. Both the control model 1 and Models 1a, 1b and 1c were found to be significant and had an adjusted  $R^2$  of 0.15 (the adjusted  $R^2$  was 0.15 for Model 1b). By examining the change in  $R^2$  for Model 1b and 1c (in relation to the control model), it is evident that the inclusion of the TOTAL and HABITUAL<sub>failed</sub>, HABITUAL<sub>successful</sub>, HABITUAL<sub>Mixed (No exit)</sub> and HABITUAL<sub>Mixed (With exit)</sub> business ownership experience variables did not result in a significant improvement in the models, despite HABITUAL<sub>failed</sub> being significantly and negatively associated with performance. There was, however, a significant increase in the model  $R^2$  resulting from the addition of the HABITUAL variable. Based on the significance of the coefficient for this variable, it appears that habitual entrepreneurs are significantly and negatively associated with firm performance. Consistent with the bivariate evidence, hypotheses  $H_{14a}$  cannot be supported. Further, neither habitual entrepreneurs who had been successful nor those who had failed outperformed their novice counterparts. Consequently, there is no support for  $H_{14c}$  or  $H_{14d}$ .

Several control variables were significantly associated with the dependent variable. Lower levels of performance were reported by older and female entrepreneurs and those reporting high levels of technical capability. Conversely, high levels of performance were associated with entrepreneurs highlighting managerial and entrepreneurial capabilities, a firm size between 10 and 49 employees (as opposed to 0 and 9 employees), and being motivated by financial reasons. These results were consistent across all models (i.e., Model 1a, 1b and 1c).

Differences between serial and portfolio entrepreneurs are reported in Table 8.12 with regard to weighted firm performance. Both the Control Model 1ii and Model 1d were significant, with an adjusted  $R^2$  of 0.14. By comparing control Model 1ii with Model 1d, one can see that the inclusion of the PORTFOLIO variable has no impact on the model. This finding is mirrored by the non-significance of the PORTFOLIO variable in Model 1d. This finding is consistent with the bivariate analysis presented earlier. Consequently, hypothesis  $H_{14b}$  is not supported. In line with the findings relating to the full sample (see Table 8.11), those entrepreneurs who were younger, were female, and reported high levels of technical capability, reported lower levels of performance. Entrepreneurs reporting high levels of managerial and entrepreneurial capabilities, and financial motives reported higher performance. One additional variable was significantly related to performance in the habitual only sample, which did not come through in the full sample. Entrepreneurs who had (a) parent(s) who were business owners reported lower levels of performance ( $p < 0.10$ ). While having at least one parent who was / is a business owner may provide the entrepreneur indirect access to knowledge relating to entrepreneurship, it may also induce over-confidence. Entrepreneurs may repeat patterns of behaviour that have been sub-consciously learnt but which are not necessarily best practice.

#### 8.3.1.2 Extended Weighted Performance Index II

The Naman and Slevin weighted performance index was extended. Several items were added to the original weighted performance index to reflect what was perceived to be a more complete view of performance (see Table 5.5). Table 8.13 reports findings relating to OLS models where the dependent variable was the extended weighted performance index (i.e., Weighted Performance II). Both Control Model 2i and Models 2a, 2b and 2c were highly significant, with an adjusted  $R^2$  of 0.19. The inclusion of none of the business ownership experience variables had a significant impact on the model fit. Further, the non-significance of the HABITUAL, and TOTAL variables suggests that there was no support for hypothesis  $H_{14a}$ . These findings are consistent with the results from the bivariate analysis. As habitual entrepreneurs who had failed ( $HABITUAL_{failed}$ ) and those who had been successful ( $HABITUAL_{successful}$ ) reported lower levels of performance than novice

entrepreneurs, there is no support for hypotheses  $H_{14c}$  and  $H_{14d}$ . Several of the control variables were found to be consistently and significantly related to the extended performance measure. Once again, the perception of a high entrepreneurial capability, managerial capability, and being financially motivated to start or purchase the surveyed business, were associated with higher performance. In addition, the firm size being between 10 and 49 employees (as opposed to being smaller) was found to be associated with higher performance. Rapid business change and operating in the agricultural sector (as opposed to services) were associated with lower performance.

Table 8.12 reports models relating to the habitual entrepreneur sub-sample. Both the Control Model 2ii and Model 2d were highly significant with an adjusted  $R^2$  of 0.19. The inclusion of PORTFOLIO did not result in an improvement in the model, and the variable was insignificant. Consequently, there is no support for hypothesis  $H_{14b}$ . This finding contrasts with the results from the bivariate analysis, where portfolio entrepreneurs reported significantly higher levels of extended weighted performance II. Among the control variables, managerial capability, entrepreneurial capability, financial motives, and the adoption of a differentiation strategy, were associated with higher performance. Having at least one parent who was / is a business owner was associated with lower extended weighted performance.

**Table 8.11 OLS Regression Relating to the Weighted Performance Index I (Total Sample)**

Independent Variables	Control Model 1i		Model 1a		Model 1b		Model 1c	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	-0.12	*	-0.12	*	-0.12	*	-0.11	*
Age <sup>2</sup>	0.02		0.02		0.02		0.02	
Gender	0.09	†	0.10	†	0.09	†	0.09	
Education	-0.05		-0.04		-0.04		-0.04	
Managerial human capital	-0.03		-0.03		-0.03		-0.03	
Managerial capability	0.20	****	0.20	****	0.21	****	0.21	****
Technical capability	-0.10	†	-0.12	*	-0.10	†	-0.12	*
Entrepreneurial capability	0.22	****	0.21	****	0.22	****	0.21	****
Development	-0.04		-0.04		-0.05		-0.03	
Parent business owners	-0.09	†	-0.08		-0.08		-0.08	
Business similarity	-0.04		-0.04		-0.04		-0.05	
Task similarity	-0.06		-0.06		-0.06		-0.06	
Approval	-0.01		-0.02		-0.01		-0.02	
Welfare	-0.01		-0.01		-0.01		-0.01	
Personal Development	0.06		0.07		0.06		0.06	
Independence	-0.03		-0.03		-0.03		-0.03	
Financial motives	0.12	*	0.12	*	0.12	*	0.12	*
Reactive motives	0.07		0.07		0.07		0.06	
Expectation of competition	-0.03		-0.03		-0.03		-0.04	
Business change	-0.07		-0.07		-0.07		-0.06	
Agriculture	-0.06		-0.06		-0.06		-0.06	
Manufacturing	0.02		0.01		0.01		0.01	
Construction	-0.08		-0.08		-0.08		-0.07	
Differentiation strategy	0.07		0.07		0.07		0.07	
Innovation strategy	0.04		0.05		0.04		0.04	
Cost-based strategy	-0.01		-0.01		-0.01		-0.02	
10-49 employees	0.09	†	0.10	†	0.10	†	0.10	†
50 or more employees	-0.02		-0.02		-0.02		-0.01	
Business 1-5yrs old	-0.02		-0.02		-0.02		-0.03	
Business 6-10 yrs old	0.01		0.02		0.01		0.02	
Purchased business	-0.04		-0.04		-0.04		-0.04	
No. of equity partners	-0.04		-0.05		-0.05		-0.05	
HABITUAL	-		-0.08	†	-		-	
TOTAL	-		-		-0.04		-	
HABITUAL <sub>FAILED</sub>	-		-		-		-0.10	†
HABITUAL <sub>SUCCESSFUL</sub>	-		-		-		-0.06	
HABITUAL <sub>MIXED (NO EXIT)</sub>	-		-		-		-0.06	
HABITUAL <sub>MIXED (WITH EXIT)</sub>	-		-		-		0.04	
F-value	3.16	****	3.16	****	3.08	****	2.97	****
R <sup>2</sup>	0.23		0.23		0.23		0.24	
Adjusted R <sup>2</sup>	0.16		0.16		0.15		0.16	
Change in R <sup>2</sup>			0.01	†	0.00		0.01	
N	378		378		378		378	

Note. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001



**Table 8.12 OLS Regression Relating to the Weighted Performance Index I and the Extended Weighted Performance Index (Habitual Entrepreneurs Only)**

Independent Variables	Control Model 1ii		Model 1d		Control Model 2ii		Model 2d	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	-0.14	†	-0.14	†	-0.06		-0.06	
Age <sup>2</sup>	0.03		0.03		0.11		0.10	
Gender	0.13	†	0.14	†	0.11		0.09	
Education	0.04		0.04		-0.03		-0.04	
Managerial human capital	-0.01		-0.01		0.07		0.07	
Managerial capability	0.25	***	0.26	***	0.29	****	0.27	****
Technical capability	-0.15	*	-0.15	*	-0.02		-0.03	
Entrepreneurial capability	0.23	**	0.23	**	0.25	**	0.24	**
Development	-0.04		-0.04		0.05		0.05	
Parent business owners	-0.12	†	-0.12	†	-0.13	†	-0.13	†
Business similarity	-0.02		-0.02		0.02		0.01	
Task similarity	-0.04		-0.04		0.00		0.00	
Approval	0.00		0.00		-0.04		-0.04	
Welfare	0.02		0.02		0.08		0.08	
Personal Development	0.08		0.08		-0.01		-0.01	
Independence	-0.03		-0.03		-0.04		-0.03	
Financial motives	0.12	†	0.12	†	0.13	†	0.12	†
Reactive motives	0.05		0.05		0.00		-0.01	
Expectation of competition	-0.01		-0.01		-0.01		-0.01	
Business change	-0.01		-0.01		-0.01		-0.01	
Agriculture	-0.04		-0.04		-0.08		-0.08	
Manufacturing	0.00		0.00		-0.02		-0.01	
Construction	-0.08		-0.08		-0.05		-0.04	
Differentiation strategy	0.09		0.09		0.16	*	0.17	*
Innovation strategy	-0.04		-0.04		-0.06		-0.06	
Cost-based strategy	-0.04		-0.04		-0.10		-0.10	
10-49 employees	0.06		0.07		0.09		0.08	
50 or more employees	-0.04		-0.04		-0.05		-0.06	
Business 1-5yrs old	-0.06		-0.06		0.00		0.00	
Business 6-10 yrs old	-0.04		-0.04		0.06		0.07	
Purchased business	-0.02		-0.02		-0.05		-0.05	
No. of equity partners	-0.10		-0.10		-0.09		-0.09	
PORTFOLIO	-		-0.01		-		0.07	
F-value	2.16	***	2.08	***	2.61	****	2.57	****
R <sup>2</sup>	0.27		0.27		0.31		0.31	
Adjusted R <sup>2</sup>	0.14		0.14		0.19		0.19	
Change in R <sup>2</sup>	-		0.00		-		0.00	
N	221		221		221		221	

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

No significant differences between novice and serial or novice and portfolio entrepreneurs were detected.

**Table 8.13 OLS Regression Relating to the Extended Weighted Performance Index II (Total Sample)**

Independent Variables	Control Model 2i		Model 2a		Model 2b		Model 2c	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	-0.08		-0.08		-0.08		-0.08	
Age <sup>2</sup>	0.06		0.06		0.06		0.06	
Gender	0.05		0.05		0.05		0.04	
Education	-0.07		-0.07		-0.07		-0.07	
Managerial human capital	0.01		0.01		0.01		0.01	
Managerial capability	0.26	****	0.26	****	0.26	****	0.27	****
Technical capability	0.02		0.02		0.02		0.02	
Entrepreneurial capability	0.21	****	0.21	****	0.21	****	0.21	****
Development	0.01		0.01		0.01		0.01	
Parent business owners	-0.07		-0.07		-0.07		-0.07	
Business similarity	-0.01		-0.01		-0.01		-0.02	
Task similarity	-0.01		-0.01		-0.01		-0.02	
Approval	-0.01		-0.01		-0.01		-0.01	
Welfare	0.03		0.03		0.03		0.03	
Personal Development	0.00		0.00		0.00		-0.01	
Independence	0.00		0.00		0.00		0.00	
Financial motives	0.14	**	0.14	**	0.14	**	0.15	**
Reactive motives	0.05		0.05		0.05		0.05	
Expectation of competition	-0.04		-0.04		-0.04		-0.05	
Business change	-0.14	**	-0.14	**	-0.14	**	-0.13	*
Agriculture	-0.12	*	-0.12	*	-0.12	*	-0.11	*
Manufacturing	0.01		0.01		0.01		0.02	
Construction	-0.04		-0.04		-0.04		-0.03	
Differentiation strategy	0.08		0.08		0.08		0.08	
Innovation strategy	0.06		0.06		0.06		0.04	
Cost-based strategy	-0.06		-0.06		-0.06		-0.07	
10-49 employees	0.10	†	0.11	*	0.11	†	0.10	†
50 or more employees	-0.01		0.00		-0.01		0.00	
Business 1-5yrs old	0.03		0.02		0.03		0.02	
Business 6-10 yrs old	0.08		0.08		0.08		0.08	
Purchased business	-0.03		-0.03		-0.03		-0.03	
No. of equity partners	-0.02		-0.02		-0.02		-0.01	
HABITUAL	-		-0.02		-		-	
TOTAL	-		-		-0.02		-	
HABITUAL <sub>FAILED</sub>	-		-		-		-0.09	†
HABITUAL <sub>SUCCESSFUL</sub>	-		-		-		-0.03	
HABITUAL <sub>MIXED (NO EXIT)</sub>	-		-		-		0.02	
HABITUAL <sub>MIXED (WITH EXIT)</sub>	-		-		-		0.05	
F-value	3.77	****	3.66	****	3.65	****	3.52	****
R <sup>2</sup>	0.26		0.26		0.26		0.27	
Adjusted R <sup>2</sup>	0.19		0.19		0.19		0.19	
Change in R <sup>2</sup>	-		0.00		0.00		0.01	
N	378		378		378		378	

Note. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

### 8.3.1.3 Profit Relative to Competitors

Profit relative to competitors was selected as the dependent variable with regard to the full sample. Table 8.14 shows that the Control Model 3i and Models 3a, 3b and 3c were all significant with a minimum adjusted  $R^2$  of 0.08. By comparing Control Model 3i with Models 3a, it is evident that the inclusion of the business ownership experience  $HABITUAL$  resulted in a significant improvement in the model  $R^2$ . Being a habitual entrepreneur (Model 3a) was significantly though negatively associated with profit relative to competitors. This contrasts with the results from the bivariate analysis, which detected no significant differences between novice and habitual entrepreneurs. Consequently, hypothesis  $H_{14a}$  cannot be supported.

The inclusion of the  $HABITUAL_{failed}$ ,  $HABITUAL_{successful}$ ,  $HABITUAL_{Mixed}$  (No exit) and  $HABITUAL_{Mixed}$  (With exit) business ownership experience variables had no impact on the overall model. None of these variables were significantly associated with profit relative to performance with the exception of those habitual entrepreneurs who reported that they had not exited from any of the businesses they owned, but which were a mixture of successes and failure. These habitual entrepreneurs were associated with poorer profit relative to competitors ( $p < 0.10$ ). Consequently, there is no support for hypotheses  $H_{14c}$  or  $H_{14d}$ .

Among the control variables, an entrepreneurial capability, the adoption of an innovation strategy, and the adoption of a cost-based strategy were all associated with superior profit relative to competitors. In contrast, younger entrepreneurs and those reporting a developmental attitude towards opportunity identification, reported poorer profit relative to competitors. These relationships between the control variables and the dependent variable held across all models.

Table 8.15 reports findings relating to habitual entrepreneurs alone. Both the control Model 3ii and Model 3d were significant, with a minimum adjusted  $R^2$  of 0.09. The inclusion of the  $PORTFOLIO$  variable had no impact on the model. Consistent with the bivariate evidence, the  $PORTFOLIO$  variable was not significantly related to profit relative to competitors. Therefore, there is no support for hypothesis  $H_{14b}$ .

Among the control variables, similar relationships held between the dependent variable and the age of the entrepreneur, entrepreneurial capability, and a developmental attitude towards opportunity identification. In direct contrast to the findings relating to the full sample, the adoption of an innovation and / or cost-based strategy were found to be associated with superior profit performance. In the habitual entrepreneurs only sample, the adoption of a differentiation strategy was associated with superior firm performance relative to competitors.

**Table 8.14 OLS Regression Relating to Profit Relative to Competitors (Total Sample)**

Independent Variables	Control Model 3i		Model 3a		Model 3b		Model 3c	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	-0.14	*	-0.14	*	-0.14	*	-0.13	*
Age <sup>2</sup>	0.00		0.00		0.01		0.01	
Gender	0.08		0.08		0.08		0.08	
Education	0.01		0.02		0.01		0.01	
Managerial human capital	0.01		0.01		0.01		0.02	
Managerial capability	0.09		0.09		0.10		0.09	
Technical capability	0.06		0.05		0.06		0.05	
Entrepreneurial capability	0.20	**	0.19	**	0.20	**	0.19	**
Development	-0.12	*	-0.12	*	-0.13	*	-0.11	†
Parent business owners	-0.04		-0.03		-0.03		-0.03	
Business similarity	0.02		0.03		0.03		0.03	
Task similarity	0.00		0.00		0.00		0.00	
Approval	0.06		0.05		0.06		0.04	
Welfare	0.01		0.00		0.01		0.01	
Personal Development	0.02		0.03		0.02		0.03	
Independence	0.02		0.02		0.02		0.02	
Financial motives	0.07		0.06		0.07		0.07	
Reactive motives	0.02		0.02		0.02		0.02	
Expectation of competition	-0.03		-0.03		-0.03		-0.03	
Business change	-0.06		-0.06		-0.06		-0.06	
Agriculture	-0.07		-0.07		-0.07		-0.07	
Manufacturing	0.03		0.03		0.03		0.02	
Construction	-0.03		-0.02		-0.03		-0.02	
Differentiation strategy	0.08		0.09		0.08		0.08	
Innovation strategy	0.10	†	0.11	†	0.11	†	0.11	†
Cost-based strategy	0.10	†	0.10	†	0.10	†	0.10	†
10-49 employees	0.08		0.09		0.09		0.10	
50 or more employees	0.01		0.02		0.01		0.02	
Business 1-5yrs old	-0.01		-0.02		-0.01		-0.02	
Business 6-10 yrs old	0.03		0.04		0.03		0.03	
Purchased business	0.02		0.02		0.02		0.02	
No. of equity partners	-0.08		-0.08		-0.08		-0.09	
HABITUAL	-		-0.10	†	-		-	
TOTAL	-		-		-0.04		-	
HABITUAL <sub>FAILED</sub>	-		-		-		-0.08	
HABITUAL <sub>SUCCESSFUL</sub>	-		-		-		-0.05	
HABITUAL <sub>MIXED (NO EXIT)</sub>	-		-		-		-0.10	†
HABITUAL <sub>MIXED (WITH EXIT)</sub>	-		-		-		0.03	
F-value	2.01	***	2.06	***	1.96	**	1.92	**
R <sup>2</sup>	0.16		0.17		0.16		0.17	
Adjusted R <sup>2</sup>	0.08		0.09		0.08		0.08	
Change in R <sup>2</sup>	-		0.01	†	0.00		0.01	
N	373		373		373		373	

Note. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

**Table 8.15 OLS Regression Relating to Profit Relative to Competitors (Habitual Sub-sample)**

Independent Variables		Control Model 3ii		Model 3d	
		$\beta$	Sig	$\beta$	Sig
Age	GHK	-0.16	*	-0.16	*
Age <sup>2</sup>		0.06		0.07	
Gender		0.10		0.12	
Education		0.07		0.08	
Managerial human capital		0.01		0.01	
Managerial capability		0.07		0.09	
Technical capability		-0.05		-0.04	
Entrepreneurial capability	SHK <sub>E</sub>	0.15	†	0.16	†
Development		-0.17	*	-0.17	*
Parent business owners		-0.01		-0.02	
Business similarity	SHK <sub>V</sub>	0.03		0.04	
Task similarity		0.08		0.08	
Approval		0.09		0.09	
Welfare		-0.03		-0.03	
Personal Development		0.11		0.11	
Independence		-0.02		-0.03	
Financial motives		0.04		0.05	
Reactive motives		-0.01		-0.01	
Expectation of competition	Environment	-0.03		-0.03	
Business change		0.01		0.01	
Agriculture		-0.08		-0.08	
Manufacturing		0.09		0.08	
Construction		-0.07		-0.08	
Differentiation strategy	Strategy	0.20	*	0.20	*
Innovation strategy		0.13		0.13	
Cost-based strategy		0.08		0.09	
10-49 employees	Firm-specific	0.02		0.03	
50 or more employees		-0.02		-0.02	
Business 1-5yrs old		-0.03		-0.04	
Business 6-10 yrs old		-0.04		-0.04	
Purchased business		-0.05		-0.06	
No. of equity partners		-0.05		-0.05	
PORTFOLIO		-		-0.09	
F-value		1.66	*	1.65	*
R <sup>2</sup>		0.22		0.23	
Adjusted R <sup>2</sup>		0.09		0.09	
Change in R <sup>2</sup>		-		0.01	
N		218		218	

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

Portfolio entrepreneurs were negatively associated with profit relative to competitors in comparison to novice entrepreneurs (p < 0.005). No significant differences between novice and serial entrepreneurs were detected.

#### 8.3.1.4 Employment Change

Employment change was examined over the period 1996 to 2001. The log of the absolute change in employment and the percentage of change were considered. Ideally a regression model for each of these employment measures would have been run. Unfortunately, for the full sample, where the percentage change in employment was the dependent variable, the resulting model was not significant. Therefore, the log of absolute change in employment is the dependent variable in Table 8.16.

With respect to this dependent variable, the Control Model 7i and Models 7a, 7b and 7c were all highly significant, with a minimum  $R^2$  of 0.13). The inclusion of the business ownership experience variables had no significant effect on the overall model fit relative to the control model and none of the business ownership experience variables were individually significant. Consequently, there is no support for hypotheses  $H_{14a}$ ,  $H_{14c}$  or  $H_{14d}$ . Several control variables, however, were significantly related to growth. Technical capability, approval-based motives, and operating in the agricultural sector (as opposed to the services sector) were negatively related to the absolute change in employment between 1996 and 2001. In contrast, welfare-based motives, personal development-based motives, and firm size were positively associated with employment growth.

Table 8.18 reports findings relating to the habitual entrepreneur sub-sample. The models reported relate to the absolute change in employment Control Model 7ii and Model 7d relates to the absolute change in employment dependent variable. Both models were significant, with an adjusted  $R^2$  of 0.09. The addition of the PORTFOLIO variable to the control model had no significant effect and the variable itself was not significant (consistent with the bivariate results), lending no support to hypothesis  $H_{14b}$ . The absolute change in employment was positively and significantly related to welfare and personal development-based motives, and a firm size of 50 or more employees (as opposed to less than 10 employees). Technical capability and operating in the agricultural sector were negatively related to absolute employment change.

#### 8.3.1.5 Change in Sales

Change in sales was examined for the period between 1996 and 1999. For the full sample, where the absolute change in sales was the dependent variable, the resulting model was not significant. Therefore, the percentage change in sale in Table 8.17.

The overall significance of the models was weaker when the dependent variable was changed to the percentage change in sales, as illustrated in Table 8.17. As with the previous dependent variable, none of the business ownership variables were significantly related to the percentage change in sales (consistent with the bivariate results), nor did they have a significant effect on the overall model fit when compared to Control Model 8i. Therefore, there is no support for hypotheses  $H_{14a}$ ,  $H_{14c}$  or  $H_{14d}$ . Among the control variables, entrepreneurial capability and a business age between 6 and 10 years, was positively associated with the percentage sales growth. The age of the entrepreneur, independence-based motives, and an employment size between 10-49 employees (in comparison to fewer employees) were negatively associated with the percentage sales growth.

Table 8.18 reports the regression models where the dependent variable related to the absolute change in sales (i.e., Control Model 8ii and Model 8d). Both these models were more highly significant than models 7ii and 7d ( $p < 0.001$ ) and also had a higher  $R^2$  (0.28 with an adjusted  $R^2$  of 0.13). The PORTFOLIO variable had no significant effect on the model fit, nor was it significantly related to the absolute change in sales. Six control variables were related to sales change: technical capability (negatively associated), operating in the agricultural sector (negatively associated), employing 50 or more employees, education (negatively associated), a developmental attitude towards opportunity identification (negatively associated), and the adoption of an innovation-based business strategy (positively associated).



**Table 8.16 OLS Regression Relating to the Absolute Change in Total Employment (log) During 1996-2001 (Total Sample)**

Independent Variables	Control Model 7i		Model 7a		Model 7b		Model 7c	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	-0.04		-0.04		-0.03		-0.03	
Age <sup>2</sup>	-0.03		-0.03		-0.03		-0.03	
Gender	0.01		0.01		0.01		0.01	
Education	-0.01		-0.01		-0.01		-0.02	
Managerial human capital	0.02		0.02		0.02		0.01	
Managerial capability	0.02		0.02		0.02		0.03	
Technical capability	-0.12	*	-0.12	*	-0.12	*	-0.12	*
Entrepreneurial capability	0.09		0.08		0.09		0.10	
Development	-0.04		-0.04		-0.05		-0.04	
Parent business owners	-0.08		-0.08		-0.07		-0.08	
Business similarity	-0.02		-0.02		-0.02		-0.01	
Task similarity	-0.07		-0.07		-0.07		-0.06	
Approval	-0.09	†	-0.09	†	-0.09	†	-0.10	†
Welfare	0.14	**	0.14	**	0.14	**	0.15	**
Personal Development	0.15	**	0.15	**	0.15	**	0.14	*
Independence	-0.04		-0.04		-0.04		-0.05	
Financial motives	-0.02		-0.02		-0.02		-0.01	
Reactive motives	0.07		0.07		0.07		0.06	
Expectation of competition	-0.07		-0.07		-0.07		-0.06	
Business change	0.05		0.05		0.05		0.04	
Agriculture	-0.10	†	-0.10	†	-0.10	†	-0.10	†
Manufacturing	-0.01		-0.01		-0.02		-0.02	
Construction	0.03		0.03		0.03		0.02	
Differentiation strategy	0.05		0.05		0.05		0.04	
Innovation strategy	0.05		0.05		0.05		0.05	
Cost-based strategy	-0.08		-0.07		-0.08		-0.08	
10-49 employees	0.12	*	0.13	*	0.13	*	0.13	*
50 or more employees	0.29	****	0.29	****	0.29	****	0.28	****
Business 1-5yrs old	0.04		0.03		0.03		0.04	
Business 6-10 yrs old	0.03		0.03		0.03		0.04	
Purchased business	-0.02		-0.03		-0.02		-0.02	
No. of equity partners	-0.06		-0.06		-0.06		-0.06	
HABITUAL	-		-0.01		-		-	
TOTAL	-		-		-0.02		-	
HABITUAL <sub>FAILED</sub>	-		-		-		0.03	
HABITUAL <sub>SUCCESSFUL</sub>	-		-		-		-0.06	
HABITUAL <sub>MIXED (NO EXIT)</sub>	-		-		-		-0.02	
HABITUAL <sub>MIXED (WITH EXIT)</sub>	-		-		-		0.06	
F-value	2.71	****	2.62	****	2.63	****	2.51	****
R <sup>2</sup>	0.20		0.20		0.20		0.21	
Adjusted R <sup>2</sup>	0.13		0.13		0.13		0.13	
Change in R <sup>2</sup>	-		0.00		0.00		0.01	
N	375		375		375		375	

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

A constant value was added to negative employment change values to ensure that a logarithm could be taken.

**Table 8.17 OLS Regression Relating to the Percentage Change in Sales 1996-1999 (Total Sample)**

Independent Variables	Control Model 8i		Model 8a		Model 8b		Model 8c	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	-0.16	**	-0.16	**	-0.16	*	-0.16	**
Age <sup>2</sup>	0.04		0.04		0.04		0.04	
Gender	-0.09		-0.09		-0.09		-0.11	†
Education	0.02		0.01		0.02		0.02	
Managerial human capital	0.08		0.08		0.08		0.08	
Managerial capability	0.09		0.09		0.10		0.09	
Technical capability	0.09		0.09		0.09		0.09	
Entrepreneurial capability	0.19	**	0.19	**	0.19	**	0.19	**
Development	-0.08		-0.08		-0.08		-0.07	
Parent business owners	-0.08		-0.08		-0.07		-0.08	
Business similarity	0.02		0.02		0.03		0.01	
Task similarity	0.00		0.00		0.00		-0.01	
Approval	0.08		0.08		0.08		0.08	
Welfare	0.01		0.01		0.01		0.01	
Personal Development	0.06		0.06		0.06		0.06	
Independence	-0.10	†	-0.10	†	-0.11	†	-0.10	†
Financial motives	0.04		0.04		0.04		0.05	
Reactive motives	0.03		0.03		0.02		0.03	
Expectation of competition	-0.09		-0.09		-0.09		-0.09	
Business change	0.06		0.06		0.07		0.07	
Agriculture	-0.03		-0.03		-0.03		-0.03	
Manufacturing	0.10		0.10		0.09		0.11	†
Construction	0.02		0.02		0.02		0.03	
Differentiation strategy	-0.02		-0.02		-0.02		-0.02	
Innovation strategy	-0.01		-0.01		-0.00		-0.01	
Cost-based strategy	-0.09		-0.09		-0.10		-0.10	
10-49 employees	-0.11	†	-0.12	†	-0.11	†	-0.12	†
50 or more employees	-0.06		-0.06		-0.06		-0.05	
Business 1-5yrs old	-0.01		-0.01		-0.01		-0.02	
Business 6-10 yrs old	0.11	†	0.11	†	0.11	†	0.11	†
Purchased business	-0.02		-0.02		-0.02		-0.03	
No. of equity partners	0.06		0.06		0.06		0.06	
HABITUAL	-		0.01		-		-	
TOTAL	-		-		-0.04		-	
HABITUAL <sub>FAILED</sub>	-		-		-		-0.05	
HABITUAL <sub>SUCCESSFUL</sub>	-		-		-		0.01	
HABITUAL <sub>MIXED (NO EXIT)</sub>	-		-		-		0.04	
HABITUAL <sub>MIXED (WITH EXIT)</sub>	-		-		-		-0.01	
F-value	1.96	**	1.89	**	1.91	**	1.78	**
R <sup>2</sup>	0.18		0.18		0.18		0.18	
Adjusted R <sup>2</sup>	0.09		0.08		0.09		0.08	
Change in R <sup>2</sup>	-		0.00		0.00		0.01	
N	322		322		322		322	

Note. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

**Table 8.18 OLS Regression Relating to the Change in Absolute Employment and Sales (log) (Habitual Entrepreneurs Sub-sample)**

Independent Variables	Control Model 7ii		Model 7d		Control Model 8ii		Model 8d	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	-0.04		-0.04		-0.11		-0.11	
Age <sup>2</sup>	-0.06		-0.06		-0.03		-0.04	
Gender	0.04		0.05		0.10		0.09	
Education	-0.03		-0.02		-0.12		-0.13	†
Managerial human capital	0.04		0.03		0.04		0.04	
Managerial capability	-0.04		-0.02		-0.03		-0.04	
Technical capability	-0.19	*	-0.18	*	-0.17	*	-0.17	*
Entrepreneurial capability	0.05		0.05		0.07		0.07	
Development	-0.07		-0.08		-0.14	†	-0.14	†
Parent business owners	-0.05		-0.06		0.01		0.01	
Business similarity	0.01		0.01		0.02		0.02	
Task similarity	-0.07		-0.07		-0.08		-0.08	
Approval	-0.08		-0.09		-0.03		-0.03	
Welfare	0.21	**	0.21	**	-0.03		-0.03	
Personal Development	0.21	**	0.21	**	0.05		0.05	
Independence	-0.05		-0.06		-0.04		-0.03	
Financial motives	0.01		0.01		-0.05		-0.05	
Reactive motives	0.04		0.04		0.01		0.01	
Expectation of competition	-0.07		-0.08		-0.04		-0.03	
Business change	0.00		0.00		-0.11		-0.11	
Agriculture	-0.16	*	-0.15	*	-0.15	†	-0.15	*
Manufacturing	-0.01		-0.02		-0.12		-0.12	
Construction	0.02		0.01		-0.06		-0.06	
Differentiation strategy	0.11		0.10		0.10		0.10	
Innovation strategy	0.09		0.09		0.23	**	0.23	**
Cost-based strategy	-0.07		-0.06		0.10		0.10	
10-49 Employees	0.07		0.09		0.01		0.00	
50 or more Employees	0.28	****	0.28	****	0.35	****	0.35	****
Business 1-5yrs old	0.04		0.04		-0.01		-0.01	
Business 6-10 yrs old	0.02		0.01		-0.03		-0.03	
Purchased business	-0.03		-0.03		-0.04		-0.03	
No. of equity partners	-0.08		-0.08		0.03		0.03	
PORTFOLIO	-		-0.08		-		0.05	
F-value	1.65	*	1.64	*	1.95	***	1.89	***
R <sup>2</sup>	0.22		0.23		0.28		0.28	
Adjusted R <sup>2</sup>	0.09		0.09		0.14		0.13	
Change in R <sup>2</sup>	-		0.01		-		0.00	
N	218		218		194		194	

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

No significant differences were detected between novice and serial or novice and portfolio entrepreneurs with respect to both dependent variables.

A constant value was added to negative employment / sales change values to ensure that a logarithm could be taken.

### 8.3.2 Entrepreneur Performance

#### 8.3.2.1 Current Standard of Living

An entrepreneur's reported current standard of living in relation to when he/she first started or purchased the surveyed business is the dependent variable in Table 8.19. Relating to the full sample, Table 8.19 shows that the Control Model 4i and Models 4a, 4b and 4c were all significant, and had a minimum adjusted  $R^2$  of 0.10. While the inclusion of the HABITUAL and TOTAL variables resulted in no significant improvement, the inclusion of the HABITUAL<sub>failed</sub>, HABITUAL<sub>successful</sub>, HABITUAL<sub>Mixed (No exit)</sub> and HABITUAL<sub>Mixed (With exit)</sub> variables result in a significant improvement in the relevant models. Among these latter variables, only HABITUAL<sub>failed</sub> was significantly (though negatively) related to the dependent variable. Overall, there is no support for hypothesis  $H_{14a}$ ,  $H_{14c}$  or  $H_{14d}$ . Among the control variables, entrepreneurial capability, financial motives, and a firm size greater than 9, were positively and significantly related to the current standard of living.

Table 8.20 reports findings relating to the sample of habitual entrepreneurs. Both the control Model 4ii and Model 4d were found to be significant, with an adjusted  $R^2$  of 0.10. The PORTFOLIO variable was not significantly related to the current standard of living of the entrepreneur. This is in contrast to the bivariate evidence where portfolio entrepreneurs reported a higher standard of living relative to serial entrepreneurs. The control model did not result in a significant improvement to the model fit. Five control variables were significantly related to the dependent variable. The age of the entrepreneur and the level of business change, were negatively related to the entrepreneur's current standard of living. The adoption of a differentiation strategy and firm size, however, were positively related to the dependent variable.

**Table 8.19 OLS Regression Relating to the Current Standard of Living Relative to when the Entrepreneur First Established or Purchased the Surveyed Business (Total Sample)**

Independent Variables	Control Model 4i		Model 4a		Model 4b		Model 4c	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	-0.19	***	-0.19	***	-0.19	***	-0.19	***
Age <sup>2</sup>	0.05		0.05		0.05		0.05	
Gender	0.03		0.03		0.03		0.02	
Education	0.03		0.03		0.03		0.04	
Managerial human capital	-0.03		-0.03		-0.03		-0.02	
Managerial capability	0.09		0.09		0.09		0.09	
Technical capability	-0.04		-0.05		-0.04		-0.06	
Entrepreneurial capability	0.15	*	0.14	*	0.15	*	0.13	*
Development	-0.05		-0.05		-0.05		-0.05	
Parent business owners	-0.02		-0.02		-0.02		-0.01	
Business similarity	-0.06		-0.06		-0.06		-0.07	
Task similarity	-0.03		-0.03		-0.03		-0.04	
Approval	-0.01		-0.01		-0.01		-0.01	
Welfare	-0.04		-0.05		-0.04		-0.05	
Personal Development	-0.02		-0.01		-0.02		-0.01	
Independence	-0.01		-0.01		-0.01		-0.01	
Financial motives	0.14	**	0.14	**	0.14	**	0.14	**
Reactive motives	0.01		0.01		0.01		0.01	
Expectation of competition	-0.07		-0.07		-0.07		-0.08	
Business change	-0.17	**	-0.17	**	-0.17	**	-0.15	**
Agriculture	0.01		0.01		0.01		0.02	
Manufacturing	0.06		0.06		0.06		0.07	
Construction	-0.08		-0.07		-0.08		-0.05	
Differentiation strategy	0.05		0.05		0.05		0.06	
Innovation strategy	0.05		0.06		0.05		0.06	
Cost-based strategy	-0.08		-0.07		-0.08		-0.07	
10-49 employees	0.17	**	0.17	**	0.17	**	0.17	**
50 or more employees	0.11	*	0.11	*	0.11	*	0.12	*
Business 1-5yrs old	-0.04		-0.05		-0.04		-0.06	
Business 6-10 yrs old	-0.05		-0.05		-0.05		-0.05	
Purchased business	-0.03		-0.03		-0.03		-0.03	
No. of equity partners	-0.01		-0.01		-0.01		-0.01	
HABITUAL	-		-0.07		-		-	
TOTAL	-		-		-0.01		-	
HABITUAL <sub>FAILED</sub>	-		-		-		-0.15	*
HABITUAL <sub>SUCCESSFUL</sub>	-		-		-		0.02	
HABITUAL <sub>MIXED (NO EXIT)</sub>	-		-		-		-0.04	
HABITUAL <sub>MIXED (WITH EXIT)</sub>	-		-		-		-0.06	
F-value	2.34	****	2.34	****	2.26	****	2.35	****
R <sup>2</sup>	0.18		0.18		0.18		0.20	
Adjusted R <sup>2</sup>	0.10		0.11		0.10		0.11	
Change in R <sup>2</sup>	-		0.01		0.00		0.02	†
N	378		378		378		378	

Note. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

**Table 8.20 OLS Regression Relating to Standard of Living (Habitual Sub-sample)**

Independent Variables		Control Model 4ii		Model 4d	
		$\beta$	Sig	$\beta$	Sig
Age	GHK	-0.21	**	-0.21	**
Age <sup>2</sup>		0.05		0.04	
Gender		0.04		0.03	
Education		0.07		0.07	
Managerial human capital		-0.06		-0.05	
Managerial capability		0.07		0.07	
Technical capability		-0.07		-0.08	
Entrepreneurial capability	SHK <sub>E</sub>	0.12		0.12	
Development		-0.11		-0.10	
Parent business owners		-0.07		-0.07	
Business similarity	SHK <sub>V</sub>	-0.06		-0.06	
Task similarity		0.05		0.05	
Approval		0.01		0.01	
Welfare		-0.02		-0.02	
Personal Development		0.08		0.08	
Independence		-0.03		-0.02	
Financial motives		0.10		0.10	
Reactive motives	Environment	-0.05		-0.05	
Expectation of competition		-0.09		-0.09	
Business change		-0.19	*	-0.19	*
Agriculture		-0.02		-0.02	
Manufacturing		0.05		0.06	
Construction	Strategy	-0.09		-0.08	
Differentiation strategy		0.14	†	0.14	†
Innovation strategy		0.11		0.10	
Cost-based strategy	Firm-specific	0.02		0.03	
10-49 employees		0.19	*	0.18	*
50 or more employees		0.12	†	0.12	
Business 1-5yrs old		0.00		0.00	
Business 6-10 yrs old		-0.06		-0.05	
Purchased business		-0.02		-0.01	
No. of equity partners		-0.07		-0.06	
PORTFOLIO		-		0.05	
F-value		1.75	*	1.70	*
R <sup>2</sup>		0.23		0.23	
Adjusted R <sup>2</sup>		0.10		0.10	
Change in R <sup>2</sup>		-		-	
N		221		221	

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001  
No significant differences were detected between novice and serial entrepreneurs or novice and portfolio entrepreneurs.

### 8.3.2.2 Amount of Money taken out of the Business(es) Owned

The total amount of money taken out of the business(es) owned over the 12 months prior to the survey by the entrepreneurs is the dependent variable in Table 8.21. All models reported in Table 8.21 are significant and had a minimum adjusted  $R^2$  of 0.29. When the Control Model 5i was compared with Models 5a, 5b and 5c, the inclusion of business ownership experience variables had no significant impact on the overall model. In fact, none of the business ownership variables were significantly related to the amount of money taken out. Conversely, the bivariate evidence detected that habitual entrepreneurs took out significantly more money from the business(es) they owned than their novice counterparts. Multivariate evidence, however, fails to support hypotheses  $H_{14a}$ ,  $H_{14c}$  and  $H_{14d}$ .

A number of significant relationships were detected between the dependent and control variables. Younger entrepreneurs, female entrepreneurs, entrepreneurs reporting a developmental attitude towards opportunity identification, the degree of business similarity, being involved in the agricultural sector, and the surveyed business being between 1 and 5 years of age ( $p < 0.05$ ) reported lower amounts of money taken out. In contrast, the education level of the entrepreneur, managerial capability, entrepreneurial capability, financial and reactive motives for starting or purchasing the surveyed business and firm size were positively related to the amount of money taken out of the business(es) currently owned.

With respect to the habitual entrepreneur sub-sample, Table 8.22 shows that both the Control Model 5ii and Model 5d was highly significant, and had a minimum adjusted  $R^2$  of 0.29. The addition of the PORTFOLIO variable resulted in a significant improvement in the model fit, and the variable was significantly and positively related to the amount of money taken out. This finding lends support to hypothesis  $H_{14b}$  and is consistent with the finding from the bivariate analysis.

Several significant relationships were detected between the control variables and the dependent variable. There was some variation between the control model and Model 5d in relation to the control variables found to be significant. The results

relating to the full model (i.e., Model 5d) alone will be highlighted. While education, entrepreneurial capability, personal development-based and financial motives, and firm size were positively related to the amount of money taken out, a developmental attitude towards opportunity identification and business similarity, were negatively related to the amount of money taken out.

The finding that being a portfolio entrepreneur is significantly related to higher amounts of money taken out is not particularly surprising since portfolio entrepreneurs by definition owned at least two businesses at the time of the survey. Given the higher number of businesses owned, portfolio entrepreneurs will on average be able to take out more total money than their serial (or novice) counterparts. It is interesting, therefore, to examine if different types of entrepreneurs take out more or less money *per business owned* over the period of study. Accordingly, the original money taken out variable (Money taken out I) was standardised by the number of businesses currently owned (Money taken out II). Tables 8.23 and 8.22 report findings relating to this standardised dependent variable, with regard to the full sample and the habitual sub-sample, respectively.



**Table 8.21 OLS Regression Relating to Money Taken Out of Business(es) Owned**

Independent Variables		Control Model 5i		Model 5a		Model 5b		Model 5c	
		$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	GHK	-0.10	*	-0.10	*	-0.10	*	-0.10	*
Age <sup>2</sup>		-0.03		-0.03		-0.04		-0.03	
Gender		0.09	†	0.10	†	0.09	†	0.08	†
Education		0.20	****	0.20	****	0.20	****	0.20	****
Managerial human capital		0.02		0.02		0.02		0.03	
Managerial capability		0.09	†	0.09	†	0.08		0.09	†
Technical capability		0.00		0.00		0.00		0.00	
Entrepreneurial capability	SHK <sub>E</sub>	0.14	**	0.14	**	0.14	**	0.14	**
Development		-0.14	**	-0.14	**	-0.14	**	-0.14	**
Parent business owners		-0.05		-0.05		-0.05		-0.05	
Business similarity	SHK <sub>V</sub>	-0.11	*	-0.11	*	-0.11	*	-0.13	*
Task similarity		-0.02		-0.02		-0.02		-0.03	
Approval		-0.07		-0.07	†	-0.07	†	-0.07	
Welfare		-0.04		-0.04		-0.04		-0.04	
Personal Development		0.06		0.06		0.06		0.05	
Independence		0.01		0.01		0.01		0.01	
Financial motives		0.14	**	0.14	**	0.14	**	0.15	**
Reactive motives		0.13	**	0.13	**	0.13	**	0.12	**
Expectation of competition	Environment	-0.04		-0.04		-0.04		-0.05	
Business change		0.07		0.07		0.07		0.08	
Agriculture		-0.09	†	-0.09	†	-0.09	†	-0.09	†
Manufacturing		-0.05		-0.05		-0.05		-0.04	
Construction		-0.04		-0.03		-0.04		-0.02	
Differentiation strategy	Strategy	-0.05		-0.05		-0.05		-0.05	
Innovation strategy		-0.07		-0.07		-0.08		-0.09	
Cost-based strategy		-0.01		-0.01		-0.02		0.00	
10-49 Employees	Firm-specific	0.32	****	0.32	****	0.32	****	0.32	****
50 or more Employees		0.19	****	0.19	****	0.19	****	0.20	****
Business 1-5yrs old		-0.11	*	-0.11	*	-0.11	*	-0.12	*
Business 6-10 yrs old		-0.01		-0.01		-0.01		-0.01	
Purchased business		-0.07		-0.07		-0.07		-0.07	
No. of equity partners		0.03		0.03		0.02		0.04	
HABITUAL		-		0.00		-		-	
TOTAL		-				0.02		-	
HABITUAL <sub>FAILED</sub>		-				-		-0.07	
HABITUAL <sub>SUCCESSFUL</sub>		-				-		-0.01	
HABITUAL <sub>MIXED (NO EXIT)</sub>								0.04	
HABITUAL <sub>MIXED (WITH EXIT)</sub>								0.05	
F-value		5.81	****	5.62	****	5.56	****	5.33	****
R <sup>2</sup>		0.36		0.36		0.36		0.37	
Adjusted R <sup>2</sup>		0.30		0.30		0.29		0.30	
Change in R <sup>2</sup>		-		0.00		0.00		0.01	
N		364		364		364		364	

Note. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

**Table 8.22 OLS Regression Relating to Money Taken Out of Business(es) Owned and Money Taken Out of Business(es) Owned Standardised by the Number of Businesses Currently Owned**

Independent Variables	Control Model 5ii		Model 5d		Control Model 6ii		Model 6d	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	-0.11	†	-0.10		-0.11		-0.11	
Age <sup>2</sup>	-0.02		-0.03		-0.11		-0.1	
Gender	0.13	†	0.09		0.02		0.07	
Education	0.20	**	0.18	**	0.15	*	0.17	*
Managerial human capital	0.07		0.08		0.14	*	0.12	†
Managerial capability	0.12	*	0.08		0.05		0.10	
Technical capability	-0.09		-0.10		-0.08		-0.06	
Entrepreneurial capability	0.13	*	0.12	†	0.16	*	0.17	*
Development	-0.18	*	-0.16	*	-0.08		-0.11	
Parent business owners	-0.07		-0.05		0.02		0.00	
Business similarity	-0.15	*	-0.16	**	-0.21	**	-0.18	**
Task similarity	0.05		0.04		0.10		0.11	†
Approval	-0.10	*	-0.10		-0.13	†	-0.14	*
Welfare	0.03		0.03		0.03		0.03	
Personal Development	0.12		0.12	†	0.14	†	0.14	†
Independence	-0.04		-0.03		-0.04		-0.07	
Financial motives	0.13		0.12	†	0.08		0.08	
Reactive motives	0.11		0.10		0.06		0.08	
Expectation of competition	-0.05		-0.04		0.01		-0.01	
Business change	0.08		0.08		0.13	†	0.13	†
Agriculture	-0.05		-0.06		-0.03		-0.03	
Manufacturing	0.01		0.04		0.06		0.03	
Construction	0.01		0.03		-0.02		-0.04	
Differentiation strategy	0.02		0.02		0.06		0.05	
Innovation strategy	-0.11	†	-0.12		-0.16	*	-0.15	†
Cost-based strategy	-0.04		-0.06		-0.12	†	-0.10	
10-49 Employees	0.32	****	0.29	****	0.20	**	0.23	**
50 or more Employees	0.22	†	0.21	***	0.20	**	0.20	**
Business 1-5yrs old	-0.07		-0.06		-0.07		-0.07	
Business 6-10 yrs old	0.00		0.02		0.05		0.03	
Purchased business	-0.09		-0.08		-0.05		-0.07	
No. of equity partners	-0.03		-0.02		0.01		0.00	
PORTFOLIO	-		0.19	**	-		-0.24	****
F-value	3.77	****	4.08	****	2.59	****	3.10	****
R <sup>2</sup>	0.40		0.43		0.31		0.36	
Adjusted R <sup>2</sup>	0.29		0.32		0.19		0.24	
Change in R <sup>2</sup>	-		0.03	***	-		0.05	****
N	216		216		216		216	

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

Serial entrepreneurs were found to be negatively associated with the amount of money taken out relative to novice entrepreneurs (p < 0.01). No significant differences between portfolio and novice entrepreneurs were detected.

Serial entrepreneurs were found to be negatively associated with the amount of money taken out per business relative to novice entrepreneurs (p < 0.005). Portfolio entrepreneurs were found to be negatively associated with the amount of money taken out per business relative to novice entrepreneurs (p < 0.0001).

Table 8.23 shows that the Control Model 6i and Models 6a, 6b and 6c were highly significant and had a minimum adjusted  $R^2$  of 0.17. The inclusion of each of the business ownership experience variables resulted in a significant improvement in the model fit. Each business ownership experience variable was significantly, but negatively associated with the dependent variable. That is, being a habitual entrepreneur (HABITUAL), having owned more businesses (TOTAL), having been a failing habitual entrepreneur (HABITUAL<sub>failed</sub>) or having been a successful habitual entrepreneur (HABITUAL<sub>successful</sub>) were all negatively related to the amount of money taken out per business. One interpretation of this finding could be that habitual entrepreneurs may be more motivated by growth and less so by immediate financial rewards and therefore re-invest funds into their businesses, taking a longer-term view of business performance. Alternatively, habitual entrepreneurs, particularly portfolio entrepreneurs, may hold lower ownership stakes in the businesses that they own, resulting in lower amounts of money being taken out of each business that they own.

Table 8.22 reports findings relating to the sub-sample of habitual entrepreneurs. Both the Control Model 6ii and Model 6d were significant with a minimum  $R^2$  of 0.31 (and a minimum adjusted  $R^2$  of 0.19). Once again, the inclusion of the PORTFOLIO variable resulted in a significant improvement in the model fit. However, in direct contrast to the earlier finding that portfolio entrepreneurs reported significantly higher amounts of money taken out, when money taken out was standardised by the number of businesses currently owned, the relationship was completely reversed (consistent with the bivariate analysis). That is, portfolio entrepreneurs reported significantly lower amounts of money taken out per business. With respect to the control variables, education, managerial human capital, entrepreneurial capability, task similarity, personal development-based motives and firm size were positively related to the amount of money taken out per business. Conversely, business similarity, approval-based motives, and the adoption of an innovation-based business strategy, were negatively related to the amount of money taken out per business.

**Table 8.23 OLS Regression Relating to the Amount of Money Taken Out of Business(es) Owned Standardised by the Number of Businesses Currently Owned (Total Sample)**

Independent Variables	Control Model 6i		Model 6a		Model 6b		Model 6c	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	-0.09		-0.08		-0.06		-0.08	
Age <sup>2</sup>	-0.08		-0.07		-0.07		-0.07	
Gender	0.02		0.03		0.03		0.03	
Education	0.16	**	0.17	***	0.18	***	0.18	***
Managerial human capital	0.05		0.05		0.04		0.06	
Managerial capability	0.03		0.04		0.06		0.03	
Technical capability	0.08		0.03		0.07		0.03	
Entrepreneurial capability	0.15	*	0.13	*	0.16	**	0.13	*
Development	-0.06		-0.05		-0.09		-0.04	
Parent business owners	-0.02		0.01		0.02		0.00	
Business similarity	-0.18	***	-0.15	**	-0.15	**	-0.15	**
Task similarity	-0.02		-0.02		-0.03		-0.02	
Approval	-0.04		-0.06		-0.05		-0.07	
Welfare	-0.03		-0.06		-0.03		-0.05	
Personal Development	0.04		0.07		0.05		0.07	
Independence	0.02		0.01		0.02		0.01	
Financial motives	0.12	*	0.11	*	0.11	*	0.11	*
Reactive motives	0.11	*	0.10	*	0.10	†	0.10	*
Expectation of competition	0.00		0.00		0.00		0.00	
Business change	0.06		0.08		0.09	†	0.08	
Agriculture	-0.08		-0.08		-0.08		-0.08	†
Manufacturing	-0.02		-0.04		-0.04		-0.04	
Construction	-0.09	†	-0.07		-0.07		-0.07	
Differentiation strategy	-0.04		-0.03		-0.04		-0.03	
Innovation strategy	-0.10	†	-0.08		-0.09		-0.08	
Cost-based strategy	-0.04		-0.02		-0.04		-0.03	
10-49 employees	0.20	****	0.23	****	0.24	****	0.23	****
50 or more employees	0.12	*	0.15	**	0.14	**	0.15	**
Business 1-5yrs old	-0.10	†	-0.12	*	-0.11	*	-0.12	*
Business 6-10 yrs old	-0.01		0.00		-0.01		0.01	
Purchased business	-0.02		-0.02		-0.01		-0.03	
No. of equity partners	0.08		0.06		0.07		0.06	
HABITUAL	-		-0.26	****	-		-	
TOTAL	-		-		-0.24	****	-	
HABITUAL <sub>FAILED</sub>	-		-				-0.20	****
HABITUAL <sub>SUCCESSFUL</sub>	-		-				-0.14	**
HABITUAL <sub>MIXED (NO EXIT)</sub>	-		-				-0.27	****
HABITUAL <sub>MIXED (WITH EXIT)</sub>	-		-				-0.03	
F-value	3.40	****	4.39	****	4.22	****	4.09	****
R <sup>2</sup>	0.25		0.31		0.30		0.31	
Adjusted R <sup>2</sup>	0.17		0.24		0.23		0.24	
Change in R <sup>2</sup>	-		0.06	****	0.05	****	0.06	****
N	364		364		364		364	

Note. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

## 8.4 SUMMARY OF FINDINGS

While results relying on bivariate and multivariate analysis have been presented, the discussion below is largely based on findings from the multivariate analysis as this type of analysis is deemed to be more robust. Table 8.24 and 8.25 present the nature and strength of the relationship between each variable and the dependent variables relating to the full sample (i.e., novice and habitual entrepreneurs) and the subsample of habitual entrepreneurs, respectively.

With respect to the full sample, there were a number of significant relationships between the various indicators of business ownership experience and firm performance. All these were inverse relationships. In particular, being a habitual entrepreneur (as opposed to a novice entrepreneur) was negatively associated with weighted performance I and profit relative to competitors. Habitual entrepreneurs, whose majority of businesses had failed, reported significantly lower performance in terms of weighted performance I, and weighted performance II. Further, those habitual entrepreneurs who had not exited from any of the businesses they own, were associated with poorer performance relative to competitors.

With regard to entrepreneur performance, habitual entrepreneurs, whose majority of businesses had failed, were associated with a significantly lower standard of living and lower amounts of money taken out per business owned. However, those habitual entrepreneurs whose majority of businesses were successes, and those habitual entrepreneurs who had not exited from any of the businesses they own, also reported lower amounts of money taken out per business than novice entrepreneurs. Finally, the total number of businesses ever owned was inversely related to the amount of money taken out II. Overall, these findings contrast starkly with the initial prediction that habitual entrepreneurs would out-perform their inexperienced counterparts ( $H_{14a}$ ), as well as habitual entrepreneurs who had failed ( $H_{14c}$ ) and those who had been successful ( $H_{14d}$ ).

Among the habitual entrepreneurs, being a portfolio entrepreneur was not significantly related to any of the firm performance variables. Being a portfolio entrepreneur was, however, associated with one entrepreneur performance variable.

While there was a positive and significant relationship between being a portfolio entrepreneurs and the amount of money taken out of al businesses owned (i.e., money taken out I), this relationship was reversed when the amount of money taken out was standardised by the number of businesses currently owned (i.e., money taken out II). Consequently, there is no support for hypothesis H<sub>14b</sub>.

**Table 8.24 Summary of Regression Results Relating to Performance for Novice and Habitual Entrepreneurs**

Dependent Variables		Weighted I	Weighted II	Profit relative to competitors	Employment change <sup>b</sup>	Sales change <sup>c</sup>	Standard of Living	Money taken out I	Money taken out II
Independent Variables									
Age		..		..		..	...	..	
Age <sup>2</sup>									
Gender		+						++	
Education	GHK							++++	++++
Managerial human capital									
Managerial capability		++++	++++	+++				++	
Technical capability		-		..	..				
Entrepreneurial capability		++++	++++			+++	++	+++	++
Development	SHK <sub>E</sub>							..	
Parent business owners		..							
Business similarity								..	..
Task similarity									
Approval									
Welfare					+++				
Personal Development	SHK <sub>V</sub>				+++				
Independence						-			
Financial motives		++	+++					+++	++
Reactive motives								++	++
Expectation of competition									
Business change			..				---		
Agriculture			..					..	
Manufacturing	Environment				-				
Construction									<sup>a</sup>
Differentiation strategy									
Innovation strategy	Strategy			+				-	<sup>a</sup>
Cost-based strategy				+					
10-49 Employees		+	++		++	-	++	++++	++++
50 or more Employees					++++		+	+++	+++
Business 1-5yrs old								..	..
Business 6-10 yrs old						+			
Purchased business									
No. of equity partners	Firm-specific								
HABITUAL		-		-					-----
TOTAL									-----
HABITUAL <sub>FAILED</sub>		-	-				..		-----
HABITUAL <sub>SUCCESSFUL</sub>									---
HABITUAL <sub>MIXED (NO EXIT)</sub>									-----
HABITUAL <sub>MIXED (WITH EXIT)</sub>									-----
Model Significance		****	****	***	****	**	****	****	****
R <sup>2</sup>		0.23	0.26	0.17	0.20	0.18	0.19	0.35	0.30
Adjusted R <sup>2</sup>		0.16	0.19	0.09	0.13	0.09	0.11	0.28	0.23
N		378	378	373	375	322	378	364	364

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

- Negatively related at p < 0.10; -- negatively related at p < 0.05; --- negatively related at p < 0.01; ---- negatively related at p < 0.001; ----- negatively related at p < 0.0001

+ Positively related at p < 0.10; ++ positively related at p < 0.05; +++ positively related at p < 0.01; ++++ positively related at p < 0.001; +++++ positively related at p < 0.0001

<sup>a</sup> Variable significant in the control model only

<sup>b</sup> Employment change was measured in terms of the log of the absolute change in total employment (1996-2001).

<sup>c</sup> Sales change was measured in terms of the percentage change in sales growth between 1996 and 1999. The model with the log of the absolute change in sales was not significant.

**Table 8.25      Summary of Regression Results Relating to Performance Based on Habitual Entrepreneurs Only**

Dependent Variables		Weighted I	Weighted II	Profit relative to competitors	Employment change <sup>b</sup>	Sales change <sup>c</sup>	Standard of Living	Money taken out I	Money taken out II
Independent Variables									
Age		-		..			..	-	
Age <sup>2</sup>									
Gender		+						+ <sup>a</sup>	
Education	GHK					-		+++	++
Managerial human capital									+
Managerial capability		++++	+++++					+	
Technical capability		..			..	..			
Entrepreneurial capability		+++	+++	+				++	
Development	SHK <sub>E</sub>			..		-		..	
Parent business owners		-	-						
Business similarity								---	---
Task similarity									
Approval								-	-
Welfare	SHK <sub>v</sub>				+++				
Personal Development					+++				+
Independence									
Financial motives		+	+						
Reactive motives									
Expectation of competition									
Business change							--		+
Agriculture	Environment				--				
Manufacturing									
Construction									
Differentiation strategy			++	++			+		
Innovation strategy	Strategy					+++		-	-
Cost-based strategy									- <sup>a</sup>
10-49 Employees							++	++++	+++
50 or more Employees					+++++	+++++	+ <sup>a</sup>	+	+++
Business 1-5yrs old									
Business 6-10 yrs old									
Purchased business	Firm-specific								
No. of equity partners									
PORTFOLIO								+++++	-----
Model Significance		***	****	*	*	***	*	****	****
R <sup>2</sup>		0.27	0.31	0.23	0.23	0.28	0.23	0.42	0.36
Adjusted R <sup>2</sup>		0.14	0.19	0.09	0.09	0.13	0.10	0.31	0.24
N		221	221	218	218	194	221	216	216

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001  
- Negatively related at p < 0.10; -- negatively related at p < 0.05; --- negatively related at p < 0.01; ---- negatively related at p < 0.001; ----- negatively related at p < 0.0001  
+ Positively related at p < 0.10; ++ positively related at p < 0.05; +++ positively related at p < 0.01; ++++ positively related at p < 0.001; +++++ positively related at p < 0.0001  
<sup>a</sup> Variable significant in the control model only  
<sup>b</sup> Employment change was measured in terms of the log of the absolute change in total employment (1996-2001). The model with the percentage change in employment as the dependent variable was not significant  
<sup>c</sup> Sales change was measured in terms of the log of the absolute change in sales. The model with the percentage change in sales growth between 1996 and 1999 as the dependent variable was not significant.



## 8.5 CONCLUSION

The purpose of the current chapter was to test two hypotheses developed in Chapter 4. Hypothesis  $H_{14a}$  that habitual entrepreneurs will report higher levels of performance than novice entrepreneurs, whilst hypothesis  $H_{14b}$  suggests that among the habitual entrepreneurs, portfolio entrepreneurs will out-perform serial entrepreneurs. These hypotheses were tested for both firm-level and entrepreneur-level performance. The hypotheses were tested using bivariate and univariate analysis. To test for definitional sensitivities for both the business ownership experience variables and the performance were operationalised in a number of ways. With respect to firm performance, indicators included two weighted performance measures (weighted I and II), profit relative to competitors, employment change and sales change. With respect the entrepreneur performance current standard of living compared to when the entrepreneur first started the surveyed business, total amount of money taken out (money taken out I), and amount of money taken out per business owned (money taken out II) were used. To capture variations based on different definitions of business ownership experience, a simple habitual or not dummy variable, a continuous variable capturing the total number of businesses ever owned and four dummy variables to capture potential differences between those habitual entrepreneurs who had been previous successful and those that had failed, were used. Among the habitual entrepreneurs, a distinction was made between portfolio and serial entrepreneurs.

The summary of the findings discussed in the previous section show that there was no strong support for either of the above hypotheses, irrespective of the method used. If anything, the multivariate analysis, which controlled for a variety of variables known to be associated with firm performance, showed that business ownership experience was negatively related to a selection of performance indicators. Interpretation and reflections on these findings is provided in the following chapter.

## CHAPTER 9

### CONCLUSIONS

#### 9.1 INTRODUCTION

This thesis provides a study of the role played by business ownership experience in understanding entrepreneurial behaviour (i.e., information search, and opportunity identification, pursuit and exploitation) and performance. In particular, as identified in Chapter 1, the broad research question under study was presented as follows:

*What is the relationship between entrepreneurial experience (i.e., business ownership experience), human capital, entrepreneurial behaviour and outcomes?*

To address this research question, habitual (i.e., experienced) and novice (i.e., inexperienced) entrepreneurs were compared. In addition, differences between serial entrepreneurs (i.e., those who acquired business ownership experience sequentially) and portfolio entrepreneurs (i.e., those who acquired business ownership experience concurrently), were examined. By identifying differences between these groups of entrepreneurs, a significant source of heterogeneity amongst entrepreneurs, namely the extent and nature of business ownership experience, was identified. While casual observation suggests that entrepreneurs are heterogeneous, many studies have largely ignored this heterogeneity, potentially leading to biased results.

This study also addresses a number of limitations associated with previous studies on habitual entrepreneurship, thereby making a contribution to the current state of knowledge in the area. First, by focusing on the entrepreneur and the firm as the unit of analysis, the study avoids a singular focus on the firm at the expense of the entrepreneur. In many smaller businesses, the entrepreneur is often the key resource and driver of the organisation, and should therefore not be overlooked. Second, the study develops a theoretical framework for the study of habitual entrepreneurship. Previous studies have contributed towards but not provided a unifying framework for the study of business ownership experience. This study is couched within a human capital framework, whereby business ownership experience

is seen as one element of a broader set of general and specific human capital characteristics of the entrepreneur. By building on and extending human capital theory, a well-established and respected economic theory, the study offers a fruitful way of viewing entrepreneurs, their behaviour and associated outcomes. Guided by this framework, bivariate and multivariate analysis was conducted to test specific hypotheses. The use of the latter form of analysis offers an advancement on previous research in the area because multivariate analysis allows the researcher to control for the effects of dimensions of human capital other than business ownership experience. Consequently, the relative contribution of business ownership experience, vis-à-vis other dimensions of human capital was established. Further contributions made by this study will be outlined in sections 9.2 and 9.3, where the key findings of the study are reflected upon and implications for practitioners and policy-makers are presented, respectively. Details of the key findings of the study based on these last three chapters and interpretation of these findings now follows.

## **9.2 KEY FINDINGS AND INTERPRETATION**

In this section the key findings of the study are summarised and reflected upon. To guide this discussion, Table 9.1 provides a summary of the hypotheses tested based on the multivariate results. The following discussion is organised around four themes. The first three of these are based on the human capital framework and therefore relate to human capital, behavioural and performance-based differences between the habitual and novice and then serial and portfolio entrepreneurs. When examining the relationship between business ownership experience and behaviour and performance, several control variables were included. There were a number of significant relationships between the control variables and the dependent variables relating to behaviour and performance. These findings are also reported below.

**Table 9.1 Summary of Results**

Hypothesis Number and Description		Multivariate Results
H <sub>1a</sub>	Education <sub>habitual</sub> > Education <sub>novice</sub>	Not supported
H <sub>1b</sub>	Education <sub>portfolio</sub> > Education <sub>serial</sub>	Not supported
H <sub>2a</sub>	Managerial HK <sub>habitual</sub> > Managerial HK <sub>novice</sub>	Not supported
H <sub>2b</sub>	Managerial HK <sub>portfolio</sub> > Managerial HK <sub>serial</sub>	Not supported
H <sub>3a</sub>	Managerial Capability <sub>habitual</sub> > Managerial Capability <sub>novice</sub>	Not supported
H <sub>3b</sub>	Managerial Capability <sub>portfolio</sub> > Managerial Capability <sub>serial</sub>	Supported
H <sub>4a</sub>	Technical Capability <sub>habitual</sub> < Technical Capability <sub>novice</sub>	Supported
H <sub>4b</sub>	Technical Capability <sub>portfolio</sub> < Technical Capability <sub>serial</sub>	Not supported
H <sub>5a</sub>	Ent. Capability <sub>habitual</sub> > Ent. Capability <sub>novice</sub>	Not supported
H <sub>5b</sub>	Ent. Capability <sub>portfolio</sub> > Ent. Capability <sub>serial</sub>	Not supported
H <sub>6a</sub>	Business owner parent <sub>habitual</sub> > Business owner parent <sub>novice</sub>	Supported
H <sub>6b</sub>	Business owner parent <sub>portfolio</sub> > Business owner parent <sub>serial</sub>	Not supported
H <sub>7a</sub>	Alertness approach <sub>habitual</sub> > Alertness approach <sub>novice</sub>	Could not be tested
H <sub>7b</sub>	Alertness approach <sub>portfolio</sub> > Alertness approach <sub>serial</sub>	Could not be tested
H <sub>7c</sub>	Developmental approach <sub>habitual</sub> > Developmental approach <sub>novice</sub>	Not supported
H <sub>7d</sub>	Developmental approach <sub>portfolio</sub> < Developmental approach <sub>serial</sub>	Not supported
H <sub>8a</sub>	Business similarity <sub>habitual</sub> > Business similarity <sub>novice</sub>	Not supported
H <sub>8b</sub>	Business similarity <sub>portfolio</sub> > Business similarity <sub>serial</sub>	Not supported
H <sub>8c</sub>	Task similarity <sub>habitual</sub> > Task similarity <sub>novice</sub>	Not supported
H <sub>8d</sub>	Task similarity <sub>portfolio</sub> > Task similarity <sub>serial</sub>	Supported
H <sub>9a</sub>	Intrinsic motivation <sub>habitual</sub> > Intrinsic motivation <sub>novice</sub>	Supported
H <sub>9b</sub>	Intrinsic motivation <sub>portfolio</sub> < Intrinsic motivation <sub>serial</sub>	Supported
H <sub>10a</sub>	Info. Search <sub>habitual</sub> < Info. Search <sub>novice</sub>	Not supported
H <sub>10b</sub>	Info. Search <sub>portfolio</sub> < Info. Search <sub>serial</sub>	Not supported
H <sub>11a</sub>	Opp. Identification <sub>habitual</sub> > Opp. Identification <sub>novice</sub>	Supported
H <sub>11b</sub>	Opp. Identification <sub>portfolio</sub> > Opp. Identification <sub>serial</sub>	Supported
H <sub>12a</sub>	Opp. Pursuit <sub>habitual</sub> > Opp. Pursuit <sub>novice</sub>	Supported
H <sub>12b</sub>	Opp. Pursuit <sub>portfolio</sub> > Opp. Pursuit <sub>serial</sub>	Supported
H <sub>13a</sub>	Purchase <sub>habitual</sub> > Purchase <sub>novice</sub>	Not supported
H <sub>13b</sub>	Purchase <sub>portfolio</sub> < Purchase <sub>serial</sub>	Not supported
H <sub>14a</sub>	Performance <sub>habitual</sub> > Performance <sub>novice</sub>	Not supported
H <sub>14b</sub>	Performance <sub>portfolio</sub> > Performance <sub>serial</sub>	Not supported
H <sub>14c</sub>	Performance <sub>habitual – successful</sub> > Performance <sub>novice</sub>	Not supported
H <sub>14d</sub>	Performance <sub>habitual – failed</sub> > Performance <sub>novice</sub>	Not supported

### **9.2.1 Human capital-based differences between novice, habitual, serial and portfolio entrepreneurs**

In chapter 4, hypotheses were derived suggesting that other than the extent and nature of their business ownership experience, there would be differences between novice and habitual entrepreneurs (and among the habitual entrepreneurs between serial and portfolio entrepreneurs) in terms of their human capital characteristics. In particular, differences between these entrepreneurs were proposed in terms of their general human capital, entrepreneurship-specific human capital and venture-specific human capital. In Chapter 6, the results relating to the testing of these hypotheses were presented.

With respect to their general human capital characteristics, the results of this study suggest that habitual entrepreneurs are significantly more likely to be men and are less likely to report a high level of perceived technical capability (hypothesis H<sub>4a</sub>). Many novice entrepreneurs may have decided to embark on owning a business to exploit and commercialise their technical knowledge. While such technical knowledge may be useful for identifying a business opportunity the first time round, it may be limited as a source of future opportunities. Habitual entrepreneurs who have been through the experience of identifying and exploiting an opportunity before may be in a better position to realise that technical knowledge may not need to be embodied in the lead entrepreneur, that technical knowledge is not the only source of opportunities and that a boarder set of capabilities are required.

Among the habitual entrepreneurs, portfolio entrepreneurs were significantly more likely to be men and report high levels of perceived managerial capability (hypothesis H<sub>3b</sub>). The latter finding lends support to the view that, portfolio entrepreneurs who by definition own at least two businesses simultaneously, may appreciate the importance of managerial skills to facilitate multiple business ownership. The managerial capability variable was operationalised in terms of organising resources, tasks and people; being able to delegate effectively; and supervise, lead and motivate people. It is not surprising, therefore, that portfolio entrepreneurs were more likely to emphasise these skills. Further supporting this view was the finding relating to one aspect of human capital specific to the venture

(other aspects of this dimension of human capital will be discussed below). Portfolio entrepreneurs were significantly more likely than serial entrepreneurs to report task similarity between the surveyed business and their previous main job / business. To facilitate the simultaneous ownership of businesses, portfolio entrepreneur appear to be more likely to make sure that there is a high level of similarity between their previous main activity and their current business in terms of the knowledge, skills and abilities needed; managerial duties; technical-functional duties; and tasks performed.

With respect to entrepreneurship-specific human capital, there were no significant differences between novice and habitual entrepreneurs, or between serial and portfolio entrepreneurs. One exception was the finding that habitual entrepreneurs could be distinguished from their novice counterparts in terms of their parental background. Habitual entrepreneurs were significantly more likely to have (had) at least one parent who owned business(es). Observing parent(s) during childhood and indirectly experiencing business ownership (i.e., vicarious experience) may have the effect of forming a view of business ownership as a way of life, hence inducing continued / multiple business ownership.

Entrepreneurs can also be distinguished in terms of their venture-specific human capital. Evidence suggests that habitual entrepreneurs reported different motivations for business ownership than novice entrepreneurs. With respect to the surveyed business, habitual entrepreneurs were significantly more likely to have been motivated by intrinsic reasons than their novice counterparts (hypothesis H<sub>9a</sub>). Intrinsic motives relate to interest in and enjoyment derived from the task. One would expect that habitual entrepreneurs must enjoy the experience of owning an experience to justify their subsequent ownership. In particular, the habitual entrepreneurs in this study were more likely to be motivated by the desire for personal development. Among the habitual entrepreneurs, it was hypothesised that serial entrepreneurs would be more likely to be motivated by intrinsic reasons than portfolio entrepreneurs. Empirical evidence provides some support for this hypothesis (hypothesis H<sub>9b</sub>). Serial entrepreneurs were significantly more likely to be motivated by independence which has been identified as an intrinsic motive. This finding lends support to the view of serial entrepreneurs discussed in Chapter 3 that,

they are distinct from portfolio entrepreneurs based on their career anchor. However, serial entrepreneurs were significantly more likely to be motivated by ‘approval’ than portfolio entrepreneurs. The approval motive relates largely to the desire to gain recognition and approval from others, and therefore represents an extrinsic motive. This finding questions the suitability of such a broad categorisation of motives for entrepreneurship (i.e., intrinsic versus extrinsic motives).

The findings suggest that novice and habitual entrepreneurs are distinct from one another because of the level of their business ownership experience as well as other aspects of their human capital. The same applies to serial and portfolio entrepreneurs, who were distinct with regard to the nature of their business ownership experience and other dimensions of their human capital. Collectively, these findings strengthen the case for at least controlling for the effects of entrepreneur heterogeneity in future studies by distinguishing between novice, habitual, serial and portfolio entrepreneurs. The distinction between these different types of entrepreneurs does, however, suggest that there may be a need for theories exploring each type of entrepreneur, rather than generic theories.

### **9.2.2 Behavioural Differences between novice, habitual, serial and portfolio entrepreneurs**

Hypotheses relating to presumed behavioural differences between the novice and habitual and then serial and portfolio entrepreneurs, were tested in Chapter 7 (i.e.,  $H_{10a, b}$  through to  $H_{13a, b}$ ). Contrary to expectation, no significant relationship between business ownership experience and the number of information sources used, or information search intensity (hypothesis  $H_{10a}$ ) was detected. However, entrepreneurs with business ownership experience identified more opportunities (hypothesis  $H_{11a}$ ). These results did not appear to be sensitive to the use of different measures of business ownership experience (i.e., a dummy or a continuous measure of experience). Taken together, these findings suggest that habitual entrepreneurs are more efficient in their use of information when identifying business opportunities. With a given amount of information, habitual entrepreneurs appear to be more likely to identify an opportunity. This may partly be influenced by the type of information used. Though habitual entrepreneurs may not necessarily search for more

information, the information sources they use may be different. Indeed, the bivariate results in Chapter 7 show that there were significant differences between novice and habitual entrepreneurs in terms of information sources used, and the usefulness of various information sources. In particular, habitual entrepreneurs were significantly more likely to have used employee, consultants, financiers and national government sources than their novice counterparts. Further, habitual entrepreneurs found customers and financiers to be significantly less useful in identifying and evaluating opportunities than novice entrepreneurs.

Although portfolio entrepreneurs did not search for significantly more or less information (hypothesis  $H_{10b}$ ), they identified more opportunities over a five year period than their serial counterparts (hypothesis  $H_{11b}$ ). A significantly higher proportion of portfolio rather than serial entrepreneurs had used consultants and technical literature to identify and evaluate business opportunities. Further, portfolio entrepreneurs were significantly more likely than serial entrepreneurs to have found technical literature to be a useful source of information. Consequently, portfolio entrepreneurs appear to be more effective in translating a given amount of information into opportunities, possibly due to the nature of the information they use.

With regard to the pursuit and exploitation of opportunities, habitual entrepreneurs pursued a higher proportion of identified opportunities than novice entrepreneurs. Moreover, portfolio entrepreneurs pursued a higher proportion of opportunities than serial entrepreneurs. Consequently, hypotheses  $H_{12a}$  and  $H_{12b}$  were supported. However, no differences between novice and habitual or serial and portfolio entrepreneurs were detected in terms of the mode of opportunity exploitation with regard to the surveyed business.

The findings suggest some behavioural differences between different types of entrepreneurs due to their business ownership experience. Experienced (i.e., habitual) entrepreneurs, particularly portfolio entrepreneurs, appear to display greater opportunity identification and pursuit intensity than their novice or serial counterparts.



### **9.2.3 Performance-based Differences between novice, habitual, serial and portfolio entrepreneurs**

The last two hypotheses in Chapter 4 suggested that habitual entrepreneurs would outperform novice entrepreneurs, and that portfolio entrepreneurs would outperform serial entrepreneurs in terms of firm and entrepreneur performance (i.e., Hypotheses H<sub>14a</sub> and H<sub>14b</sub>). The results relating to this theme presented in Chapter 8 offered no unequivocal support for these hypotheses. Contrary to expectation, the relationship between business ownership experience and performance was negative in some instances. To examine the extent to which the results were influenced by definitional sensitivities, a variety of both business ownership experience and performance measures were used.

The multivariate analysis showed that business ownership experience was negatively related to a selection of performance indicators such as weighted performance I, profit relative to competitors, current standard of living and money taken out per business owned. The basic premise of the initial hypothesis was that as a result of their experience, habitual entrepreneurs would have more opportunities to learn, and subsequently modify their behaviour favourably to reflect this. However, as discussed in Chapter 3, there are some concerns surrounding the extent to which business ownership experience offers opportunities for learning. Individuals who have been previously successful may suffer from hubris, while those who failed may be in denial. Evidence from this study supports this view. Interestingly, even those habitual entrepreneurs who had been previously successful did not outperform novice entrepreneurs. In fact, those habitual entrepreneurs who had been previously successful reported significantly lower profitability relative to competitors. Further, habitual entrepreneurs who had previously 'failed' (i.e., had closed / sold more businesses because the performance was too low in relation to the entrepreneur's initial expectations or due to a bankruptcy / liquidation / receivership than due to an opportunity to realise a capital gain) reported significantly lower standards of living than novice entrepreneurs. With respect to all performance measures, the former group did not out-perform their novice counterparts. We can infer that it may be

difficult to learn from business ownership failures. The broader implications of these findings, particularly for policy-makers will be discussed below in Section 9.3

Among the habitual entrepreneurs, portfolio entrepreneurs reported that they had taken significantly more total money out of the business(es) they owned relative to their serial counterparts. However, per business, portfolio entrepreneurs took less money out than serial entrepreneurs. It may be the case that portfolio entrepreneurs own a collection of relatively smaller businesses or take out less money per business because they have (more) equity partners. There were no significant differences between portfolio and serial entrepreneurs in terms of other aspects of performance explored.

#### **9.2.4 Findings Relating to the Human Capital of the Entrepreneur**

Several human capital characteristics were found to be significantly related to the various themes explored above and are highlighted here. Findings relating to human capital in this study confirm the need to distinguish between various types of human capital. Most notably, general and specific human capital may have different associations with entrepreneurial behaviour (i.e., information search, opportunity identification, pursuit and exploitation) and performance.

The number of information sources used and information search intensity were found to be consistently related to one particular aspect of general human capital, namely managerial capability. Entrepreneurs with higher perceived levels of managerial capability were likely to search for information more intensively, and to use a greater number of information sources. This relationship held for both the full sample and for the sample of habitual entrepreneurs alone. As earlier intimated in Section 3.5, managers have been found to adopt a more systematic mode of information processing relative to entrepreneurs, who are more likely to adopt a heuristic information processing style. This evidence suggests that entrepreneurs who perceive themselves as having a strong managerial capability may be more likely to utilise systematic information processing and, therefore, rely on more extensive information search strategies. This is consistent with the findings in this study. Interestingly, entrepreneurs who reported higher levels of perceived

entrepreneurial capability also sought more information. This is reflected upon below. Overall, it may also be the case that those entrepreneurs with higher levels of managerial and entrepreneurial capability feel that they are in a better position to benefit from information search. Their superior capabilities provide them with the knowledge and / or confidence to not only identify opportunities but also to exploit them. Consequently, those entrepreneurs with higher levels of capabilities may appreciate the value of information (because they know how to utilise it) to a greater extent than those with lower levels of the same capabilities.

Among the variables relating to general human capital, the level of technical capability reported by the entrepreneur was also related to information search. In contrast to managerial and entrepreneurial capabilities, entrepreneurs reporting a higher technical capability searched for information less intensively. This may be because entrepreneurs who excel in a particular technical domain remain focused within that domain and, therefore, feel less need to search intensively, or are unaware of the need to assess market exigencies.

Two variables relating to entrepreneurship-specific human capital were significantly associated with information search. These were entrepreneurial capability and a positive attitude towards a developmental approach to opportunity identification. Entrepreneurs reporting a high level of entrepreneurial capability were found to search for information more intensively and use a greater number of information sources. This is an interesting finding given our measure of entrepreneurial capability, which included statements relating to an entrepreneur's perceived level of alertness to opportunities.<sup>1</sup> The alertness literature suggests that opportunities are not identified through information search. However, in this study, the entrepreneurs who considered themselves to be alert (i.e., had high perceived entrepreneurial capability) were more likely to have searched for information intensively. This finding suggests areas for future research and will be discussed below. Entrepreneurs reporting a positive attitude towards a developmental approach

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<sup>1</sup> The reader is reminded of the distinction between the entrepreneurial capability measure and the alertness measures. The latter measure related to an attitude towards opportunity identification but was dropped due to low reliability. The former, however, related to the entrepreneur's self-perceived ability to identify and exploit opportunities. The two measures are, therefore, distinct.

to opportunity identification were also found to search for information more intensively.

This is not particularly surprising because for entrepreneurs favouring a developmental approach, opportunities are likely to emerge / develop as information becomes available. Information search, in turn, can facilitate the development of opportunities.

Several dimensions of general human capital were found to be significantly associated with opportunity identification intensity (i.e., the number of opportunities identified). In particular, younger and male entrepreneurs, and those reporting high levels of managerial capability were associated with greater opportunity identification intensity. Further, for the full sample, but not for the habitual entrepreneur only sample, entrepreneurs with high levels of education and managerial human capital identified more opportunities. These findings suggest that entrepreneurs with higher levels of general human capital appear to be in a better position to identify opportunities. Among the entrepreneurship-specific human capital variables, not surprisingly, entrepreneurs reporting high levels of perceived entrepreneurial capability identified more opportunities. Because the measure of entrepreneurial capability used in this study was based on the entrepreneur's perception of their own capability, the above finding highlights the importance of self-efficacy and self-confidence.

Given the debate relating to whether opportunities can be identified / discovered through search (economic versus Kirznerian approaches), the finding that higher search intensity led to the identification of more opportunities is an important one. Interestingly, the higher the information search intensity, the smaller the proportion of opportunities pursued. This is a potentially important finding for policy makers, given the high proportion of businesses that fail. If greater levels of information allow entrepreneurs to rethink the feasibility of their ideas, it may be a cost-effective way of avoiding business failures if the type of information required can be identified. This issue will be discussed further in Section 9.3.

The mode of opportunity exploitation for the surveyed business opportunity was found to be related to a number of general and specific human capital characteristics. In particular, higher levels of managerial human capital, technical capability and entrepreneurial capability were associated with a lower likelihood of purchasing a business. One interpretation of this finding is that entrepreneurs with greater levels of human capital may feel that they have the necessary skills to start a business from scratch. Conversely, entrepreneurs with limited human capital may want to benefit from the existing infrastructure in place in an existing independent business. Advisors to entrepreneurs and financiers may benefit from ensuring an appropriate fit between the human capital of the entrepreneur and the mode of opportunity exploitation selected.

Firm and entrepreneur performance was explored using eight measures. Findings that were broadly consistent across most measures of performance will be discussed here. Consistent with tradition human capital theory, higher levels of education, managerial and entrepreneurial capability were associated with superior performance. Age, however, was associated with lower performance. Furthermore, this relationship appeared to be linear. Guided by Gimeno et al., (1997), the age of each respondent was measure in terms of the deviation from the mean age in the sample. Consequently, entrepreneurs below the age of 49 (mean age of the entrepreneurs in the sample) were likely to under-perform in relation to their older counterparts. Entrepreneurs reporting higher levels of technical capability were also found to report lower levels of performance. Once again, this may be because such individuals can be too focused on their technical area of expertise with insufficient awareness of the need for a broader skill set to achieve superior performance. Indeed, the literature (section 4.2.1.3) suggests that entrepreneurs need managerial, entrepreneurial and technical capabilities to be successful.

Finally, with respect to venture-specific human capital, the motives for business ownership were found to be related to firm performance. In particular, stronger welfare and personal development-based motives were associated with superior growth (employment growth in particular). A stronger emphasis on financial motives for business ownership was associated with superior weighted performance and higher levels of money taken out of the business(es) owned.

Overall, the presented evidence suggests a need to distinguish between different dimensions of human capital, as these various dimensions do not appear to consistently relate to different aspects of the entrepreneurial process and performance in the same way. Further, as Becker (1993) pointed out, human capital can include attributes that have a positive or negative influence on outcomes.

### **9.3 IMPLICATIONS FOR POLICY-MAKERS AND PRACTITIONERS**

Government intervention to support entrepreneurs and / or their businesses is widespread, particularly in developed countries (Bridge et al., 1998; Deakins, 1999; Storey, 2003). Despite the prevalence of policy initiatives of various forms, there is a continuing debate as to whether government intervention is actually justifiable (Storey, 1982; 1994; Bridge et al., 1998; Holtz-Eakin, 2000). One justification for support presented is that entrepreneurs and their businesses offer wider economic, social and other benefits and, therefore, government intervention is warranted to maximise these benefits (Bridge et al., 1998). This rationale has underpinned many policy initiatives which have aimed to increase the pool of entrepreneurs and / or businesses. In practice, however, it is difficult to ensure that such initiatives target those cases (businesses or entrepreneurs) that produce positive benefits for society and that public funds are not used to support 'projects' that would have been undertaken in the absence of support (Storey, 2003).

A key issue in policy development and implementation relates to the identification of the objectives of a particular policy initiative (Storey, 2000). In the absence of clearly specified objectives, the appropriate policy initiative and its subsequent evaluation cannot be established. If the objective of policy-makers is to maximise the returns to their investment (Bridge et al., 1998), they may potentially benefit from targeting their financial resources to 'winning businesses' (Storey, 1994) or 'winning entrepreneurs'. One of the purposes of this study was to explore whether a type of 'winning' or superior performing entrepreneur could be identified. Based on human capital theory, it was expected that experienced (habitual) entrepreneurs would outperform inexperienced novice entrepreneurs and would therefore qualify as 'winning entrepreneurs'. However, if habitual entrepreneurs'

businesses generally under-perform, there is a policy choice either to divert scarce resources away from these entrepreneurs; or develop policies that ensure the survival and development of businesses owned by them.

The bivariate analysis in this study suggested that habitual entrepreneurs reported higher levels of sales growth. However, when a variety of human-capital, firm and environment-based factors were controlled for in the multivariate analysis, this finding was not supported. Similarly, while the bivariate analysis suggested that portfolio entrepreneurs out-performed their serial counterparts, this was not supported by the multivariate analysis. Further, pair-wise analysis revealed that neither portfolio nor serial entrepreneurs out-performed novice entrepreneurs in terms of entrepreneur and firm performance.

As intimated earlier (section 9.2.3), neither those habitual entrepreneur who had been previously successful, nor those who had previously failed were able to out-perform novice entrepreneurs. This finding has implications for the debate surrounding the issue of failure amongst entrepreneurs. It has been argued that as an alternative to many European models, the UK should look to the US model where government intervention is minimal and business failure is an acceptable part of life (Storey, 2004). Some have gone as far as to claim that “failure is the fuel of success” (Ministry of Economic Affairs, 2001). This claim is consistent with Sitkin’s (1992) view that failure may offer an ideal opportunity to reflect on our exiting patterns of behaviour and pinpoint aspect of our thinking and behaviour that need to be modified. Presumably based on these views, policy initiatives to make it easier for entrepreneurs who have failed, to start businesses again have been undertaken such as the Enterprise Act (2002) which has attempted to make bankruptcy laws more lenient. However, the evidence in this thesis suggests caution. Experience (positive or negative) may not be the best teacher. Indeed, the basic premise of attribution theory (Heider, 1958; Zuckerman, 1979) is that individuals have a tendency to attribute successes to themselves and failures to external effects, inhibiting unbiased learning. Further, Shepherd (2003) argues that the loss of a business through failure can cause the feeling of grief. This leads to a negative emotional response interfering with the ability to learn from the events surrounding that loss. Policy makers require further information to establish if failure is as valuable as some groups think.

Further, they should carefully consider the wider implications of policy initiatives, such as relaxing bankruptcy laws. Gropp et al., (1997) found that in states where bankruptcy laws were more generous, entrepreneurs faced greater difficulties in raising funds. To overcome biases associated with learning from experience (especially failure), entrepreneurs may require guidance. Even Sitkin (1992) distinguished between failure and 'intelligent failure'. Various steps need to be taken to ensure that failure can be effectively learnt from.

Overall, therefore, the recommendation that financial support should be targeted towards certain groups of entrepreneurs based on the level and nature of their business ownership experience cannot be made on the basis of the findings from this study. However, support for entrepreneurs need not be of a financial nature. A distinction has been made between 'hard' financial support and 'soft' support (e.g., in the form of information, training, advice etc.) (Bridge et al., 1998; OECD, 1998). While the findings of this study do not allow us to distinguish between novice and habitual (or serial and portfolio) entrepreneurs in terms of performance, a number of findings do suggest differences in terms of their human capital and behaviour. Hence, though policy recommendations relating to 'hard' support cannot be made, the findings of the study have implications for 'soft' support.

The perceived capabilities reported by entrepreneurs were found to be significantly related to performance. In particular, managerial and entrepreneurial capabilities were positively related to performance, while technical capabilities were negatively related. Though there were no significant differences between novice and habitual entrepreneurs with respect to the former two capabilities, novice entrepreneurs reported significantly higher levels of technical capability. Similarly, serial entrepreneurs reported significantly lower levels of managerial capability relative to portfolio entrepreneurs. Policy-makers may take steps to make entrepreneurs aware of the need for a range of skills, including managerial and entrepreneurial capability. Novice entrepreneurs in particular may need to be made aware that simply being in possession of technical knowledge and a related idea does not guarantee a successful business. Support programmes that allow skills assessment and development may need to be designed. Existing evidence offers only



weak support for the view that generic training improves small firm performance (Storey, 2004). However, it has been argued that the targeted assistance in such fields as the assessment of business ideas and other business skills, allows the better tailoring of services to needs (OECD, 1998). A number of schemes such as The Consultancy Initiative were designed to offer support in the areas of marketing, business planning, product and service quality, among others (DTI, 1989). Support in the form of marketing consultancy has been found to be highly effective for certain types of businesses (Wren and Storey, 2002). Though these initiatives have now been terminated, similar schemes targeting the development of managerial and entrepreneurial skills may be introduced.

Habitual entrepreneurs were found to be distinct from novice entrepreneurs in terms of the extent to which they identified opportunities. In a given period, habitual entrepreneurs identified significantly more opportunities than their novice counterparts. Furthermore, among habitual entrepreneurs, portfolio entrepreneurs were associated with significantly higher opportunity identification intensity than serial entrepreneurs. In the short term, novice entrepreneurs are restricted in their ability to acquire business ownership experience, which has been found to facilitate opportunity identification. However, the results of the study identify additional factors favourably associated with opportunity identification intensity. Higher levels of education, managerial human capital, managerial capability, entrepreneurial capability and information search intensity were all associated with the identification of a greater number of opportunities. If one of the difficulties faced by novice and serial entrepreneurs is in terms of identifying opportunities, steps can be taken to improve various aspects of their human capital identified above. In particular, improving access to information by novice and serial entrepreneurs may facilitate greater opportunity identification. Higher levels of information search were associated with a higher number of opportunities identified. The evidence in this study showed that though habitual entrepreneurs (and portfolio entrepreneurs) did not search for more information than novice entrepreneurs, they did identify more opportunities. Business ownership experience and information search may, therefore, be substitutes.

Alongside the quantity of information, the nature of the information acquired may also be important. Habitual entrepreneurs, who were able to identify more opportunities than novice entrepreneurs, were more likely to use employees, consultants, financiers, and national government sources to access information. Portfolio entrepreneurs were more likely to use consultants and technical literature as sources of information. Additional research is warranted to explore whether individual external agencies provide or can provide appropriate information (i.e., depth and quality) to entrepreneurs in need of information to identify opportunities. Furthermore, entrepreneurs may benefit from additional network initiatives that allow the exchange of ideas. Habitual entrepreneurs (especially portfolio entrepreneurs) may be able to work in collaboration with novice entrepreneurs to facilitate business opportunity identification. It should be noted at this stage that although habitual (especially portfolio) entrepreneurs were able to identify more opportunities, there is a need for caution in making the recommendation that the information search and opportunity identification practices of these entrepreneurs should be emulated by other groups. While various policy initiatives may be introduced to improve opportunity identification, this would be meaningless if consideration was not given to the value creating potential of identified opportunities. This study did not examine the value of opportunities identified. The finding that habitual (and portfolio) entrepreneur did not out-perform novice and serial entrepreneurs in terms of the performance of the surveyed business, sheds some doubt on the actual quality of opportunities identified by the former group of entrepreneurs. This is an important area for future research and is discussed below.

#### **9.4 LIMITATIONS OF THE STUDY AND AREAS FOR FUTURE RESEARCH**

There are a number of limitations associated with this study, some of which originate from constraints on time and money, others from hindsight and the limited availability of public data on entrepreneurs and their businesses. Some of these limitations, however, offer avenues for future research. Both the limitations of this study and areas for future research will be discussed in this section.

The data collected for the purpose of this study rely on the responses from a single entrepreneur and can, therefore, be viewed as somewhat subjective. Ideally, a second party would verify at least part of the information collected about the entrepreneur and the surveyed business. For example, in many cases entrepreneurs use partners to establish or purchase their ventures. Data collected from partners could have been used to verify information relating to the business if time and resources had been available. The subjective nature of information collected can be particularly problematic when it comes to the performance of the business. While it can be insightful to examine performance from the perspective of the entrepreneur, it makes it difficult to compare businesses with each other. For example, each owner may view two businesses reporting similar levels of profitability very differently. In their study of business exits, Gimeno et al. (1997) demonstrated that entrepreneurs had different thresholds of performance depending to some extent on their human capital. In particular, entrepreneurs with superior levels of human capital were more likely to exit from a business at a given level of performance, as they tended to have higher expectations. This issue may be particularly important when trying to compare the performance of novice entrepreneurs with habitual entrepreneurs. Given differing views on what levels of business performance are acceptable, subjective measures of performance can be problematic, especially those relating to satisfaction. Ideally, objective data relating to the performance of the surveyed businesses would be collected and compared with the subjective indicators of performance reported by the entrepreneurs. Unfortunately, this kind of data is not widely available publicly and many business owners are reluctant to disclose financial performance data (e.g., level of profit).

Another limitation of this study was that it relied largely on data from a cross-sectional survey. While surveys offer a number of advantages (as discussed in Chapter 5), they can be limited in terms of their ability to capture details relating to the 'why' and 'how' aspects of a phenomenon. Future studies may benefit from the use of in-depth case studies (Ucbasaran et al., 2003b). In particular, while this study examined the nature of business ownership experiences of habitual entrepreneurs to some extent, much more is needed. Case studies can be used to examine each business owned by an entrepreneur and identify the motivations, opportunity identification process and performance relating to each business. Case studies may

provide insights into the extent to which learning takes place between ventures owned by habitual entrepreneurs. Further, longitudinal case studies may overcome problems of endogeneity associated with cross-sectional studies.

Longitudinal studies (using case studies or longitudinal datasets) offer the advantage of being able to establish causal relationships between human capital, entrepreneurial behaviour and performance. Longitudinal studies monitoring the 'stock' of skills and experience of each type of entrepreneur, and the 'flows' across the entrepreneur categories would provide rich process and contextual evidence. They, for example, could explore the characteristics and skills associated with novice entrepreneurs who are able to transform into serial or portfolio entrepreneurs. Also, studies might focus on the initiation processes leading to the ownership of subsequent ventures by experienced entrepreneurs, and why they accept or reject particular types of deals. Similarly, there is a need to understand how serial and portfolio entrepreneurs learn from their previous business ownership experiences. For the purposes of understanding wealth creation, there is a need to analyse the 'quality', rather than just the 'quantity' of prior business ownership experience. In addition, there is a need for research that analyses the total economic contribution of portfolio, serial and novice entrepreneurs to local and national economies.

While certain groups of entrepreneurs (i.e., habitual entrepreneurs and in particular portfolio entrepreneurs) may identify a greater number of opportunities in a given period, this offers minimal insight as to the nature and value of identified opportunities. This constitutes a limitation of the current study but offers avenues for future research. There is considerable debate surrounding how the value of an opportunity can be assessed. Much of this debate stems from contrasting views of what constitutes an entrepreneurial opportunity. Shane and Venkataraman (2000: 220) use Casson's definition of entrepreneurial opportunities: "those situations in which new goods, services, raw materials, and organizing methods can be introduced and sold at greater than their cost of production". Conversely, Singh (2000) argues that this definition represents a post-hoc view, based on criteria stipulating profitability as a requirement for entrepreneurial opportunities. It can be argued that such post-hoc approaches do not control for confounding factors (e.g., environment, mode of exploitation, managerial expertise etc.), which can influence

the performance of the venture. Instead, ways of assessing the opportunity ex-ante may need to be used. Fiet and Migliore (2001) and Fiet et al., (2003) used a panel to rank ideas based on the panel's assessment of whether the opportunity represents a concept that could create and sustain a competitive advantage. Such an approach, while desirable, was not feasible for the current study as the method is extremely time-consuming, costly, and is also based on the panel's subjective opinion. Chandler and Hanks (1994) used a six-item scale to measure the quality of an opportunity. This scale, however, was based largely on the respondents' view on the competitive environment and the venture's ability to sustain a competitive advantage. It did not, however, provide details as to whether the opportunity had the capacity to create a competitive advantage in the first place. Alternative ways of assessing the value of an opportunity may include the amount of initial finance used (Cooper et al., 1995) and the use of partners, as these indicate the willingness of other parties to be involved in the venture presumably because it is deemed viable. Cooper et al. (1994) argued that ventures with higher levels / proportions of external financing can represent more promising propositions that passed the screening of lenders and investors.

The omission of finance-related issues may be considered a limitation of this study. In many cases experienced entrepreneurs may have been able to accumulate financial resources or due to their track record are in a better position to acquire funds (Shane and Khurana, 2003). Cressy (1996) argues that human capital factors are correlated with both start-up performance (measured in terms of survival) and financial assets, which can give the false impression that initial finance is a determinant of performance and that start-ups are finance-constrained. Cressy shows, however, that human capital is the 'true' determinant of survival and that the correlation between financial capital and survival is spurious. Further research exploring the relative importance of human capital and financial capital in relation to alternative performance measures is warranted. In addition, the reluctance by some venture capitalists to provide funds to those entrepreneurs they have funded before (Wright et al., 1997b) is also an area worthy of further examination.

In this study, the entrepreneurs who considered themselves to be alert (i.e., had high entrepreneurial capability) were more likely to have searched for

information intensively. This finding suggests areas for further research. There is a need to explore the relationship between information search and alertness. While Kirzner (1973) argued that systematic search for information would not lead to an opportunity, the entrepreneur still needs to be alert to or alerted by information / opportunities. Future research may benefit from a distinction between systematic search for information and scanning the informational environment with no particular opportunity in mind. Scanning may allow the entrepreneur to piece together disparate information to generate an idea even though there was no idea from the onset. This suggests that the opportunity identification stage itself may involve a number of stages such as scanning the informational environment, the actual idea stage and then systematic search to refine the idea.

Business ownership experience has been viewed as one aspect of human capital specific to entrepreneurship. Future researchers may benefit from examining the extent to which business ownership experience is a substitute, or a complement to other dimensions of human capital. For example, experience may amplify the effects of other aspects of human capital, such as managerial human capital and education. The use of interaction variables between business ownership experience and other human capital characteristics may prove useful. By exploring the extent to which business ownership experience acts as a moderator or mediator variable (Cohen et al., 2003), possible substitutes for business ownership experience may be identified. Studies such as that by Chandler and Hanks (1998), where the substitutability of human capital and financial capital were examined, may act as a useful guide.

Though this study attempted to explore definitional sensitivities by measuring business ownership in a variety of different ways, other definitions of business ownership experience could be used. Building on the human capital framework developed in this study, Ucbasaran et al., (2003a) focus on the cognitive dimensions of human capital. Just like the aspects of human capital described in the current study, cognition is also likely to be associated with behaviour and performance. Though studies have suggested that entrepreneurs possess different cognitive characteristics than other groups, especially managers (e.g., Busenitz and Barney, 1997), there has been limited examination into the extent to which cognitive

heterogeneity exists among entrepreneurs. Building on this central tenet Ucbasaran (2004) develops a typology of entrepreneurs. A distinction between 'experienced' and 'expert' habitual entrepreneurs and between 'pure' and 'transient' novice entrepreneurs is proposed. While some novice entrepreneurs have no intention of becoming a habitual entrepreneur, others do. Only 22% of novice entrepreneurs in the sample used for the purposes of this study reported that they intended to establish or purchase a business in the future. Accordingly, while 'pure' novice entrepreneurs represent the group of novice entrepreneurs that will remain one-time entrepreneurs, 'transient' novice entrepreneurs will at least attempt to become habitual entrepreneurs. These two types of novice entrepreneurs may display different cognitive characteristics. Further, a distinction is made between 'experienced' and 'expert' entrepreneurs. While both groups have the benefit of experience, expert entrepreneurs are more effective due to their cognitive characteristics, which allow them to learn effectively from their experiences. In contrast 'experienced' habitual entrepreneurs may be subject to cognitive biases and limitations. Longitudinal studies can allow us to determine the extent to which cognitive characteristics of an entrepreneur can predict future behaviour and performance.

A simplistic though not yet utilised definition of an expert habitual entrepreneur could be one who has owned three or more successful businesses. One of the potential problems with defining a habitual entrepreneur in terms of two business ownership experiences is that it does not control for luck and external factors. An entrepreneur may have been successful due to factors outside his/her doing the first time creating an initial stock of wealth for another business. This second business may therefore be 'protected' by a buffer of financial resources. Therefore, to be considered a successful habitual entrepreneur or an 'expert' entrepreneur, one may benefit from using a rule of three successful businesses. There may be a need to experiment with alternative definitions of expert entrepreneurs. More importantly, however, examining the cognitive characteristics of 'expert' habitual entrepreneurs in comparison to other groups may be a promising area of future research with important implications for policy-makers and practitioners.

## 9.5 CONCLUSION

This study has explored the relationship between business ownership experience, human capital, entrepreneurial behaviour and performance. In doing so differences between novice and habitual entrepreneurs on these dimensions have been established. Further, among habitual entrepreneurs, it has been shown that serial and portfolio entrepreneurs differ in their human capital profile and behaviour. Consequently, the study has sought to enhance our understanding of the heterogeneity of entrepreneurs by utilising a human capital framework. Beyond this contribution, the study has also identified a number of human capital characteristics of entrepreneurs that are associated with firm and entrepreneur performance.

On the basis of these empirical findings, a number of policy implications and recommendations have been presented. While the evidence in this study did not allow us to prescribe financial support towards a particular group of entrepreneurs, it did lead to suggestions for 'soft' support. In particular, recent moves towards supporting entrepreneurs who have failed were questioned. Based on relationships between various dimensions of human capital and performance, recommendations for making available tailored training for entrepreneurs were presented. Further, given the positive relationship between information search and opportunity identification, improving access to various sources of information was suggested. The need for further research to refine these policy suggestions has been highlighted.

It is felt that the study has made some progress towards advancing our knowledge of entrepreneurs, their behaviours and performance outcomes. Further, the study maps out the agenda for future research in the area.



# **APPENDIX I**



**Institute for Enterprise and  
Innovation**

**Business School**

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DATE

Dear

### **Survey of Business Owners**

The new Institute for Enterprise and Innovation based in the Business School at the University of Nottingham is supporting a variety of research activities to improve our understanding of the nature of entrepreneurship and the behaviour of entrepreneurs. This will be used to inform the design of our own activities in support of entrepreneurship as well as strategies adopted by Government and the private sector as appropriate. We would be particularly grateful if you could help us on a current project that focuses upon the characteristics and behaviour of business owners by filling in the attached questionnaire.

We appreciate that time is a very scarce resource and have therefore tried to keep it as short as possible. Most questions require you to simply tick an appropriate box or circle an answer. However, in places we are asking for your opinion and impressions. Do not feel constrained by the size of the spaces left as there is space at the end of the questionnaire which can be used to expand on any of your answers. As full a reply as possible is welcomed.

All information collected from respondents to this questionnaire will be treated in the strictest confidence. We require this information purely for research purposes and any resulting report will make reference only to aggregated results. No reference will be made to any individual respondent's replies. A stamped addressed envelope is enclosed for your reply.

Please feel free to contact us if you have any queries or wish to discuss any particular points in more detail.

Thank you very much for your help in this matter, it is much appreciated.

Yours sincerely,

Deniz Ucbasaran

Professor Paul Westhead

## SURVEY OF BUSINESS OWNERS

This questionnaire should be completed by the key individual who is the most influential in the business. He or she could be the principal owner of the business. Your individual confidentiality will be strictly maintained. We appreciate your co-operation.

**Would you like to receive a copy of the summary report for this survey?**

Yes [ ]      No [ ]

### **A. Personal Background of the Principal Owner / Founder**

**A1. Are you the** (please tick all appropriate boxes)...

*Founder of the business*    [ ]    *Principal owner*    [ ]    *Managing director*    [ ]  
*Chairman*                      [ ]    *Other*                      [ ]

Please specify if other.....

**A2. Age of principal owner in years?**                      .....

**A3. Gender of owner.**    *Male*    [ ]                      *Female*    [ ]

**A4. Did either of your parents own a business?**                      *Yes*    [ ]                      *No*    [ ]

**A5. Are either of your parents immigrants to the UK?** *Yes*    [ ]                      *No*    [ ]

**A6. How many different organisations have you worked for full-time? .....**

**A7. What was the occupation of your parents (i.e. the main income earner) during your childhood?**

*Business owner*    [ ]    *Manager*    [ ]    *Clerical*                      [ ]  
*Farmer*                      [ ]    *Professional*    [ ]    *Skilled employee*                      [ ]  
*Manual*                      [ ]    *Unemployed*    [ ]

**A8. What is your highest level of education? Please tick.**

*Compulsory school*                      [ ]    *Technical qualification*                      [ ]

*Undergraduate 'first' university degree*                      [ ]    *Postgraduate university degree*                      [ ]

*Post degree professional degree*                      [ ]    *Other qualification*                      [ ]  
.....

**A9. What was your job status immediately before starting your first business? Please tick.**

*Managerial*                      [ ]    *Professional*                      [ ]    *Manual*                      [ ]

*Unemployed*                      [ ]    *Supervisory*                      [ ]    *Self-employed*                      [ ]

*Student*                      [ ]    *Housewife*                      [ ]

**B. General Business Background**

**B1. How did you gain an ownership stake in this business?**

*Established the business* [ ]                      *Inherited the business* [ ]  
*Purchased or acquired an equity stake in the business* [ ]

**B2. Did you start, purchase or inherit this business alone or with other equity partners? Please tick.**

*Alone* [ ]      *With others* [ ]  
If with others, how many equity partners did you have?.....

**B3. Currently how many equity partners does this business have?.....**

**B4. What is the main product produced or service provided by this business?**

.....

**B5. What is the legal status of this business? Please tick as appropriate.**

Sole proprietorship [ ]      Partnership [ ]      Unlimited company [ ]  
Private company [ ]      Other.....[ ]

**B6. Is this business a family owned business (i.e. more than 50% of voting shares are owned by a single family related by blood or marriage)?**    *Yes* [ ]    *No* [ ]

**B7. Is this business a subsidiary of another business?**    *Yes* [ ]    *No* [ ]

**B8. Please indicate the year this business received its first order / customer.....**

**B9. How many competitors does this business have? Please tick as appropriate.**

None [ ]    1-5 [ ]    6-10 [ ]    11-25 [ ]    26-100 [ ]    101 or more [ ]

**C. Outcomes**

**C1. How many people are / have been employed in this business (including owners)?**

	When you received your first order	In 1996	Currently
<i>Full-time</i>			
<i>Part-time</i> (less than 30 hours per week)			
<i>Casual</i>			

**C2. What was the value of the gross sales for this business (to the nearest thousand) in**

(a) 1996? £.....                      (b) 1999? £.....

**C3. What percentage of your gross sales were exported outside of the United Kingdom in 1999?.....%**

**C4. For the last financial year, has the business operated at: (please tick)**

A loss [ ] Break even [ ] A profit [ ]

**C5. How do you rate the current profit performance (operating profit) of this business relative to your competitors? Please tick as appropriate.**

Very poor [ ] Poor [ ] About average [ ] Good [ ] Very good [ ]

**C6. Please indicate the degree of *importance* your business attaches to each of the following performance criteria over the past three years?**

	Very little importance	Some importance	Moderate importance	Highly important	Extremely important
Sales level	1	2	3	4	5
Sales growth rate	1	2	3	4	5
Cash flow	1	2	3	4	5
Return on shareholder equity	1	2	3	4	5
Gross profit margin	1	2	3	4	5
Net profit from operations	1	2	3	4	5
Business survival	1	2	3	4	5
Reputation and status of the business	1	2	3	4	5
Employee security	1	2	3	4	5
Independent ownership of the business	1	2	3	4	5
Employment for family members	1	2	3	4	5
Maintain / enhance my lifestyle	1	2	3	4	5

**C7. Over the past three years, please indicate the extent to which you have been *satisfied* with the following?**

	Highly dissatisfied	Dissatisfied	Indifferent	Satisfied	Highly satisfied
Sales level	1	2	3	4	5
Sales growth rate	1	2	3	4	5
Cash flow	1	2	3	4	5
Return on shareholder equity	1	2	3	4	5
Gross profit margin	1	2	3	4	5
Net profit from operations	1	2	3	4	5
Business survival	1	2	3	4	5
Reputation and status of the business	1	2	3	4	5
Employee security	1	2	3	4	5
Independent ownership of the business	1	2	3	4	5
Employment for family members	1	2	3	4	5
Maintain / enhance my lifestyle	1	2	3	4	5
Current standard of living	1	2	3	4	5

**C8. Over the last twelve months, has this business increased its market share in the UK?**

To no extent [ ] To little extent [ ] To some extent [ ]  
To a great extent [ ] To a very great extent [ ]

**C9. How would you describe your standard of living today compared with when you first established / owned this business?**

Very poor [ ] Poor [ ] About average [ ] Good [ ] Very good [ ]

**C10. What sources of income do you have? Please tick all that are applicable.**

*This business alone* [ ] *Part-time or irregular jobs outside this business* [ ]  
*Full-time job outside this business* [ ] *Income from other businesses* [ ]  
*Other (please specify).....* [ ]  
*I have an equity stake in*

**C11. How much money have you been able to take out of the business(es) you own in the previous 12 months?**

*Less than £5,000* [ ] *£5,001 - £10,000* [ ] *£10,001 - £15,000* [ ]  
*£15,001 - £25,000* [ ] *£25,001 - £35,000* [ ] *£35,001 - £50,000* [ ]  
*£50,001 - £75,000* [ ] *£75,001 - £100,000* [ ] *more than £100,000* [ ]

**D. Reasons Leading to Business Ownership**

**D1. To what extent were the following reasons important when you established / purchased or inherited this business? Please circle.**

	To no extent	To little extent	To some extent	To a great extent	To a very great extent
1. To be challenged by the problems and opportunities of starting and growing a new business	1	2	3	4	5
2. To continue learning	1	2	3	4	5
3. To be innovative and be in the forefront of technological development	1	2	3	4	5
4. To develop an idea for a product	1	2	3	4	5
5. To follow the example of a person I admire	1	2	3	4	5
6. To have considerable freedom to adopt my own approach to my work	1	2	3	4	5
7. To control my own time	1	2	3	4	5
8. It made sense at that time in my life	1	2	3	4	5
9. To take advantage of an opportunity that appeared	1	2	3	4	5
10. To give myself, my spouse, and children security	1	2	3	4	5
11. To generate personal wealth (earnings or capital gain)	1	2	3	4	5
12. To have access to indirect benefits such as tax exemptions	1	2	3	4	5
13. As a vehicle to reduce the burden of taxes I face	1	2	3	4	5
14. To have greater flexibility for my personal and family life	1	2	3	4	5
15. To achieve something and get recognition for it	1	2	3	4	5
16. To achieve a higher position for myself in society	1	2	3	4	5
17. To increase the status and prestige of my family	1	2	3	4	5
18. To be respected by my friends	1	2	3	4	5
19. To have more influence in my community	1	2	3	4	5
20. To continue a family tradition	1	2	3	4	5
21. To contribute to the welfare of my relatives	1	2	3	4	5
22. To contribute to the welfare of the community I live in	1	2	3	4	5
23. To contribute to the welfare of people with the same background as me	1	2	3	4	5
24. I was unemployed / made redundant	1	2	3	4	5

From the above reasons, which would you say was the **main** reason for establishing / purchasing / inheriting this business?  
Response number: .....

**E. Business Ownership History**

**E1. Please indicate the number of businesses you have owned by filling in the table below**

Number of businesses:	Number of businesses with a <b>majority</b> equity stake (i.e. 50% or more ordinary shares)	Number of businesses with a <b>minority</b> equity stake (i.e. less than 50% ordinary shares)
<b>TOTAL NUMBER OF BUSINESSES EVER</b>		
❖ Established		
❖ Inherited		
❖ Purchased		
<b>NUMBER OF CURRENT BUSINESSES</b>		
❖ Established		
❖ Inherited		
❖ Purchased		
<b>NUMBER OF BUSINESSES ‘EXITED’ through</b>		
❖ Closure		
❖ Sale of business		
❖ Other forms of exit		

**E2. Please indicate the number of businesses that you sold or closed for the following reasons.**

	<b>Closed</b>	<b>Sold</b>
The performance of the business was too low in relation to my expectations		
Bankruptcy / liquidation / receivership		
There was an opportunity to realise a capital gain		
A better opportunity presented itself		
Other reason.....		

**F. Search and Opportunity Recognition**

**F1. To what extent do you agree or disagree with the following statements. Please circle.**

	<b>Strongly agree</b>	<b>Partly agree</b>	<b>Neutral</b>	<b>Partly disagree</b>	<b>Strongly disagree</b>
I have a special alertness or sensitivity towards spotting opportunities	1	2	3	4	5
I would describe myself as opportunistic	1	2	3	4	5
I can usually spot a real opportunity better than professional researchers / analysts	1	2	3	4	5
I enjoy just thinking about and / or looking for new business opportunities	1	2	3	4	5
New business opportunities often arise in connection with a solution to a specific problem	1	2	3	4	5
Ideas for new business opportunities do not require specific market or technological knowledge	1	2	3	4	5
New business opportunities normally arise due to market or technological changes	1	2	3	4	5

**F2. To what extent do you agree or disagree with the following statements? Please circle.**

	Strongly agree	Partly agree	Neutral	Partly disagree	Strongly disagree
I accurately perceive unmet customer needs	1	2	3	4	5
One of my greatest strengths is identifying goods and services people want	1	2	3	4	5
One of my greatest strengths is my ability to seize high quality business opportunities	1	2	3	4	5
One of my greatest strengths is achieving results by organising and motivating people	1	2	3	4	5
One of my greatest strengths is organising resources and co-ordinating tasks	1	2	3	4	5
One of my greatest strengths is my ability to delegate effectively	1	2	3	4	5
One of my greatest strengths is my ability to supervise, influence, and lead people	1	2	3	4	5
I make resource allocation decisions that achieve maximum results with limited resources	1	2	3	4	5
One of my greatest strengths is my expertise in a technical or functional area	1	2	3	4	5
One of my greatest strengths is my ability to develop goods or services that are technically superior	1	2	3	4	5
Identifying opportunities is really several learning steps over time	1	2	3	4	5
It is very important that the idea represents a concept which can be developed over time	1	2	3	4	5
The problem is not to identify the idea, but to obtain capital and other resources	1	2	3	4	5
The business opportunities I have identified over the years have been largely unrelated	1	2	3	4	5
The consideration of one opportunity often leads to other opportunities	1	2	3	4	5
Identifying good opportunities usually requires "immersion" in a particular market	1	2	3	4	5
The idea behind this business seemed to be thrust upon us	1	2	3	4	5
There was a deliberate effort to search for an idea to start this business	1	2	3	4	5
The business concept was developed while I was in conversations with other people	1	2	3	4	5
The business concept was developed while I was employed by another firm	1	2	3	4	5
The business idea was strictly mine alone	1	2	3	4	5

**F3. How many opportunities for creating or purchasing a business have you identified ('spotted') within the last 5 years? If your answer is '0', please go to question 22.**

0 [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6-10 [ ]  
more than 10 [ ]

**F4. How many opportunities for creating and purchasing a business have you pursued (i.e. committed time and financial resources) within the last 5 years?**

0 [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6-10 [ ]  
more than 10 [ ]



**F5. How many of these pursued opportunities for new businesses do you perceive to be successes (in terms of meeting your original expectations)?**

0 [ ]    1 [ ]    2 [ ]    3 [ ]    4 [ ]    5 [ ]    6-10 [ ]  
more than 10 [ ]

**F6. How many of these pursued opportunities were unrelated (in terms of product and industry) to this business?**

0 [ ]    1 [ ]    2 [ ]    3 [ ]    4 [ ]    5 [ ]    6-10 [ ]  
more than 10 [ ]

**F7. To what extent do you agree or disagree with the following statements. Please circle.**

	Strongly agree	Partly agree	Neutral	Partly disagree	Strongly disagree
The idea behind this business was result of a deliberate effort to search for an idea	1	2	3	4	5
The idea behind this business was a result of an accidental process that just happened to uncover the idea for the business	1	2	3	4	5
The idea for my business was strictly market driven	1	2	3	4	5
The idea for my business was technology driven	1	2	3	4	5
The idea for my business was driven by my ability to obtain funds / finance	1	2	3	4	5

**F8. Have you used any of the following sources of information? Please indicate how useful they were for identifying and evaluating business opportunities.**

	Did not use	Not at all useful	Not useful	Neither not useful nor useful	Useful	Very useful
Suppliers	0	1	2	3	4	5
Employees	0	1	2	3	4	5
Customers and clients	0	1	2	3	4	5
Other business owners	0	1	2	3	4	5
Consultants	0	1	2	3	4	5
Bankers / venture capitalists / business angels	0	1	2	3	4	5
Personal friends	0	1	2	3	4	5
Family	0	1	2	3	4	5
Magazines / newspapers	0	1	2	3	4	5
Trade publications	0	1	2	3	4	5
Patent filings	0	1	2	3	4	5
Technical literature	0	1	2	3	4	5
National government sources	0	1	2	3	4	5
Local enterprise / development agency (e.g. Business Link / TEC / LEC)	0	1	2	3	4	5
Other, please specify: .....	0	1	2	3	4	5

**F9. How similar is this business to that of your previous main business / job in terms of:**

	No difference	Very similar	Similar	Different	Very different
Product or service	1	2	3	4	5
Customers	1	2	3	4	5
Suppliers	1	2	3	4	5
Technology	1	2	3	4	5
Financiers	1	2	3	4	5
Competitors	1	2	3	4	5
Knowledge, skills and abilities needed	1	2	3	4	5
Managerial duties	1	2	3	4	5
Technical-functional duties	1	2	3	4	5
Task performed	1	2	3	4	5

**F10. Please answer the following questions in relation to this business. Please tick as appropriate.**

	No	Yes
Have you introduced a new product or a new quality of an existing product?		
Have you introduced a new method of production or modified an existing method?		
Have you found a new market or employed a new marketing strategy in an existing market?		
Have you found a new source of supply?		
Have you found new ways of managing finance?		
Have you developed new structures, systems, or procedures in your organisation?		
Have you introduced a new culture especially through the induction of innovative people at lower levels?		
Have you used new ways of managing and developing personnel?		
Have you developed new ways of managing quality control and R&D?		
Have you found new ways of dealing with government and other external agencies?		

**G. Business Strategy**

**G1. To what extent do you agree with the following statements in relation to this business?**

Please circle.

	Strongly agree	Partially agree	Neutral	Partially disagree	Strongly disagree
We strive to be the first to have products available	1	2	3	4	5
We stress new product / service development	1	2	3	4	5
We engage in novel and innovative marketing techniques	1	2	3	4	5
We invest heavily in Research & Development (R&D)	1	2	3	4	5
We emphasise strict quality control	1	2	3	4	5
We will go to almost any length to meet customer requirements	1	2	3	4	5
We emphasise our superior customer service	1	2	3	4	5
We focus on providing only highest quality goods and services	1	2	3	4	5
We emphasise that customer needs always come first	1	2	3	4	5
We emphasis cost reduction in all facets of business operations	1	2	3	4	5
We strongly emphasise improvement in employee productivity and operations efficiency	1	2	3	4	5
We have developed lower production costs via process innovation	1	2	3	4	5
We emphasise the need to grow the business	1	2	3	4	5
We emphasise the need to grow the business by acquiring new businesses	1	2	3	4	5
We emphasise the need to grow the business by using profits generated by the business	1	2	3	4	5
We have sold equity in the business to encourage growth	1	2	3	4	5
We strive to form alliances with other businesses	1	2	3	4	5
We actively recruit the most talented people	1	2	3	4	5
We invest heavily in providing formal job related training for our employees	1	2	3	4	5
We strive to turn around poor performance and develop a stronger business	1	2	3	4	5

**THANK YOU FOR YOUR TIME, SUPPORT AND INSIGHTS**

Please use the enclosed self-addressed pre-paid envelope to mail your survey.

If you have other comments, please share them with us.

## **APPENDIX II**

Table I Correlation Matrix relating to Model 1 (n= 518)

Variable	Mean	S.D.	VIF	1	2	3	4	5	6	7	8	9
1. Age	0.85	9.60	1.18									
2. Age <sup>2</sup>	-0.96	124.02	1.13	-0.17								
3. Gender	92.83	0.33	1.15	0.15	-0.10							
4. Education	0.52	0.81	1.08	-0.05	-0.08	-0.03						
5. Managerial human capital	10.04	5.70	1.16	0.19	-0.20	0.06	0.06					
6. Managerial capability	-0.05	1.02	1.23	-0.05	0.06	0.03	-0.04	0.06				
7. Technical capability	0.01	1.02	1.20	0.02	0.01	0.17	0.04	-0.02	0.00			
8. Entrepreneurial capability	0.01	1.00	1.18	-0.03	-0.02	-0.09	-0.09	0.14	-0.03	-0.02		
9. Parent business owners	0.36	0.48	1.09	-0.03	0.08	0.01	0.05	-0.10	0.07	-0.06	0.02	
10. Development	-0.01	0.97	1.33	-0.16	-0.02	-0.04	-0.02	0.04	0.27	0.25	0.18	0.03
11. Approval	-0.01	1.00	1.08	-0.16	0.13	-0.11	-0.12	-0.06	0.09	-0.03	0.05	0.01
12. Welfare	-0.05	0.97	1.10	0.08	0.08	-0.02	-0.01	-0.09	0.04	-0.05	0.08	0.20
13. Personal development	-0.01	0.99	1.24	-0.05	0.03	-0.01	0.08	0.12	0.28	0.17	0.17	0.07
14. Independence	-0.01	0.99	1.10	-0.10	-0.09	-0.15	0.07	0.03	0.05	0.04	0.10	-0.07
15. Financial	-0.01	1.00	1.07	-0.03	-0.09	0.12	-0.02	0.07	0.14	0.03	0.08	-0.05
16. Reactive	0.01	1.00	1.06	-0.07	0.00	0.00	-0.01	-0.09	0.06	0.01	0.11	0.04
17. Business similarity	0.01	0.99	1.12	0.05	-0.09	-0.16	0.09	0.03	0.00	-0.11	-0.04	0.04
18. Task similarity	0.00	0.99	1.05	-0.05	-0.03	-0.02	-0.07	-0.09	0.01	-0.04	-0.08	-0.06

Variable	10	11	12	13	14	15	16	17
11. Approval	0.07							
12. Welfare	0.04	-0.02						
13. Personal development	0.24	-0.01	-0.05					
14. Independence	0.17	0.02	0.02	-0.02				
15. Financial	0.10	-0.01	-0.01	0.00	-0.04			
16. Reactive	0.04	-0.03	0.01	0.01	-0.01	-0.04		
17. Business similarity	0.09	-0.05	-0.06	0.07	-0.03	-0.02	-0.13	
18. Task similarity	0.05	-0.01	0.03	0.02	0.04	-0.04	0.01	-0.01

Note. *r* has to be 0.09 or higher to be significant at *p* < 0.05 and *r* has to be 0.12 or higher to be significant at *p* < 0.01 (two-tailed)

Table II Correlation Matrix relating to Model 2 (n= 281)

Variable	Mean	S.D.	VIF	1	2	3	4	5	6	7	8	9
1. Age	-0.59	9.27	1.23									
2. Age <sup>2</sup>	86.02	115.41	1.17	-0.28								
3. Gender	0.90	0.30	1.15	0.12	-0.07							
4. Education	0.56	0.83	1.13	-0.06	-0.04	-0.02						
5. Managerial human capital	10.43	5.91	1.16	0.18	-0.19	0.05	0.09					
6. Managerial capability	-0.07	1.05	1.25	-0.10	0.04	0.06	-0.02	0.05				
7. Technical capability	-0.09	1.06	1.22	0.04	-0.03	0.22	0.05	0.01	0.00			
8. Entrepreneurial capability	0.07	1.03	1.14	-0.02	-0.03	-0.05	-0.15	0.07	-0.03	-0.07		
9. Parent business owners	0.42	0.49	1.15	-0.03	0.11	-0.03	0.06	-0.14	0.00	-0.03	-0.02	
10. Development	-0.01	0.97	1.30	-0.12	-0.03	-0.01	-0.08	0.00	0.27	0.23	0.09	0.00
11. Approval	-0.06	1.00	1.09	-0.05	0.04	-0.09	-0.15	-0.04	0.07	-0.08	0.04	0.02
12. Welfare	-0.10	1.00	1.21	0.11	0.07	0.02	0.02	-0.10	0.06	0.02	0.09	0.26
13. Personal development	0.10	1.00	1.33	-0.10	0.08	0.08	0.08	0.11	0.32	0.23	0.12	0.08
14. Independence	-0.05	1.01	1.14	-0.07	-0.10	0.00	0.00	0.03	0.04	0.05	0.15	-0.10
15. Financial	-0.01	1.03	1.09	-0.06	-0.08	-0.08	-0.08	0.04	0.12	0.02	0.07	-0.06
16. Reactive	-0.05	1.04	1.04	-0.05	0.00	0.01	0.03	-0.13	0.04	-0.01	0.08	0.01
17. Business similarity	0.10	0.97	1.13	0.07	-0.08	-0.14	0.08	0.07	0.04	-0.04	-0.10	0.04
18. Task similarity	0.01	0.97	1.07	-0.02	0.01	-0.08	-0.12	-0.09	0.00	-0.01	-0.04	-0.06

Variable	10	11	12	13	14	15	16	17
11. Approval	0.03							
12. Welfare	0.10	-0.09						
13. Personal development	0.23	0.02	-0.03					
14. Independence	0.20	-0.02	0.11	-0.05				
15. Financial	0.09	-0.09	0.00	-0.04	0.03			
16. Reactive	0.01	-0.07	0.00	0.01	0.00	-0.01		
17. Business similarity	0.10	-0.07	-0.11	0.04	-0.12	-0.02	-0.06	
18. Task similarity	0.11	-0.06	0.07	-0.02	0.06	-0.06	0.02	-0.06

Notes. *r* has to be 0.12 or higher to be significant at *p* < 0.05 and *r* has to be 0.15 or higher to be significant at *p* < 0.01 (two-tailed)

## **Appendix III**

TABLE 2. Descriptive statistics, correlations, and regression results for the study variables (N = 277)

Variable	Mean	S.D.	VIF	1	2	3	4	5	6	7	8	9
1. Age <sup>a</sup>	-1.12	9.71	1.16	1.00								
2. Age <sup>2a</sup>	95.32	126.56	1.19	-0.15	1.00							
3. Gender	0.88	0.32	1.13	0.11	0.02	1.00						
4. Education	0.52	0.81	1.11	-0.08	-0.07	0.00	1.00					
5. Managerial human capital	9.96	5.52	1.14	0.17	-0.21	0.06	0.08	1.00				
6. Managerial capability	0.04	0.97	1.23	0.00	0.01	-0.09	-0.10	0.13	1.00			
7. Technical capability	0.06	1.00	1.22	-0.02	0.05	0.12	0.08	-0.01	0.02	1.00		
8. Entrepreneurial capability	-0.02	1.03	1.31	-0.06	0.13	-0.01	-0.04	0.04	-0.04	-0.03	1.00	
9. Development	-0.01	0.96	1.36	-0.17	-0.03	-0.05	0.03	0.04	0.21	0.28	0.26	1.00
10. Parent business owners	0.34	0.47	1.09	-0.03	0.05	0.01	0.00	-0.07	0.01	-0.06	0.13	0.04
11. Business similarity	0.01	1.00	1.13	0.06	-0.12	-0.14	0.11	0.03	-0.01	-0.13	0.00	0.08
12. Task similarity	-0.01	1.00	1.04	-0.04	-0.03	0.01	-0.07	-0.06	-0.08	-0.02	0.02	0.04
13. Approval	-0.03	1.00	1.10	-0.16	0.16	-0.13	-0.13	-0.08	0.02	-0.02	0.10	0.07
14. Welfare	-0.05	0.97	1.10	0.04	0.14	-0.04	-0.07	-0.09	0.05	-0.11	0.02	-0.01
15. Personal development	0.00	0.98	1.26	-0.02	0.02	-0.01	0.10	0.09	0.21	0.19	0.28	0.28
16. Independence	-0.03	1.03	1.12	-0.14	-0.08	-0.19	0.09	0.03	0.11	0.03	0.08	0.17
17. Financial	0.02	1.00	1.08	-0.04	-0.09	0.08	0.03	0.07	0.06	0.02	0.15	0.10
18. Reactive	0.06	0.98	1.09	-0.06	-0.05	0.02	-0.04	-0.05	0.16	0.00	0.10	0.05

Variable	10	11	12	13	14	15	16	17
10. Parent business owners	1.00							
11. Business similarity	0.06	1.00						
12. Task similarity	-0.09	-0.01	1.00					
13. Approval	0.01	-0.04	0.00	1.00				
14. Welfare	0.18	-0.08	0.00	0.02	1.00			
15. Personal development	0.06	0.04	0.06	-0.05	-0.05	1.00		
16. Independence	-0.08	-0.04	0.02	0.04	-0.02	0.05	1.00	
17. Financial	-0.04	0.01	-0.01	0.04	0.01	0.01	0.05	1.00
18. Reactive	0.04	-0.13	-0.02	-0.03	0.01	0.03	0.04	-0.06

Notes. <sup>a</sup>  $r$  has to be 0.11 or higher to be significant at  $p < 0.05$  (two-tailed) and  $r$  has to be 0.13 or higher to be significant at  $p < 0.01$  (two-tailed)

<sup>a</sup> The reader is reminded that 'Age' was measured in terms of deviation from the mean age of the sample.



Variable	Mean	S.D.	VIF	1	2	3	4	5	6	7	8	9
1. Age <sup>a</sup>	-1.09	9.72	1.23	1.00								
2. Age <sup>2</sup>	95.42	127.59	1.12	-0.13	1.00							
3. Gender	0.84	0.37	1.23	0.20	0.00	1.00						
4. Education	0.49	0.79	1.07	0.00	-0.11	-0.08	1.00					
5. Managerial human capital	9.83	5.73	1.24	0.21	-0.18	0.07	0.02	1.00				
6. Managerial capability	-0.06	1.02	1.24	-0.06	-0.03	-0.12	-0.04	0.21	1.00			
7. Technical capability	0.02	1.00	1.23	0.05	0.00	0.21	-0.01	-0.06	-0.03	1.00		
8. Entrepreneurial capability	-0.08	0.98	1.22	-0.01	0.01	0.06	-0.07	0.11	-0.02	0.03	1.00	
9. Development	0.00	0.98	1.37	-0.17	0.01	-0.06	-0.04	0.07	0.23	0.25	0.27	1.00
10. Parent business owners	0.34	0.47	1.09	-0.04	0.09	0.02	0.09	-0.11	0.04	-0.07	0.06	0.04
11. Business similarity	-0.06	0.99	1.16	0.02	-0.06	-0.20	0.06	0.01	-0.04	-0.14	-0.03	0.10
12. Task similarity	-0.01	1.00	1.07	-0.08	-0.06	0.00	-0.04	-0.12	-0.10	-0.08	0.00	0.02
13. Approval	0.06	1.02	1.12	-0.23	0.17	-0.09	-0.09	-0.05	0.09	0.00	0.11	0.09
14. Welfare	-0.02	0.96	1.09	0.10	0.03	-0.03	0.02	-0.07	0.10	-0.06	0.04	0.04
15. Personal development	-0.06	0.99	1.22	-0.04	0.01	-0.03	0.06	0.14	0.17	0.11	0.25	0.22
16. Independence	0.06	0.93	1.12	-0.08	-0.11	-0.17	0.12	0.03	0.04	0.03	0.01	0.15
17. Financial	-0.02	0.96	1.09	0.02	-0.10	0.14	-0.04	0.10	0.11	0.04	0.14	0.10
18. Reactive	0.01	0.99	1.08	-0.11	0.04	-0.02	-0.01	-0.08	0.09	0.02	0.02	0.04

Variable	10	11	12	13	14	15	16	17
10. Parent business owners	1.00							
11. Business similarity	-0.01	1.00						
12. Task similarity	-0.04	0.03	1.00					
13. Approval	0.01	-0.03	0.02	1.00				
14. Welfare	0.18	0.00	0.02	0.00	1.00			
15. Personal development	0.08	0.12	0.02	0.03	-0.05	1.00		
16. Independence	-0.03	0.05	0.05	0.02	-0.01	-0.07	1.00	
17. Financial	-0.05	-0.04	-0.07	0.03	-0.04	0.02	0.05	1.00
18. Reactive	0.07	-0.19	0.02	0.00	0.03	-0.02	-0.06	-0.06

Notes. <sup>a</sup> *r* has to be 0.11 or higher to be significant at  $p < 0.05$  (two-tailed) and *r* has to be 0.13 or higher to be significant at  $p < 0.01$  (two-tailed)  
<sup>a</sup> The reader is reminded that 'Age' was measured in terms of deviation from the mean age of the sample.

**Table III    Logistic Regression of Human Capital Variables Associated with the Likelihood of being a Portfolio (Model 1) and Serial (Model 2) Entrepreneur**

Independent Variables	Model 1 <sup>a, b</sup> : Portfolio		Model 2 <sup>a, c</sup> : Serial	
	$\beta$	Significance	$\beta$	Significance
<b><i>GHK</i></b>				
Age	0.00		0.01	
Age <sup>2</sup>	0.00		0.00	
Gender	1.39	***	0.27	
Education	0.16		-0.04	
Managerial Human Capital	0.01		0.02	
Managerial capability	0.37	**	-0.09	
Technical capability	-0.22	†	-0.37	**
<b><i>SHK<sub>E</sub></i></b>				
Entrepreneurial capability	0.04		-0.25	†
Parent business owners	0.59	*	0.79	**
Development	-0.08		0.17	
<b><i>SHK<sub>V</sub></i></b>				
Task environment similarity	0.09		0.01	
Skills / abilities similarity	0.24	*	-0.03	
Approval	-0.18		0.08	
Welfare	-0.19		-0.15	
Independence	-0.16		0.07	
Personal development	0.23	†	0.19	
Financial	-0.01		-0.11	
Reactive	-0.12		-0.23	†
Model $\chi^2$	52.81	****	31.64	*
-2 log likelihood	477.03		432.84	
Overall predictive accuracy	67.0		69.0	
Cox & Snell R square	0.125		0.084	
Nagelkerke R square	0.170		0.116	
Number of entrepreneurs	394		361	

Notes. †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ; \*\*\*\*  $p < 0.0001$   
<sup>a</sup> Reference category is novice entrepreneurs.  
<sup>b</sup> Variance Inflation Factor (VIF) scores were well below the maximum appropriate level of 10 (maximum score of 1.36).  
<sup>c</sup> Variance Inflation Factor (VIF) scores were well below the maximum appropriate level of 10 (maximum score of 1.37).

## **APPENDIX IV**

Table I Correlation Matrix Relating to Number of Information Sources Used & Search Intensity (Models 1a, 2a, 3a, 4a, 5a & 6a) (n= 612)

Variables	Mean	S.D.	VIF	1	2	3	4	5	6	7	8	9	10	11
1. Age <sup>a</sup>	-0.23	10.00	1.10	1.00										
2. Age <sup>2</sup>	99.84	136.03	1.04	0.00	1.00									
3. Gender	0.87	0.34	1.10	0.18	-0.01	1.00								
4. Education	0.49	0.79	1.04	-0.03	-0.06	-0.02	1.00							
5. Managerial human capital	9.75	5.76	1.11	0.18	-0.15	0.07	0.08	1.00						
6. Managerial capability	-0.01	1.00	1.09	-0.03	-0.02	-0.09	-0.10	0.10	1.00					
7. Technical capability	0.00	1.01	1.14	0.02	0.01	0.15	0.03	-0.01	-0.02	1.00				
8. Entrepreneurial capability	-0.01	1.00	1.12	0.01	0.05	0.03	-0.07	0.05	-0.01	0.00	1.00			
9. Development	-0.02	0.99	1.27	-0.12	-0.03	-0.03	-0.04	0.07	0.19	0.26	0.28	1.00		
10. Parent business owners	0.36	0.48	1.05	-0.02	0.09	-0.02	0.02	-0.11	0.01	-0.06	0.07	0.04	1.00	
11. Habitual <sup>b</sup>	0.53	0.50	1.07	0.08	-0.02	0.10	0.05	0.07	0.08	-0.09	0.00	0.03	0.14	1.00
12. Total <sup>b</sup>	2.18	2.05	1.07	0.10	-0.01	0.11	0.03	0.03	0.09	-0.06	0.07	-0.01	0.17	0.54
13. Serial <sup>b</sup>	0.24	0.42	1.19	0.05	0.00	-0.03	0.00	0.02	-0.03	-0.06	-0.05	0.01	0.09	1.00
14. Portfolio <sup>b</sup>	0.29	0.46	1.23	0.04	-0.02	0.15	0.05	0.06	0.11	-0.04	0.05	0.02	0.07	-0.36

Notes. *r* has to be 0.08 or higher to be significant at *p* < 0.05 (two-tailed) and *r* has to be 0.11 or higher to be significant at *p* < 0.01 (two-tailed)

<sup>a</sup> The reader is reminded that age was measured in terms of deviation from the mean age of the group of respondents.

<sup>b</sup> As these variables are introduced separately into the regression models, the correlations between them is not required.

Table II Correlation Matrix Relating to Number of Opportunities Identified (Models 7a, 8a and 9a) (n= 599)

Variables	Mean	S.D.	VIF	1	2	3	4	5	6	7	8	9	10	11	12
1. Age <sup>a</sup>	-0.18	10.00	1.09	1.00											
2. Age <sup>2</sup>	99.80	136.65	1.04	0.01	1.00										
3. Gender	0.87	0.34	1.10	0.17	0.00	1.00									
4. Education	0.50	0.79	1.04	-0.03	-0.05	-0.02	1.00								
5. Managerial human capital	9.81	5.76	1.10	0.18	-0.15	0.06	0.08	1.00							
6. Managerial capability	0.01	1.00	1.09	-0.03	-0.02	-0.09	-0.11	0.10	1.00						
7. Technical capability	-0.01	1.01	1.14	0.03	0.01	0.15	0.04	-0.01	-0.02	1.00					
8. Entrepreneurial capability	-0.01	1.00	1.12	0.00	0.05	0.02	-0.07	0.04	-0.01	-0.01	1.00				
9. Development	-0.01	0.99	1.26	-0.12	-0.03	-0.03	-0.05	0.07	0.19	0.25	0.28	1.00			
10. Parent business owners	0.36	0.48	1.05	-0.02	0.09	-0.01	0.02	-0.10	0.01	-0.06	0.07	0.04	1.00		
11. Search intensity	21.52	8.89	1.12	-0.10	0.05	-0.05	0.00	0.03	0.15	-0.03	0.16	0.25	0.10	1.00	
12. Habitual <sup>b</sup>	0.53	0.50	1.06	0.09	-0.03	0.11	0.05	0.07	0.07	-0.08	0.00	0.02	0.14	0.00	1.00
13. Total <sup>b</sup>	2.20	2.07	1.07	0.10	-0.01	0.11	0.02	0.03	0.08	-0.05	0.07	-0.02	0.18	0.00	0.54
14. Serial <sup>b</sup>	0.23	0.42	1.19	0.06	-0.01	-0.02	0.00	0.02	-0.03	-0.06	-0.05	0.01	0.08	-0.01	1.00
15. Portfolio <sup>b</sup>	0.30	0.46	1.23	0.04	-0.02	0.14	0.05	0.06	0.10	-0.03	0.05	0.02	0.08	0.01	-0.36

Notes. <sup>a</sup> *r* has to be 0.08 or higher to be significant at *p* < 0.05 (two-tailed) and *r* has to be 0.11 or higher to be significant at *p* < 0.01 (two-tailed)  
<sup>a</sup> The reader is reminded that age was measured in terms of deviation from the mean age of the group of respondents.  
<sup>b</sup> As these variables are introduced separately into the regression models, the correlations between them is not required.

Table III Correlation Matrix relating to the Proportion of Identified Opportunities Pursued (Models 10a, 11a and 12a) (n= 299)

Variables	Mean	S.D.	VIF	1	2	3	4	5	6	7	8	9	10	11	12
1. Age <sup>a</sup>	-2.18	9.50	1.30	1.00											
2. Age <sup>2</sup>	94.61	126.27	1.23	-0.40	1.00										
3. Gender	0.91	0.29	1.10	0.11	-0.07	1.00									
4. Education	0.55	0.82	1.06	-0.01	-0.03	-0.02	1.00								
5. Managerial human capital	1.046	5.85	1.15	0.23	-0.19	0.02	0.16	1.00							
6. Managerial capability	0.12	0.93	1.09	0.04	-0.02	-0.12	-0.08	0.06	1.00						
7. Technical capability	-0.01	1.01	1.12	0.02	-0.07	0.20	0.08	-0.02	-0.12	1.00					
8. Entrepreneurial capability	0.09	0.93	1.08	-0.04	0.05	0.04	0.02	0.05	-0.03	-0.02	1.00				
9. Development	0.12	0.91	1.15	-0.05	-0.06	0.06	0.08	0.00	0.14	0.19	0.19	1.00			
10. Parent business owners	0.37	0.48	1.07	-0.01	0.08	-0.05	-0.02	-0.18	0.07	-0.05	0.07	0.05	1.00		
11. Search intensity	22.16	8.56	1.15	-0.13	0.09	0.00	0.03	0.00	0.13	-0.03	0.20	0.23	0.02	1.00	
12. Habitual <sup>b</sup>	0.68	0.47	1.07	0.18	-0.04	0.08	-0.04	0.02	0.06	-0.06	0.04	-0.01	0.09	-0.11	1.00
13. Total <sup>b</sup>	2.75	2.59	1.13	0.20	-0.01	0.09	-0.01	0.00	0.05	-0.07	0.08	-0.10	0.21	-0.07	0.47
14. Serial <sup>b</sup>	0.26	0.44	1.40	0.08	-0.01	-0.08	-0.07	0.00	0.00	0.00	-0.08	0.05	0.10	-0.06	1.00
15. Portfolio <sup>b</sup>	0.42	0.49	1.42	0.10	-0.03	0.15	0.02	0.02	0.06	-0.05	0.11	-0.06	0.00	-0.05	-0.50

Notes. *r* has to be 0.12 or higher to be significant at  $p < 0.05$  (two-tailed) and *r* has to be 0.16 or higher to be significant at  $p < 0.01$  (two-tailed)

<sup>a</sup>The reader is reminded that age was measured in terms of deviation from the mean age of the group of respondents.

<sup>b</sup> As these variables are introduced separately into the regression models, the correlations between them is not required.

Table IV Correlation Matrix Relating to the Mode of Exploitation (Models 13a, 14a and 15a) (n= 592)

Variables	Mean	S.D.	VIF	1	2	3	4	5	6	7	8	9	10	11	12
1. Age <sup>a</sup>	-0.23	10.00	1.10	1.00											
2. Age <sup>2</sup>	99.84	136.03	1.04	0.00	1.00										
3. Gender	0.87	0.34	1.10	0.17	-0.01	1.00									
4. Education	0.49	0.79	1.04	-0.04	-0.06	-0.02	1.00								
5. Managerial human capital	9.75	5.76	1.11	0.18	-0.16	0.08	0.08	1.00							
6. Managerial capability	-0.01	1.00	1.09	-0.04	-0.02	-0.10	-0.09	0.10	1.00						
7. Technical capability	0.00	1.01	1.14	0.03	0.01	0.16	0.04	-0.02	-0.03	1.00					
8. Entrepreneurial capability	-0.01	1.00	1.12	-0.01	0.05	0.03	-0.07	0.05	-0.02	0.00	1.00				
9. Development	-0.02	0.99	1.27	-0.12	-0.04	-0.03	-0.04	0.07	0.20	0.25	0.29	1.00			
10. Parent business owners	0.36	0.48	1.05	-0.03	0.09	-0.03	0.01	-0.09	0.02	-0.05	0.08	0.04	1.00		
11. Search intensity	21.50	8.98	1.11	-0.09	0.03	-0.04	-0.01	0.03	0.13	-0.04	0.16	0.25	0.09	1.00	
12. Habitual <sup>b</sup>	0.51	0.50	1.06	0.08	-0.03	0.10	0.05	0.09	0.08	-0.08	0.01	0.03	0.11	0.00	1.00
13. Total <sup>b</sup>	2.12	1.90	1.07	0.10	-0.01	0.11	0.04	0.06	0.10	-0.02	0.06	0.00	0.15	0.01	0.58
14. Serial <sup>b</sup>	0.24	0.42	1.19	0.05	-0.03	-0.03	0.00	0.02	-0.02	-0.07	-0.04	0.01	0.08	-0.01	1.00
15. Portfolio <sup>b</sup>	0.29	0.46	1.23	0.04	-0.01	0.14	0.06	0.09	0.11	-0.02	0.05	0.03	0.05	0.01	-0.34

Notes. *r* has to be 0.08 or higher to be significant at  $p < 0.05$  (two-tailed) and *r* has to be 0.11 or higher to be significant at  $p < 0.01$  (two-tailed)

<sup>a</sup> The reader is reminded that age was measured in terms of deviation from the mean age of the group of respondents.

<sup>b</sup> As these variables are introduced separately into the regression models, the correlations between them is not required.

**Table V** Correlation Matrix Relation to the Number of Information Sources Used, Search Intensity and the Mode of Exploitation by Habitual Entrepreneurs (Models 1b, 2b, 3b, 4b, 9b and 10b) (n= 323)

Variables	Mean	S.D.	VIF	1	2	3	4	5	6	7	8	9	10
1. Age <sup>a</sup>	0.52	9.84	1.06	1.00									
2. Age <sup>2</sup>	96.78	137.85	1.04	-0.27	1.00								
3. Gender	0.90	0.30	1.10	0.09	-0.11	1.00							
4. Education	0.53	0.81	1.06	-0.06	0.01	0.02	1.00						
5. Managerial human capital	1.012	5.93	1.09	0.18	-0.17	0.03	0.17	1.00					
6. Managerial capability	0.01	1.01	1.08	-0.04	0.02	-0.14	-0.14	0.00	1.00				
7. Technical capability	-0.01	1.04	1.12	0.02	-0.09	0.21	0.09	0.00	-0.14	1.00			
8. Entrepreneurial capability	-0.01	1.02	1.10	-0.06	0.07	0.06	0.04	0.04	0.00	-0.03	1.00		
9. Parent business owners	0.42	0.49	1.03	0.00	0.06	-0.07	-0.03	-0.22	0.08	-0.04	0.02	1.00	
10. Development	0.01	0.99	1.19	-0.02	-0.13	0.04	0.02	-0.01	0.13	0.18	0.20	0.04	1.00
11. Portfolio	0.55	0.50	1.05	-0.01	-0.01	0.17	0.07	0.01	0.04	-0.03	0.13	-0.08	-0.08

Notes. <sup>a</sup>  $r$  has to be 0.12 or higher to be significant at  $p < 0.05$  (two-tailed) and  $r$  has to be 0.15 or higher to be significant at  $p < 0.01$  (two-tailed)

<sup>a</sup> The reader is reminded that age was measured in terms of deviation from the mean age of the group of respondents.



**Table VI**      **Correlation Matrix relating the Number of Opportunities Identified by Habitual Entrepreneurs (Models 5b and 6b) (n= 319)**

Variables	Mean	S.D.	VIF	1	2	3	4	5	6	7	8	9	10
1. Age <sup>a</sup>	0.63	9.82	1.06	1.00									
2. Age <sup>2</sup>	96.53	138.80	1.04	0.04	1.00								
3. Gender	0.91	0.29	1.10	0.13	-0.03	1.00							
4. Education	0.53	0.82	1.06	-0.05	0.01	-0.04	1.00						
5. Managerial human capital	10.19	5.92	1.08	0.14	-0.13	0.06	0.10	1.00					
6. Managerial capability	0.07	1.01	1.07	-0.04	-0.04	-0.05	-0.15	0.04	1.00				
7. Technical capability	-0.07	1.04	1.12	0.03	-0.02	0.20	0.06	0.00	-0.07	1.00			
8. Entrepreneurial capability	-0.01	1.03	1.10	-0.02	0.06	0.05	-0.04	0.03	-0.01	-0.01	1.00		
9. Parent business owners	0.42	0.49	1.03	-0.01	0.10	-0.01	0.02	-0.14	-0.01	-0.04	0.02	1.00	
10. Development	0.01	0.99	1.19	-0.10	-0.05	0.01	-0.08	0.04	0.13	0.21	0.26	0.01	1.00
11. Portfolio	0.56	0.50	1.05	-0.03	-0.01	0.15	0.03	0.02	0.10	0.02	0.08	0.02	0.00

Notes.    *r* has to be 0.13 or higher to be significant at  $p < 0.05$  (two-tailed) and *r* has to be 0.15 or higher to be significant at  $p < 0.01$  (two-tailed)

<sup>a</sup> The reader is reminded that age was measured in terms of deviation from the mean age of the group of respondents.

Table VII Correlation Matrix relating to the Proportion of Identified Opportunities Pursued by Habitual Entrepreneurs (Models 7b and 8b) (n= 202)

Variables	Mean	S.D.	VIF	1	2	3	4	5	6	7	8	9	10
1. Age <sup>a</sup>	-0.98	9.52	1.12	1.00									
2. Age <sup>2</sup>	91.20	124.47	1.14	-0.27	1.00								
3. Gender	0.93	0.26	1.12	0.09	-0.11	1.00							
4. Education	0.53	0.81	1.08	-0.06	0.01	0.02	1.00						
5. Managerial human capital	10.55	5.83	1.15	0.18	-0.17	0.03	0.17	1.00					
6. Managerial capability	0.16	0.95	1.10	-0.04	0.02	-0.14	-0.14	0.00	1.00				
7. Technical capability	-0.06	1.01	1.12	0.02	-0.09	0.21	0.09	0.00	-0.14	1.00			
8. Entrepreneurial capability	0.11	0.96	1.09	-0.06	0.07	0.06	0.04	0.04	0.00	-0.03	1.00		
9. Parent business owners	0.41	0.49	1.08	0.00	0.06	-0.07	-0.03	-0.22	0.08	-0.04	0.02	1.00	
10. Development	0.12	0.92	1.15	-0.02	-0.13	0.04	0.02	-0.01	0.13	0.18	0.20	0.04	1.00
11. Portfolio	0.62	0.49	1.08	-0.01	-0.01	0.17	0.07	0.01	0.04	-0.03	0.13	-0.08	-0.08

Notes. *r* has to be 0.14 or higher to be significant at *p* < 0.05 (two-tailed) and *r* has to be 0.20 or higher to be significant at *p* < 0.01 (two-tailed)

<sup>a</sup> The reader is reminded that age was measured in terms of deviation from the mean age of the group of respondents.

## **APPENDIX V**

**Table I OLS Regression Models Relating to the Number of Information Sources Used by Serial and Portfolio Entrepreneurs Relative to Novice Entrepreneurs**

Independent Variables	Model 1 <sup>a, b</sup>		Model 2a <sup>a, b</sup>	
	$\beta$		$\beta$	
<b><i>GHK</i></b>				
Age	-0.03		-0.03	
Age <sup>2</sup>	-0.02		-0.02	
Gender	0.06		0.06	
Education	0.04		0.04	
Managerial human capital	0.03		0.03	
Managerial capability	0.11	**	0.10	*
Technical capability	-0.01		-0.01	
<b><i>SHK<sub>E</sub></i></b>				
Entrepreneurial capability	0.07	†	0.07	†
Parent business owners	0.05		0.05	
Development	0.14	**	0.14	**
PORTFOLIO	-		0.02	
SERIAL	-		-0.02	
F-value	3.50	****	2.95	***
R <sup>2</sup>	0.06		0.06	
Adjusted R <sup>2</sup>	0.04		0.04	
Change in R <sup>2</sup>	-		0.00	
N	612		612	

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001.

<sup>a</sup> Variance Inflation Factor (VIF) scores for all models were well below the maximum level of 10 (maximum score of 1.27).

<sup>b</sup> See Table I in Appendix IV for relevant correlation matrix.

**Table II OLS Regression Models Relating to the Information Search Intensity of Serial and Portfolio Entrepreneurs Relative to Novice Entrepreneurs**

Independent Variables	Model 3 <sup>a, b</sup>		Model 4 <sup>a, b</sup>	
	$\beta$		$\beta$	
<i>GHK</i>				
Age	-0.06		-0.06	
Age <sup>2</sup>	0.04		0.04	
Gender	-0.01		-0.01	
Education	0.02		0.02	
Managerial human capital	0.03		0.03	
Managerial capability	0.09	*	0.09	*
Technical capability	-0.09	*	-0.09	*
<i>SHK<sub>E</sub></i>				
Entrepreneurial capability	0.10	*	0.10	*
Parent business owners	0.07	†	0.07	†
Development	0.22	****	0.22	****
PORTFOLIO	-		-0.02	
SERIAL	-		-0.02	
F-value	6.62	****	5.53	****
R <sup>2</sup>	0.10		0.10	
Adjusted R <sup>2</sup>	0.08		0.08	
Change in R <sup>2</sup>	-		0.00	
N	612		612	

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001.  
<sup>a</sup> Variance Inflation Factor (VIF) scores for all models were well below the maximum level of 10 (maximum score of 1.27).  
<sup>b</sup> See Table I in Appendix IV for relevant correlation matrix.

**Table III OLS Regression Models Relating to the Number of Opportunities Identified by Serial and Portfolio Entrepreneurs Relative to Novice Entrepreneurs**

Independent Variables	Model 5 <sup>a, b</sup>		Model 6 <sup>a, b</sup>	
	$\beta$		$\beta$	
<i><b>GHK</b></i>				
Age	-0.20	****	-0.21	****
Age <sup>2</sup>	0.00		0.01	
Gender	0.18	****	0.14	****
Education	0.10	**	0.09	*
Managerial human capital	0.07	†	0.06	
Managerial capability	0.09	*	0.06	†
Technical capability	-0.03		-0.01	
<i><b>SHK<sub>E</sub></b></i>				
Entrepreneurial capability	0.12	**	0.12	**
Parent business owners	0.02		-0.01	
Development	0.07		0.06	
Search intensity	0.09	*	0.10	*
PORTFOLIO	-		0.28	**
SERIAL	-		0.12	****
F-value	7.83	****	10.62	****
R <sup>2</sup>	0.13		0.19	
Adjusted R <sup>2</sup>	0.11		0.17	
Change in R <sup>2</sup>	-		0.06	****
N	599		599	

Notes. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001.  
<sup>a</sup> Variance Inflation Factor (VIF) scores for all models were well below the maximum level of 10 (maximum score of 1.26).  
<sup>b</sup> See Table II in Appendix IV for relevant correlation matrix.

**Table IV OLS Regression Models Relating to the Proportion of Identified Opportunities that were Pursued by Serial and Portfolio Entrepreneurs Relative to Novice Entrepreneurs**

Independent Variables	Model 7 <sup>a, b</sup>	Model 8 <sup>a, b</sup>
	$\beta$	$\beta$
<b><i>GHK</i></b>		
Age	0.12 †	0.10
Age <sup>2</sup>	0.09	0.09
Gender	-0.02	-0.05
Education	-0.03	-0.03
Managerial human capital	-0.02	-0.02
Managerial capability	0.08	0.06
Technical capability	0.08	0.10
<b><i>SHK<sub>E</sub></i></b>		
Entrepreneurial capability	0.07	0.05
Parent business owners	-0.01	-0.01
Development	0.06	0.07
Search intensity	-0.14 *	-0.12 *
PORTFOLIO	-	0.23 ***
SERIAL	-	0.10
F-value	1.37 <sup>b</sup>	2.04 *
R <sup>2</sup>	0.05	0.09
Adjusted R <sup>2</sup>	0.01	0.04
Change in R <sup>2</sup>	-	0.04 **
N	299	299

Notes. †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ; \*\*\*\*  $p < 0.0001$

<sup>a</sup> Variance Inflation Factor (VIF) scores for all models were well below the maximum level of 10 (maximum score of 1.42)

<sup>b</sup> Not significant

<sup>c</sup> See Table III in Appendix IV for relevant correlation matrix.

**Table V Logistic Regression Models Relating to the Mode of Exploitation for the Surveyed Business by Serial and Portfolio Entrepreneurs Relative to Novice Entrepreneurs**

Independent Variables	Model 9 <sup>a, b</sup>		Model 10 <sup>a, b</sup>	
	$\beta$		$\beta$	
<i><b>GHK</b></i>				
Age	0.01		0.01	
Age <sup>2</sup>	0.00	*	0.00	*
Gender	-0.29		-0.26	
Education	0.16		0.16	
Managerial human capital	-0.06	**	-0.06	*
Managerial capability	0.05		0.06	
Technical capability	-0.36	**	-0.36	**
<i><b>SHK<sub>E</sub></b></i>				
Entrepreneurial capability	-0.29	*	-0.29	*
Parent business owners	0.41	†	0.41	
Development	-0.05		-0.04	
Search intensity	0.01		0.01	
PORTFOLIO	-		-0.18	
SERIAL	-		0.06	
Model $\chi^2$	35.97	****	36.56	**
-2 log likelihood	485.53		484.94	
Overall predictive accuracy	84.1		84.1	
Cox & Snell R square	0.059		0.060	
Nagelkerke R square	0.101		0.102	
Number of entrepreneurs	592		592	

Notes. †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ; \*\*\*\*  $p < 0.0001$ .

<sup>a</sup> Variance Inflation Factor (VIF) scores for all models well below the maximum level of 10 (maximum score of 1.27).

<sup>b</sup> See Table II in Appendix IV for relevant correlation matrix.



## **APPENDIX VI**

**Table I**      **Correlation Matrix Relating to Performance based Differences among Different Types of Entrepreneurs (n = 378)**

Pearson Correlation	Mean	S. Dev.	VIF	1.	2.	3.	4.
1. Age	-0.49	9.2	1.33	1.00			
2. Age <sup>2</sup>	85.44	118.85	1.19	-0.11	1.00		
3. Gender	0.89	0.31	1.30	0.12	-0.02	1.00	
4. Education	0.55	0.93	1.23	-0.08	-0.04	-0.10	1.00
5. Managerial HK	10.46	5.74	1.26	0.20	-0.22	0.08	0.03
6. Managerial Capability	0.01	1.00	1.33	-0.01	-0.04	-0.05	-0.13
7. Technical Capability	0.02	1.02	1.46	0.03	0.00	0.22	0.06
8. Entrepreneurial Capability	-0.08	1.02	1.52	-0.05	0.09	0.10	-0.01
9. Developmental approach	-0.01	0.93	1.43	-0.13	0.01	0.03	-0.01
10. Parent(s) owned business	0.38	0.49	1.19	-0.04	0.09	0.07	0.03
11. Business similarity	0.02	0.98	1.20	0.09	-0.08	-0.15	0.12
12. Task similarity	0.02	0.97	1.10	-0.01	-0.04	-0.03	-0.04
13. Approval	-0.03	0.99	1.15	-0.10	0.10	-0.04	-0.13
14. Welfare	-0.10	0.94	1.31	0.06	0.12	0.06	-0.03
15. Personal development	0.01	1.00	1.48	-0.06	0.03	0.00	0.07
16. Independence	0.05	0.97	1.23	-0.10	-0.04	-0.11	0.09
17. Financial motives	-0.06	0.99	1.13	0.01	-0.09	0.19	-0.06
18. Reactive	-0.04	1.04	1.13	-0.04	-0.01	0.01	0.04
19. Expectation of competition	3.54	1.20	1.12	0.03	-0.13	0.06	-0.08
20. Business change	3.47	0.98	1.21	0.01	0.08	0.16	0.02
21. Agriculture	0.05	0.22	1.20	0.09	0.10	0.05	-0.04
22. Manufacturing	0.12	0.32	1.24	0.08	-0.07	0.10	-0.06
23. Construction	0.09	0.28	1.16	-0.08	0.01	0.11	-0.10
24. Differentiation strategy	0.02	1.01	1.37	-0.11	0.04	0.14	0.11
25. Innovation strategy	-0.02	1.03	1.58	0.03	-0.02	-0.13	0.00
26. Cost-based strategy	-0.09	0.99	1.34	-0.02	-0.02	-0.04	0.14
27. 10-49 Employees	0.18	0.39	1.35	0.07	-0.09	0.06	-0.07
28. 50 or more Employees	0.03	0.17	1.16	0.01	-0.08	0.06	-0.04
29. Business 1-5yrs old	0.03	0.18	1.24	-0.17	0.09	-0.12	0.17
30. Business 6-10 yrs old	0.22	0.41	1.28	-0.22	0.06	-0.04	0.05
31. Purchased business	0.14	0.35	1.17	-0.02	-0.03	-0.10	0.01
32. No. of equity partners	1.57	1.06	1.30	0.14	-0.07	-0.02	0.12
33. Habitual	0.58	0.49	1.15	0.03	-0.03	0.06	0.03
34. Total	2.24	1.76	1.16	0.11	0.03	0.08	0.05
35. Habitual failed	0.15	0.36	1.32	0.01	0.00	-0.04	0.00
36. Habitual successful	0.19	0.31	1.19	0.06	-0.03	0.02	-0.06
37. Mixed 1	0.30	0.46	1.43	0.00	0.01	0.06	0.06
38. Mixed 2	0.03	0.17	1.12	-0.05	-0.03	0.06	0.02
39. Serial	0.25	0.43	1.33	0.02	-0.03	-0.09	-0.01
40. Portfolio	0.34	0.47	1.41	0.01	0.00	0.15	0.04

Pearson Correlation	5.	6.	7.	8.	9.	10.	11.
6. Managerial Capability	0.15	1.00					
7. Technical Capability	0.01	0.01	1.00				
8. Entrepreneurial Capability	0.06	-0.06	-0.01	1.00			
9. Developmental approach	0.06	0.21	0.27	0.23	1.00		
10. Parent(s) owned business	-0.13	-0.01	-0.04	0.05	0.02	1.00	
11. Business similarity	0.11	-0.03	-0.13	-0.06	0.02	0.00	1.00
12. Task similarity	-0.07	-0.06	-0.04	-0.01	0.04	-0.09	-0.03
13. Approval	-0.03	0.04	-0.08	0.09	0.02	0.07	-0.07
14. Welfare	-0.12	0.03	-0.08	0.00	0.01	0.22	-0.08
15. Personal development	0.13	0.18	0.19	0.32	0.25	0.07	0.09
16. Independence	0.00	0.07	0.06	0.01	0.13	-0.10	-0.08
17. Financial motives	0.08	0.07	0.07	0.12	0.11	-0.03	-0.05
18. Reactive	-0.09	0.08	-0.01	0.05	0.02	0.06	-0.12
19. Expectation of competition	-0.03	0.03	0.00	0.02	-0.08	-0.02	-0.09
20. Business change	0.05	0.03	0.08	0.07	0.11	0.08	0.01
21. Agriculture	-0.14	-0.11	-0.03	0.03	-0.13	0.18	0.03
22. Manufacturing	0.05	0.02	0.15	0.01	0.07	-0.10	-0.04
23. Construction	0.01	-0.01	0.13	0.00	-0.02	0.03	-0.07
24. Differentiation strategy	-0.05	-0.16	-0.05	-0.06	-0.18	0.02	-0.03
25. Innovation strategy	-0.04	-0.12	-0.12	-0.37	-0.26	-0.05	-0.05
26. Cost-based strategy	0.01	-0.22	-0.09	-0.20	-0.13	0.01	0.13
27. 10-49 Employees	0.09	0.07	-0.09	0.07	0.02	0.00	-0.05
28. 50 or more Employees	0.01	0.08	0.04	0.04	-0.04	-0.01	0.03
29. Business 1-5yrs old	-0.05	-0.07	-0.07	0.01	0.07	-0.03	0.05
30. Business 6-10 yrs old	0.08	0.06	-0.12	0.04	0.02	0.01	0.09
31. Purchased business	-0.12	0.04	-0.10	-0.15	-0.09	0.01	-0.06
32. No. of equity partners	0.06	0.02	-0.10	-0.02	-0.03	-0.02	0.05
33. Habitual	0.08	0.05	-0.10	0.02	0.03	0.10	0.13
34. Total	0.04	0.10	-0.03	0.05	-0.05	0.16	0.11
35. Habitual failed	0.07	0.04	-0.03	-0.03	0.02	0.07	-0.06
36. Habitual successful	-0.05	0.06	-0.07	-0.01	-0.06	0.01	0.04
37. Mixed 1	0.07	-0.02	-0.03	0.04	0.08	0.02	0.16
38. Mixed 2	-0.03	0.02	-0.01	0.02	-0.06	0.09	0.00
39. Serial	0.05	-0.07	-0.11	-0.05	0.03	0.07	0.02
40. Portfolio	0.04	0.12	-0.01	0.06	0.00	0.04	0.12

Pearson Correlation	12.	13.	14.	15.	16.	17.	18.
13. Approval	-0.02	1.00					
14. Welfare	0.03	-0.09	1.00				
15. Personal development	0.02	0.05	-0.09	1.00			
16. Independence	0.09	-0.06	-0.01	-0.03	1.00		
17. Financial motives	-0.04	-0.05	-0.03	-0.01	0.00	1.00	
18. Reactive	-0.01	-0.02	0.01	0.00	0.00	-0.02	1.00
19. Expectation of competition	-0.05	0.03	-0.06	-0.05	0.04	0.04	0.03
20. Business change	0.01	0.11	0.02	0.18	-0.06	0.00	-0.07
21. Agriculture	0.01	-0.04	0.21	0.00	-0.03	0.06	0.04
22. Manufacturing	-0.02	-0.09	-0.06	0.10	-0.11	-0.01	-0.10
23. Construction	0.06	0.04	0.01	-0.10	0.12	0.07	-0.04
24. Differentiation strategy	-0.02	0.01	0.18	0.03	-0.19	-0.06	-0.08
25. Innovation strategy	0.03	-0.12	0.05	-0.34	0.11	-0.13	0.08
26. Cost-based strategy	0.05	0.01	-0.19	-0.16	0.09	-0.08	-0.04
27. 10-49 Employees	-0.11	-0.01	-0.06	0.08	-0.11	0.02	0.05
28. 50 or more Employees	-0.08	0.02	-0.05	0.10	-0.06	-0.04	0.01
29. Business 1-5yrs old	-0.01	-0.03	-0.03	0.10	0.09	0.00	-0.06
30. Business 6-10 yrs old	0.00	-0.01	0.01	0.05	-0.02	0.03	0.02
31. Purchased business	-0.08	0.01	0.08	-0.13	-0.03	-0.01	0.17
32. No. of equity partners	-0.08	-0.11	0.04	0.00	-0.07	-0.02	0.05
33. Habitual	-0.01	-0.03	-0.07	0.12	-0.07	-0.03	-0.04
34. Total	-0.07	-0.01	0.02	0.10	-0.06	-0.02	-0.04
35. Habitual failed	-0.10	0.05	-0.06	0.02	0.01	0.02	-0.06
36. Habitual successful	0.03	-0.03	0.00	-0.11	-0.04	0.06	-0.05
37. Mixed 1	0.06	-0.08	-0.03	0.17	-0.04	-0.07	0.03
38. Mixed 2	-0.01	0.09	-0.02	0.06	-0.02	-0.03	0.02
39. Serial	-0.01	0.04	-0.05	0.00	0.05	-0.07	-0.11
40. Portfolio	0.00	-0.07	-0.03	0.13	-0.11	0.03	0.06

Pearson Correlation	19.	20.	21.	22.	23.	24.	25.
20. Business change	-0.06	1.00					
21. Agriculture	0.02	0.01	1.00				
22. Manufacturing	0.09	0.14	-0.09	1.00			
23. Construction	0.05	-0.08	-0.07	-0.11	1.00		
24. Differentiation strategy	0.04	0.01	0.10	0.14	-0.02	1.00	
25. Innovation strategy	0.04	-0.28	0.01	-0.10	0.04	-0.01	1.00
26. Cost-based strategy	-0.08	-0.03	-0.06	-0.15	0.02	-0.07	-0.04
27. 10-49 Employees	-0.01	0.08	-0.11	0.15	0.02	0.01	-0.10
28. 50 or more Employees	0.07	0.11	0.10	0.13	-0.05	-0.02	-0.03
29. Business 1-5yrs old	-0.01	0.03	0.02	0.02	-0.01	0.18	-0.08
30. Business 6-10 yrs old	-0.14	0.00	-0.04	-0.09	0.00	-0.04	0.01
31. Purchased business	0.11	-0.08	0.04	-0.01	-0.02	0.05	0.09
32. No. of equity partners	0.02	0.10	0.00	0.02	-0.02	-0.10	-0.12
33. Habitual	-0.03	0.09	-0.02	-0.06	0.03	-0.04	-0.09
34. Total	-0.02	0.14	0.03	-0.05	0.03	-0.02	-0.11
35. Habitual failed	-0.06	0.14	0.00	0.05	0.11	-0.07	-0.01
36. Habitual successful	0.07	-0.05	-0.01	0.01	0.01	0.02	0.06
37. Mixed 1	-0.06	0.00	-0.02	-0.13	-0.06	0.00	-0.12
38. Mixed 2	0.07	0.06	0.03	0.04	0.00	0.00	-0.05
39. Serial	0.06	0.01	-0.03	0.02	0.06	-0.06	0.02
40. Portfolio	-0.08	0.08	0.01	-0.09	-0.02	0.02	-0.11

Pearson Correlation	26.	27.	28.	29.	30.	31.	32.
27. 10-49 Employees	-0.01	1.00					
28. 50 or more Employees	-0.06	-0.08	1.00				
29. Business 1-5yrs old	0.03	-0.09	-0.03	1.00			
30. Business 6-10 yrs old	0.01	-0.18	-0.09	-0.10	1.00		
31. Purchased business	0.04	0.02	0.02	0.01	-0.05	1.00	
32. No. of equity partners	0.01	0.26	0.07	0.02	0.06	0.17	1.00
33. Habitual	0.00	0.11	0.08	-0.11	0.07	-0.05	0.00
34. Total	0.00	0.15	0.08	-0.08	-0.01	0.00	0.07
35. Habitual failed	0.03	0.07	0.10	-0.08	0.01	-0.02	0.08
36. Habitual successful	0.01	-0.01	-0.01	-0.02	0.04	0.08	0.03
37. Mixed 1	0.00	0.07	-0.01	-0.03	0.02	-0.10	-0.09
38. Mixed 2	-0.09	0.00	0.06	-0.03	0.02	0.02	0.01
39. Serial	0.06	-0.05	0.01	-0.04	0.07	0.03	-0.01
40. Portfolio	-0.06	0.15	0.08	-0.07	0.00	-0.08	0.01

Note.  $r$  has to be 0.101 or higher to be significant at  $p < 0.05$  (two-tailed) and  $r$  has to be 0.133 or higher to be significant at  $p < 0.01$  (two-tailed).

**Table II      Correlation Matrix Relating to Performance based Differences among Habitual Entrepreneurs (n = 221)**

Pearson Correlation	Mean	S. Dev.	VIF	1.	2.	3.	4.
1. Age	-0.28	9.10	1.45				
2. Age <sup>2</sup>	82.50	118.47	1.27	-0.24			
3. Gender	0.91	0.29	1.41	0.11	-0.09		
4. Education	0.57	0.84	1.31	-0.11	-0.02	-0.08	
5. Managerial HK	10.84	5.79	1.22	0.17	-0.21	0.05	0.05
6. Managerial Capability	0.05	0.99	1.44	-0.04	-0.05	-0.03	-0.21
7. Technical Capability	-0.07	1.07	1.49	0.07	-0.04	0.23	0.05
8. Entrepreneurial Capability	-0.06	1.04	1.67	-0.10	0.07	0.08	0.03
9. Developmental approach	0.01	0.88	1.39	-0.07	0.01	0.06	-0.05
10. Parent(s) owned business	0.42	0.50	1.27	-0.02	0.12	0.06	0.05
11. Business similarity	0.13	0.95	1.23	0.11	-0.08	-0.09	0.16
12. Task similarity	0.01	0.96	1.10	0.01	0.01	-0.03	-0.07
13. Approval	-0.05	1.02	1.23	-0.04	0.07	-0.11	-0.16
14. Welfare	-0.16	0.94	1.41	0.11	0.08	0.08	0.01
15. Personal development	0.10	1.01	1.62	-0.08	0.09	0.01	0.07
16. Independence	-0.01	0.99	1.32	-0.10	-0.08	0.00	0.00
17. Financial motives	-0.08	1.00	1.21	-0.03	-0.11	0.21	-0.11
18. Reactive	-0.08	1.09	1.13	-0.05	-0.01	0.01	0.04
19. Expectation of competition	3.51	1.21	1.16	0.03	-0.13	0.07	-0.04
20. Business change	2.55	0.97	1.31	-0.02	0.12	0.15	-0.01
21. Agriculture	0.05	0.22	1.24	0.01	-0.02	0.07	-0.06
22. Manufacturing	0.10	0.30	1.30	0.10	-0.11	0.11	-0.04
23. Construction	0.10	0.29	1.25	-0.11	-0.02	0.11	-0.09
24. Differentiation strategy	0.05	0.96	1.56	0.04	-0.09	-0.18	-0.16
25. Innovation strategy	0.06	1.04	1.73	-0.02	0.02	0.24	0.01
26. Cost-based strategy	-0.09	0.98	1.42	0.01	0.04	0.00	-0.17
27. 10-49 Employees	0.22	0.41	1.49	0.06	-0.13	0.06	-0.04
28. 50 or more Employees	0.04	0.20	1.28	0.01	-0.09	0.07	-0.03
29. Business 1-5yrs old	0.02	0.14	1.36	-0.20	0.15	-0.07	0.11
30. Business 6-10 yrs old	0.24	0.43	1.41	-0.32	0.15	-0.04	0.13
31. Purchased business	0.13	0.33	1.29	0.04	-0.07	-0.16	-0.01
32. No. of equity partners	1.57	1.03	1.42	0.11	-0.05	0.02	0.16
33. Portfolio	0.06	0.50	1.23	-0.01	0.02	0.19	0.04
Pearson Correlation	5.	6.	7.	8.	9.	10.	11.
6. Managerial Capability	0.11						
7. Technical Capability	0.03	-0.04					
8. Entrepreneurial Capability	0.02	-0.01	-0.06				
9. Developmental approach	-0.01	0.12	0.20	0.23			
10. Parent(s) owned business	-0.16	-0.03	0.01	-0.06	0.00		
11. Business similarity	0.14	-0.10	-0.07	0.02	0.05	-0.02	
12. Task similarity	-0.11	-0.02	-0.02	-0.02	0.06	-0.10	-0.08
13. Approval	0.00	0.05	-0.14	0.08	-0.04	0.00	-0.08
14. Welfare	-0.12	0.05	-0.02	0.03	0.03	0.25	-0.15
15. Personal development	0.12	0.14	0.21	0.37	0.24	0.11	0.08
16. Independence	0.03	0.13	0.03	0.03	0.13	-0.11	-0.16
17. Financial motives	0.04	0.05	0.03	0.11	0.07	-0.07	-0.03

Pearson Correlation	5.	6.	7.	8.	9.	10.	11.
18. Reactive	-0.11	0.05	0.00	0.05	0.02	0.04	-0.03
19. Expectation of competition	-0.02	0.00	-0.01	0.05	-0.09	0.03	-0.06
20. Business change	0.01	0.10	0.08	0.07	0.12	0.11	0.01
21. Agriculture	-0.06	-0.04	-0.01	0.00	-0.03	0.23	0.00
22. Manufacturing	0.10	-0.04	0.12	-0.03	0.02	-0.07	0.01
23. Construction	0.04	-0.04	0.15	-0.02	-0.01	0.01	-0.10
24. Differentiation strategy	0.01	0.25	0.06	0.06	0.27	-0.12	-0.03
25. Innovation strategy	0.06	0.10	0.15	0.42	0.26	0.00	0.01
26. Cost-based strategy	-0.03	0.23	0.03	0.18	0.05	0.00	-0.10
27. 10-49 Employees	0.08	0.02	-0.16	0.10	-0.05	-0.03	0.00
28. 50 or more Employees	0.02	0.15	0.05	0.06	-0.05	-0.04	0.08
29. Business 1-5yrs old	-0.08	-0.04	-0.11	0.01	0.08	0.09	0.04
30. Business 6-10 yrs old	-0.02	0.00	-0.08	0.09	0.00	-0.01	0.06
31. Purchased business	-0.06	0.09	-0.17	-0.10	-0.03	0.01	-0.02
32. No. of equity partners	0.02	0.01	-0.06	0.07	-0.04	0.03	0.10
33. Portfolio	-0.01	0.14	0.08	0.08	-0.03	-0.04	0.06

Pearson Correlation	12.	13.	14.	15.	16.	17.	18.
13. Approval	-0.07						
14. Welfare	0.08	-0.19					
15. Personal development	-0.07	0.03	-0.04				
16. Independence	0.09	-0.08	0.08	-0.08			
17. Financial motives	-0.03	-0.10	0.02	-0.06	0.02		
18. Reactive	0.04	-0.05	0.00	0.03	0.01	-0.03	
19. Expectation of competition	-0.04	0.07	-0.03	-0.01	0.09	-0.01	-0.04
20. Business change	-0.09	0.11	0.03	0.20	-0.08	0.02	-0.07
21. Agriculture	0.02	0.00	0.12	0.12	-0.04	0.11	0.04
22. Manufacturing	-0.03	-0.06	-0.04	0.05	-0.13	-0.07	-0.13
23. Construction	0.04	0.04	0.03	-0.11	0.17	0.13	-0.09
24. Differentiation strategy	0.05	0.01	-0.18	-0.05	0.22	0.06	0.05
25. Innovation strategy	-0.10	0.08	-0.03	0.34	-0.07	0.11	-0.08
26. Cost-based strategy	-0.02	-0.02	0.19	0.15	-0.10	0.11	0.05
27. 10-49 Employees	-0.08	0.07	-0.07	0.05	-0.11	-0.01	0.01
28. 50 or more Employees	-0.05	-0.02	-0.06	0.13	-0.05	-0.05	-0.02
29. Business 1-5yrs old	0.00	0.00	-0.01	0.14	0.05	-0.01	-0.03
30. Business 6-10 yrs old	-0.01	0.04	0.02	0.06	0.01	0.05	0.07
31. Purchased business	-0.02	0.06	0.08	-0.11	-0.02	-0.02	0.12
32. No. of equity partners	-0.12	-0.11	0.06	0.01	-0.11	-0.02	0.01
33. Portfolio	0.01	-0.09	-0.02	0.09	-0.12	0.08	0.13

Pearson Correlation	19.	20.	21.	22.	23.	24.	25.
20. Business change	-0.05						
21. Agriculture	-0.01	-0.02					
22. Manufacturing	0.07	0.11	-0.08				
23. Construction	0.08	-0.10	-0.07	-0.11			
24. Differentiation strategy	-0.01	-0.05	-0.10	-0.12	-0.02		
25. Innovation strategy	0.00	0.31	0.08	0.08	-0.01	0.01	
26. Cost-based strategy	0.06	0.06	0.06	0.17	0.00	0.03	0.06
27. 10-49 Employees	-0.03	0.09	-0.12	0.12	0.05	0.02	-0.05
28. 50 or more Employees	0.10	0.17	0.16	0.16	-0.07	0.01	-0.06
29. Business 1-5yrs old	0.00	0.13	0.13	-0.05	-0.04	0.22	-0.09
30. Business 6-10 yrs old	-0.13	-0.02	-0.03	-0.05	-0.04	0.04	0.01
31. Purchased business	0.14	0.02	-0.03	0.01	0.02	-0.08	0.13
32. No. of equity partners	0.08	0.08	-0.03	0.08	-0.05	-0.05	-0.13
33. Portfolio	-0.10	0.05	0.03	-0.08	-0.07	0.07	-0.01

Pearson Correlation	26.	27.	28.	29.	30.	31.	32.
27. 10-49 Employees	-0.03						
28. 50 or more Employees	-0.08	-0.11					
29. Business 1-5yrs old	-0.12	-0.07	-0.03				
30. Business 6-10 yrs old	0.03	-0.22	-0.12	-0.08			
31. Purchased business	-0.02	0.06	-0.01	0.05	-0.06		
32. No. of equity partners	-0.01	0.30	0.02	0.02	0.02	0.28	
33. Portfolio	-0.09	0.14	0.04	0.02	0.06	0.09	0.02

Note.  $r$  has to be 0.132 or higher to be significant at  $p < 0.05$  (two-tailed) and  $r$  has to be 0.176 or higher to be significant at  $p < 0.01$  (two-tailed).



## **APPENDIX VII**

**Table I OLS Regression Relating to Weighted I and Weighted II**

Independent Variables	Control Model		Model		Control Model		Model	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	-0.12	*	-0.12	*	-0.08		-0.08	
Age <sup>2</sup>	0.02		0.02		0.06		0.06	
Gender	0.09	†	0.10	†	0.05		0.04	
Education	-0.05		-0.04		-0.07		-0.07	
Managerial human capital	-0.03		-0.03		0.01		0.01	
Managerial capability	0.20	****	0.20	****	0.26	****	0.25	****
Technical capability	-0.10	†	-0.12	*	0.02		0.02	
Entrepreneurial capability	0.22	****	0.21	****	0.21	****	0.21	****
Development	-0.04		-0.04		0.00		0.01	
Parent business owners	-0.09	†	-0.08		-0.07		-0.07	
Business similarity	-0.04		-0.04		-0.01		-0.01	
Task similarity	-0.06		-0.06		-0.01		-0.01	
Approval	-0.01		-0.02		-0.01		-0.01	
Welfare	-0.01		-0.01		0.03		0.03	
Personal Development	0.06		0.07		0.00		0.00	
Independence	-0.03		-0.03		0.00		0.01	
Financial motives	0.12	*	0.12	*	0.14	**	0.14	**
Reactive motives	0.07		0.07		0.05		0.05	
Expectation of competition	-0.03		-0.03		-0.04		-0.03	
Business change	-0.07		-0.07		-0.14	**	-0.14	**
Agriculture	-0.06		-0.06		-0.12	*	-0.12	*
Manufacturing	0.02		0.01		0.01		0.02	
Construction	-0.08		-0.08		-0.04		-0.04	
Differentiation strategy	0.07		0.07		0.08		0.08	
Innovation strategy	0.04		0.05		0.06		0.06	
Cost-based strategy	-0.01		-0.01		-0.06		-0.06	
10-49 Employees	0.09	†	0.10	†	0.10	†	0.10	†
50 or more Employees	-0.02		-0.02		-0.01		-0.01	
Business 1-5yrs old	-0.02		-0.02		0.03		0.02	
Business 6-10 yrs old	0.01		0.02		0.08		0.08	
Purchased business	-0.04		-0.04		-0.03		-0.02	
No. of equity partners	-0.04		-0.05		-0.02		-0.02	
SERIAL	-		-0.08		-		-0.05	
PORTFOLIO	-		-0.08		-		0.01	
F-value	3.16	****	3.06	****	3.77	****	3.58	****
R <sup>2</sup>	0.23		0.23		0.26		0.26	
Adjusted R <sup>2</sup>	0.16		0.06		0.19		0.19	
Change in R <sup>2</sup>	-		0.01		-		0.00	
N	378		378		378		378	

Note. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

**Table II OLS Regression Relating to Profit Relative to Competitors and Standard of Living**

Independent Variables	Control Model		Model		Control Model		Model	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	-0.14	*	-0.14	*	-0.19	***	-0.18	***
Age <sup>2</sup>	0.00		0.01		0.05		0.05	
Gender	0.08		0.09		0.03		0.03	
Education	0.01		0.02		0.03		0.03	
Managerial human capital	0.01		0.01		-0.03		-0.03	
Managerial capability	0.09		0.10		0.09		0.09	
Technical capability	0.06		0.05		-0.04		-0.05	
Entrepreneurial capability	0.20	**	0.20	**	0.15	*	0.14	*
Development	-0.12	*	-0.13	*	-0.05		-0.05	
Parent business owners	-0.04		-0.03		-0.02		-0.01	
Business similarity	0.02		0.04		-0.06		-0.06	
Task similarity	0.00		0.01		-0.03		-0.03	
Approval	0.06		0.05		-0.01		-0.01	
Welfare	0.01		0.00		-0.04		-0.05	
Personal Development	0.02		0.03		-0.02		-0.01	
Independence	0.02		0.01		-0.01		-0.01	
Financial motives	0.07		0.07		0.14	**	0.14	**
Reactive motives	0.02		0.03		0.01		0.00	
Expectation of competition	-0.03		-0.04		-0.07		-0.07	
Business change	-0.06		-0.06		-0.17	**	-0.17	**
Agriculture	-0.07		-0.07		0.01		0.01	
Manufacturing	0.03		0.02		0.06		0.06	
Construction	-0.03		-0.03		-0.08		-0.07	
Differentiation strategy	0.08		0.08		0.05		0.05	
Innovation strategy	0.10	†	0.11	†	0.05		0.06	
Cost-based strategy	0.10	†	0.11	†	-0.08		-0.08	
10-49 Employees	0.08		0.10		0.17	**	0.17	**
50 or more Employees	0.01		0.02		0.11	*	0.11	*
Business 1-5yrs old	-0.01		-0.02		-0.04		-0.05	
Business 6-10 yrs old	0.03		0.03		-0.05		-0.04	
Purchased business	0.02		0.01		-0.03		-0.03	
No. of equity partners	-0.08		-0.08		-0.01		-0.01	
SERIAL	-		-0.04		-		-0.09	
PORTFOLIO	-		-0.13	*	-		-0.05	
F-value	2.01	***	2.05	***	2.34	****	2.29	****
R <sup>2</sup>	0.16		0.17		0.18		0.19	
Adjusted R <sup>2</sup>	0.08		0.09		0.10		0.10	
Change in R <sup>2</sup>	-		0.01	†	-		0.01	
N	373		373		378		378	

Note. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

**Table III OLS Regression Money Taken Out I and Money Taken Out II**

Independent Variables	Control Model		Model		Control Model		Model	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	-0.10	*	-0.10	*	-0.09		-0.08	
Age <sup>2</sup>	-0.03		-0.04		-0.08		-0.07	
Gender	0.09	†	0.08	†	0.02		0.06	
Education	0.20	****	0.20	****	0.16	*	0.18	*
Managerial human capital	0.02		0.03		0.05		0.04	
Managerial capability	0.09	†	0.07	†	0.03		0.06	
Technical capability	0.00		-0.01		0.08		0.05	
Entrepreneurial capability	0.14		0.13		0.15	*	0.14	*
Development	-0.14	**	-0.13	**	-0.06		-0.07	
Parent business owners	-0.05	**	-0.04	**	-0.02		-0.01	
Business similarity	-0.11		-0.12		-0.18	***	-0.13	***
Task similarity	-0.02	*	-0.03	*	-0.02		-0.01	
Approval	-0.07		-0.06		-0.04		-0.08	
Welfare	-0.04		-0.04		-0.03		-0.06	
Personal Development	0.06		0.06		0.04		0.06	
Independence	0.01		0.02		0.02		-0.01	
Financial motives	0.14	**	0.14	**	0.12	*	0.12	*
Reactive motives	0.13	**	0.12	**	0.11	*	0.12	*
Expectation of competition	-0.04		-0.03		-0.01		-0.01	
Business change	0.07		0.07		0.06		0.08	
Agriculture	-0.09	†	-0.09	†	-0.08		-0.08	
Manufacturing	-0.05		-0.04		-0.02		-0.06	
Construction	-0.04		-0.02		-0.09	†	-0.08	†
Differentiation strategy	-0.05		-0.04		-0.04		-0.04	
Innovation strategy	-0.07		-0.08		-0.10	†	-0.08	†
Cost-based strategy	0.01		0.01		-0.04		-0.01	
10-49 Employees	0.32	****	0.30	****	0.20	****	0.25	****
50 or more Employees	0.19	****	0.19	****	0.12	*	0.15	*
Business 1-5yrs old	-0.11	*	-0.11	*	-0.10	†	-0.12	†
Business 6-10 yrs old	-0.01		-0.01		-0.01		-0.01	
Purchased business	-0.07		-0.06		-0.02		-0.04	
No. of equity partners	0.03		0.03		0.08		0.06	
SERIAL	-		-0.09	†	-		-0.11	*
PORTFOLIO	-		0.07		-		-0.35	****
F-value	5.81	****	5.83	****	3.40	****	4.90	****
R <sup>2</sup>	0.36		0.38		0.25		0.34	
Adjusted R <sup>2</sup>	0.30		0.31		0.17		0.27	
Change in R <sup>2</sup>	-		0.02		-		0.09	****
n	364		364		364		364	

Note. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

**Table IV OLS Relating to Employment Growth (log) and Percentage Change in Sales**

Independent Variables	Control Model		Model		Control Model		Model	
	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig	$\beta$	Sig
Age	-0.04		-0.04		-0.16	**	-0.17	**
Age <sup>2</sup>	-0.03		-0.03		0.04		0.04	
Gender	0.01		0.02		-0.09		-0.09	
Education	-0.01		-0.01		0.02		0.02	
Managerial human capital	0.02		0.01		0.08		0.07	
Managerial capability	0.02		0.03		0.09		0.10	
Technical capability	-0.12	*	-0.11	†	0.09		0.09	
Entrepreneurial capability	0.09		0.09		0.19	**	0.20	**
Development	-0.04		-0.05		-0.08		-0.08	
Parent business owners	-0.08		-0.08		-0.08		-0.08	
Business similarity	-0.02		-0.01		0.02		0.03	
Task similarity	-0.07		-0.07		0.00		0.00	
Approval	-0.09	†	-0.09	†	0.08		0.07	
Welfare	0.14	**	0.14	**	0.01		0.01	
Personal Development	0.15	**	0.15	**	0.06		0.06	
Independence	-0.04		-0.05		-0.10	†	-0.11	†
Financial motives	-0.02		-0.01		0.04		0.05	
Reactive motives	0.07		0.07		0.03		0.03	
Expectation of competition	-0.07		-0.07		-0.09		-0.09	
Business change	0.05		0.05		0.06		0.06	
Agriculture	-0.10	†	-0.10	†	-0.03		-0.03	
Manufacturing	-0.01		-0.02		0.10		0.09	
Construction	0.03		0.02		0.02		0.02	
Differentiation strategy	0.05		0.04		-0.02		-0.02	
Innovation strategy	0.05		0.06		-0.01		-0.01	
Cost-based strategy	-0.08		-0.07		-0.09		-0.09	
10-49 Employees	0.12	*	0.13	*	-0.11	†	-0.11	†
50 or more Employees	0.29	****	0.29	****	-0.06		-0.06	
Business 1-5yrs old	0.04		0.04		-0.01		-0.01	
Business 6-10 yrs old	0.03		0.03		0.11	†	0.11	†
Purchased business	-0.02		-0.03		-0.02		-0.02	
No. of equity partners	-0.06		-0.06		0.06		0.06	
SERIAL	-		0.04				0.04	
PORTFOLIO	-		-0.05				-0.02	
F-value	2.71	****	2.62	****	1.96	**	0.86	**
R <sup>2</sup>	0.20		0.21		0.18		0.18	
Adjusted R <sup>2</sup>	0.13		0.13		0.09		0.08	
Change in R <sup>2</sup>	-		0.01		-		0.00	
n	375		375		322		322	

Note. † p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; \*\*\*\* p < 0.0001

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