The influence of business knowledge and work experience, as antecedents to entrepreneurial success.

By

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Introduction

1.1 Research introduction

The encouragement of entrepreneurial activities has been recommended as a way to stimulate economic growth in less developed countries (Harper 1991). Lau and Busenitz (2001) quoted various researchers (Reynolds 1991; Jackson, Klich & Poznanska 1999; Wright, Hoskisson, Filatotchev & Buck 1998) who support the view that the emergence of new and small enterprises has been recognised as having a significant impact on economic development.

In many developing countries informal employment represents the largest share of job growth, comprising between 40% to 60% of the urban labour force of most African countries (Honig 1998:373).

It is important to note that the South African's Skills Development Act, No 97 of 1998, recognises the need to increase the skill levels of individuals, and one of the purposes of this act is to promote self employment.

South Africa's job creation, poverty alleviation and employment strategy framework (1998) focuses on economic and employment growth. This process has been described as a deepening of individuals' specialised capabilities to equip them to access incomes through formal sector jobs and through small and medium enterprises (SME's), thereby positively contributing to the economic success and social development of our country.

Government could magnify its education and experience-based programs, should there be some tentative evidence from this research in support of the constructs on entrepreneurial success.

Education has been directly linked to successful entrepreneurship (Nieman, Hough,& Nieuwenhuizen 2003:7).

The myth that entrepreneurs are born and not made (Timmons 1994:23) can be dismissed by the notion that entrepenurship can be enhanced through education, accumulation of the relevant skills, experiences and know-how. Matriculation has been recognised to increase the capacity to pursue entrepreneurial activities and it is also accepted that tertiary education strengthens the durability of entrepreneurial activity (Nieman et al. 2003: 29).

Specific SETA'S (Sector Education and Training Authority as defined by the Skills Development Act No 97 of 1998) could have a larger focus on entrepreneurial skills development, in support of the aims and purposes of the skills development strategy.

National incentive and education programs designed to stimulate new venture development have been instituted by the governments of a large number of Asian and Latin American countries, as well as in the transition economies of Central and Eastern Europe (Audretsch 1991; Gibb 1993).

South Africa's enterprise density (the number of people in the population for which self-employment is the primary source of household income per 100 people) is 2 percent, compared to 2.8 % in the United States of America, 5.9% in Italy and 3.3% in Germany, (Ladzani & Van Vuuren 2002).
The 2003 global entrepreneurship monitor report (Reynolds, Bygrave, Autio & Others 2004: 9) puts South Africa's firm entrepreneurship index at 1.12% (world average 2.00%), South Africa's percent employment in entrepreneurial firms at 7.84% (world average 12.31%) and South Africa's entrepreneurial firm's percent at 4.46% (world average 11.49%).

It is important to remember that Honing (1998) mentioned various researchers who indicated that one of the most critical issues facing developing countries was to understand where entrepreneurs originate from and what characteristics are relevant to their success.

Although entrepreneurs act as catalysts of economic activity for the entire economy (Bygrave & Minniti 2000), many of them fail.

Some fail at their infancy stage and some fail within a few years after start-up. In South Africa up to 50% of new small businesses eventually fail, while in the United States of America, 75 to 80% fail within the first three to five years (Ladzani & Van Vuuren 2002).

Most entrepreneurs often start a new enterprise ignorant of many key dimensions of running their enterprises and must obtain the necessary information if they are to survive (Shepard, Douglas & Shanley 2000).

A new enterprise has few resources other than the knowledge of the entrepreneur. This knowledge is essential to control and apply other resources that might lead to competitive advantage and superior performance (Chrisman & McMullan 2000), however the fact remains that most start-ups begin with very little business knowledge (Aldrich & Martinez 2001). Some attribute this to the lack of preparedness and failure to accurately estimate the cost of starting and running one's own enterprise (Macleod 1995).

While accepting that entrepreneurs can achieve economic growth, what are the necessary antecedents required to achieve success?

Entrepreneurial competency, largely acquired on an individual basis, consists of a combination of skills, knowledge and resources that distinguish an entrepreneur from his or her competitors (Fiet 2000). Focusing on those attitudes that impact on the success of the venture will boost the effectiveness of training and development programs (Hisrich 2000).

In other words, it is the quality of the entrepreneur's capability — his or her ability to generate future income — that will ensure enterprise success (Erikson 2001).

Antecedents of entrepreneurial competencies include the entrepreneur's experience, training and education (Man, Lau & Chan 1999).

This research study will review two constructs — namely entrepreneurial business knowledge and work experience — from the available literature and through scientific empirical research, report their effects on entrepreneurial success.

Entrepreneurial business knowledge refers to the ascribed roles for managerial expertise in entrepreneurial success and entails, to varying degrees, marketing, financial management/book-keeping, self-supervision, and, if applicable, the supervision of paid employees or unpaid family workers, among other activities (Boden & Nucci 2000).

Experience refers to the knowledge or ability of an individual gained through circumstances in a particular job, organisation, or industry (Hill, 1992; McCall, Lombardo & Morrison 1988).

In the work of Jovanovic (1980) a general equilibrium model of enterprise formation and dissolution was developed. This model has one facet that is of particular relevance to this study. Jovanovic (1980) assumes that individuals have no knowledge of their managerial ability prior to becoming business owners, but become aware of their managerial ability — or lack thereof — ex post. Individuals with inferior managerial competence will subsequently select out of business ownership.

While Jovanovic (1980) assumes that individuals have no knowledge of their managerial ability prior to entering business ownership, it seems reasonable that managerial experience acquired in the wage sector will tend to enhance workers' latent managerial ability as well as their knowledge of their managerial competence (Boden & Nucci 2000).

In many emerging populations, potential constraints have been identified that include the lack of pertinent entrepreneurial and organisational knowledge (Aldrich & Fiol 1994), acquiring knowledge through experimentation, creating and using network linkages, and accumulating resources (human and otherwise) to overcome difficulties (Aldrich & Martinez 2001). The lack of knowledge also leads to difficulties associated with insufficient technical expertise (Lau & Busenitz 2001).

Potential entrepreneurs need general readiness, a predisposition to initiate a venture when the individual experiences a precipitating event, such as retrenchment (Mueller & Thomas 2000).

The entrepreneur's capacity to gain new knowledge and abilities during the start-up process has been seen as critical to new venture success (Gartner, Starr & Bhat 1998).

The need remains for both entrepreneurial competence and commitment in ensuring enterprise generation and performance. Over time accretion of knowledge and resources must occur to increase competence (Erikson 2001).

Many start-ups' lack of preparedness is compounded by not having experience (Galbraith, 1982; Meyer, Lenoir & Dean 1988). Quite clearly, the presence of entrepreneurial commitment without adequate entrepreneurial competence may be regarded as a waste of both time and resources (Erikson 2001).

From the above authors it is clear that a lack of business knowledge and/or business experience hinders firm growth and entrepreneurial success (Tegarden, Echols & Hatfield 2000).

Interestingly, research has shown evidence that individuals choose to become self-employed based on preference, rather than necessity (Dennis 1996). If entrepreneurship is self-reinforcing, then it is also path-dependent. Randomly, a particular sequence of choices causes the dynamics of the process to push the community towards a specific outcome among all other possible ones.

It is important to note that when undertaking new ventures, future entrepreneurs must make sure they can demonstrate their business knowledge and work experience towards possible stakeholders. Entrepreneurs should be able to demonstrate that they have supplemented their general qualifications with industry-specific experience as well as functional education and experience (Tegarden et al. 2000).

Many small to medium-sized firms suffer from limited information, finance, management time and experience which places limitations on internationalisation efforts (Chetty & Campbell-Hunt 2003).

1.2 Objectives of the study

The aim of this study is simply to conduct a literature review to identify the role of the two constructs, namely entrepreneurial business knowledge and work experience, in relation to entrepreneurial success, and through scientific empirical research add evidence in support or opposition to the hypothesis put forward.

Although difficult, a further objective of the study will be to attain the level of business knowledge and work experience prevalent in entrepreneurial success, and attempt to show how business knowledge and work experience may play distinct, but perhaps complementary roles, in the entrepreneurs' success.

It has been noted (Nieman et al. 2003:7) that entrepreneurial research has been moving towards understanding skills and competencies that are required by entrepreneurs to function in all the activities related to the entrepreneurial trade.

This study will not be covering the "informal sector entrepreneur" as defined by the International Labour Organisation (ILO), which has been instrumental in defining and researching this field (Honig 1998).

The lack of institutional regulation of the informal sector microenterprise and its heterogeneity makes this population a less than ideal domain to study the impact of work experience and business knowledge as antecedents to entrepreneurial success.

Although micro enterprises or survivalists have entrepreneurial characteristics their ability to grow and create employment, they are restricted by their scarcity of skills, business knowledge and resources (Nieman et al. 2003:36).

In addition, a limit of 10 employees is a size constraint used by many researchers researching the "informal sector" (Honig 1998), which will not be used in this study.

Firm size, firm age, and industry (i.e. manufacturing, service, retail as per Standard Industrial Classification (SIC) codes) will be included as control variables, as found in Wiklund's study (1999).

In order to indicate some measure of stability, some researchers such as Luk (1996) suggest that successful small enterprises must be in operation for at least three years. Previous research points out that on average only about 10 percent of small enterprises can survive three years of operation (Vesper 1990). Larson, (1992) states that enterprises should be in existence for at least five years.

It has been found that owners of micro-enterprises rarely keep financial records and typically fail to distinguish between household and business transactions. Due to this lack of separation, detecting fully how much, if any, return to capital, growth, etc has occurred over a specific period is difficult, if not impossible (Honig 1998:373).

In terms of the Harris-Todaro (1970) model, self employment and informal employment in the urban sector are considered temporary holding measures by which aspiring rural migrants await their turn in the queue for limited and highly desirable formal employment (Honig 1998:378).

This study will not focus on research into micro business owners, who do not engage in innovation or new marketing practices and only grow at the rate of inflation (Nieman et al. 2003:10).

The empirical research was conducted using the methodology as described in the research design, sampling and data analysis to reach a conclusion on the hypothesis set forward in this study.

The overall education, experience and business knowledge levels of the entrepreneurs will be examined in terms of the human capital theory (Schultz 1959), which predicts an increasing likelihood of entrepreneurial activity, productivity, and relative success associated with education and experience (Honig 1998:375).

In other words, this study will try to understand how the effect of the two independent variables (business knowledge and work experience) may contribute to dependent variable, entrepreneurial success.

1.3 Hypotheses

The following hypotheses are put forward:

H (null) Business knowledge and work experience does not have a significant effect on entrepreneurial success.

H (alternative) Business knowledge and work experience has a significant effect on entrepreneurial success.

1.4 The study variable entrepreneur operationalised

To prevent definitional ambiguities, Sharma and Chrisman (1999) in their study quoted various researchers and identified two distinct clusters of thought on the meaning of entrepreneurship.

The first group of scholars focused on the characteristics of entrepreneurship (e.g. innovation, growth, uniqueness, etc.) while the second group focused on the outcomes of entrepreneurship (e.g. creation of value).

Scholars who subscribed to the notion that entrepreneurship should be defined by its characteristic attributes appear to be the largest group, accounting for 79%.

A crucial, though relatively neglected, dimension of research on types of entrepreneurs has been in the area of entrepreneurial teams. Several studies have been reviewed and noted that entrepreneurial teams started 50% of businesses.

Businesses owned by teams have generally more diversified skills and competence bases to draw upon, as well as a wider social and business network, which can be used to acquire additional resources (Ucbasaran, Westhead & Wright 2001).

In Ucbasaran, Westhead and Wright's paper (2001) Gartner's (1985) conceptual framework for describing the phenomenon of new venture creation, integrates four major perspectives in entrepreneurship:
- the characteristics of the individuals starting the new venture,
- the organisation they create,
- the environment surrounding the new venture, and
- the process by which the new venture is created.

Ucbasaran, Westhead and Wright (2001) suggested that the processes associated with the entrepreneurial phenomenon could be discussed with regard to opportunity recognition and exploitation by entrepreneurs, ability

based on skills, knowledge, competencies, and the ability to obtain and co-ordinate scarce resources.

Competencies here refer to individual characteristics such as the knowledge, skills, and/or abilities required to perform a specific job. Testing his job performance theory, Boyatzis (1982) found significant performance relationships with "general" people and organisation competencies (oral presentation skill, decision making ability, conceptualisation ability, diagnostic use of concepts, and use of power) and "specific" competencies (technical skill and industry skill).

Entrepreneurship studies have developed skill-ability clusters that are similar to those found in Boyatzis's management-leadership theory. Opportunity recognition appears in these studies as an important additional general entrepreneurial skill, and the components of people and organisation competency are combined as "managerial skill" (Baum, Locke & Smith 2001).

The path from general competencies to specific motivation is also consistent with social, cognitive and goal theories explaining that people (Bandura, 1986) base their goals and their efficacy evaluations on self-knowledge about ability (Baum et al. 2001).

This study will focus on the outcomes of entrepreneurship and will define entrepreneurs as members of the top management team and those individuals who meet at least two of three conditions. They were either founders, currently hold an equity stake of at least 10%, or were identified as being actively involved in strategic decision making (Ensley et al. 2002:372).

Chapter 2

Entrepreneurial Success

2.1 Literature review on entrepreneurial success

The entrepreneurial success construct has been found to have two distinct dimensions: economic success and the entrepreneur's satisfaction (Hisrich, 2000).

There are small businesses owners who see themselves as successful if their businesses supports a certain lifestyles, even though they earn a smaller income compared to when they where employees (Nieman et al. 2003:10).

Nieman et al. (2003:34) quotes Adhikary, Rai & Rajaratnam (1999:59) as defining successful woman entrepreneurs as having a business for longer than two years, having a staff complement of more than five but less than thirty, making a profit and expanding in terms of infrastructure and growth.

Articulating two distinct domains of success reveals uniquely different profiles for economic success rather than for entrepreneurial satisfaction. The relationships between individual attitudinal orientations and economic success display non-monotonic patterns (Hisrich. 2000).

This argument is further strengthened in the work of Luk (1996) who reported that the highest level of economic success did not correspond to the highest levels of entrepreneurial behaviour. In addition Luk (1996) observed that the individual's attitudes had twice the effect upon the economic success of the venture, as did the firm's characteristics. Successful entrepreneurs indicated that good interpersonal skills were a great personal asset, which facilitated business growth.

Conversely, the firm's characteristics had twice the influence upon the satisfaction of the entrepreneur as did the individual's attitudes (Hisrich, 2000).

Recent investigations derived from more sophisticated theoretical frameworks suggest that some personal characteristics of entrepreneurs, such as their self-efficacy and overall proclivity for entrepreneurship, may play important roles in entrepreneurial success (Baron & Markman 2003:43).

Specifically, high social capital provides entrepreneurs with enhanced access to information and increased cooperation and trust from others.

Moreover, entrepreneurs who possess high social capital (as based on extensive social networks, status, personal ties, and referrals) are more likely to receive funds from venture capitalists than entrepreneurs who are lower on this dimension (Baron & Markman 2003:44).

In general, these are entrepreneurs possessing high levels of social capital: favourable reputations, an established record in the field, a degree from an excellent university and work experience with reputable employers (Baron & Markman 2003).

Research conducted by Baron and Markman (2003) does not suggest that the effects of social competence are stronger or more important in determining entrepreneurs' success than those of other factors. On the contrary, they fully share the perspective, reflected in current entrepreneurship research, that many factors, interacting in complex ways, ultimately determine the success of individual entrepreneurs — their personal characteristics, market forces and conditions, industry trends and dynamics (Baron & Markman 2003:54).

Entrepreneurial success is often associated with the entrepreneur's personality traits, social networks, and prior knowledge. Theses form the antecedents of entrepreneurial alertness to business opportunities. Entrepreneurial alertness, in its turn, is a necessary condition for the success of the opportunity

identification triad: recognition, development, and evaluation (Ardichvili, Cardozo & Sourav 2003:105).

Entrepreneurship researchers have pointed to growth as the crucial indicator of venture success (Covin & Slevin 1997; Low & MacMillan 1988). This study will concentrate on venture growth as our performance measure. Success (Hisrich 2000) is measured in terms of sales growth, income growth, employment trends and satisfaction.

The three principal elements of entrepreneurship (the individual, the firm, and the environment) have been shown to be interrelated and to significantly differentiate the more from the less successful entrepreneurs (Hisrich, 2000).

Some researchers (Lumpkin & Dess1996; Wiklund 1999) suggest that this type of study should also control environmental dynamism and capital availability.

Environmental dynamism as described by Lumpkin and Dess (1996) is the relationship between entrepreneurial orientation (EO) and performance. It may be argued that this is more complex than previously assumed. Other variables, in addition to EO, could influence performance directly or may moderate the relationship between EO and performance. This relationship may in particular be contingent upon the characteristics of the environment (Zahra & Covin 1995).

Population ecology models suggest that the environment has a direct effect on firm performance regardless of the strategic choices (Aldrich 1979; Tsai, MacMillan & Low 1991).

The dynamics of demand, sometimes expressed as market attractiveness, environmental munificence, or dynamism, appears to be the most important variables in the environment to enhance performance. Dynamic environments give rise to abundant opportunities for small firms to take advantage of (Chandler & Hanks 1994; Covin & Slevin 1991; Zahra 1993). In particular,

market growth is cited as being important to small firm performance (Chandler & Hanks 1994; Lumpkin & Dess 1996; Sandberg & Hofer 1987).

Lumpkin and Dess (1996) also hypothesise that firms in growing industries may perform better than other firms, regardless of their EO and vice versa; i.e. market growth and EO have independent, positive effects on performance. Thus, drawing on the above, environmental dynamism is an important control variable, likely to have a positive influence on performance. This study will use three survey items to capture increases in "environmental dynamism", taken from Miller (1987).

Access to financial capital (Wiklund 1999) can influence the performance of small firms. Financial capital provides a buffer against unforeseen difficulties that may arise from environmental changes, poor management, etc. (Castrogiovianni 1996; Cooper, Gimeno-Gascon & Woo 1994).

Financial capital also provides organisational financial slack, facilitating the necessary response to changing conditions and increasing the willingness of the firm to innovate and change (Castrogiovianni 1996; Zahra 1991). A consistent finding across different studies is that access to financial capital affects small firm growth (Storey 1994).

Regarding new ventures, Cooper and Gimeno-Gascon (1992) reported that in six out of eight studies they reviewed, availability of capital was associated with better performance. In his research Wiklund (1999) used the subjective measure "capital availability satisfaction". This measure used in Wiklund's work (1999) was measured on a seven-point opposite statement scale ranging from "insufficient and a great impediment for our development" to "fully satisfactory for the firm's development."

In addition, in a longitudinal study on new firm performance, Cooper, Gimeno-Gascon and Woo (1994) found that capital availability was a predictor of firm performance. Consequently, it is important to control the influence of financial capital on firm-level performance.

It is difficult to obtain objective measures of whether capital availability for small firms is sufficient or not since it may be that demand for financial capital does not exceed supply. Many small business managers are also reluctant to allow outsiders to provide finance (Storey 1994; Wiklund 1998; Wiklund, Davidsson, Delmar & Aronsson 1997).

2.2 Growth

As the field of entrepreneurship has developed, firm growth has been almost implicitly construed as a condition or assumption of entrepreneurship (Gundry & Welsch 2001).

Wiklund (1999) argues that there is no consensus on the appropriate measures of small firm performance, and prior research had focused on variables for which information was easy to gather.

Wiklund (1999) mentions various researchers (Brown 1996; Brush & Vanderwerf 1992; Chandler & Hanks 1993; Fombrun & Wally 1989; Tsai, MacMillan & Low 1991) that advocated growth as the most important performance measure in small firms.

It has also been argued that growth is a more accurate and easily accessible performance indicator than any other accounting measures and hence superior to indicators of financial performance.

An alternative view is that performance is multidimensional in nature and that it is advantageous to integrate different dimensions of performance in empirical studies (Cameron 1978; Lumpkin & Dess 1996). It is possible to regard financial performance and growth as different aspects of performance, each revealing important and unique information.

A firm could, for instance, choose to trade off long-term growth for short-term profitability. Taken together, growth and financial performance give a richer description of the actual performance of the firm than each does separately (Zahra 1991).

Wiklund (1999) has suggested that the extent to which performance along one dimension affects the other is an empirical question that should be tested. However, it is important to determine if firms experiencing growth also perform well financially, rather than a priori stating that growing firms perform well because performance was defined this way.

The growth process as such provides further arguments for advocating sales growth. The growth process is likely to be driven by increased demand for the firm's products or services.

That is, sales increase first, thus allowing for the acquisition of additional resources such as employees or machinery (Flamholtz 1986). It seems unlikely that growth in other dimensions could take place without increasing sales. It is also possible to increase sales without acquiring additional resources or employing additional staff, by outsourcing the increased business volumes. In this case, only sales would increase. In conclusion, sales growth has a high generality (Wiklund 1999).

There has been widespread interest in the creation of new employment. This makes employment growth another important aspect to capture. In a process of rationalisation, it is possible to replace employees with capital investments. This could result in an inverse relationship between capital investment and employment growth.

Consequently, assets are another important aspect of growth. Measuring growth in terms of assets is often considered problematic in some sectors (e.g. the service sector) as an accounting problem (Weinzimmer, Nystrom & Freeman 1998).

This could translate in an expansion of intangible assets and would not be reflected on the firm's balance sheet. Thus in some sectors, the problem of studying growing assets in service industries for example, would relate to the difficulty in data collection rather than lack of relevance.

When assessing performance, comparisons of competing firms in the market reveal important supplementary information (Birley & Westhead 1990). Such measures give information on whether firms are simply pulled along by market trends or if they show growth patterns that deviate substantially from their industry in general.

In summary, previous research suggests that performance measures should consider both growth and financial performance. Moreover, performance should also be related to the performance of competitors. When growth is studied, the expansion of sales, employment, and assets all provide important and complementary information. Therefore, in testing the hypotheses, this study used several indicators of small company performance (Wiklund 1999).

In this study the performance questions where asked in relation to the years 2000, 2001 and 2002. In order to calculate the compound performance for the three-year period, the annual figures concerning each item should be averaged before summation. However in response to resistance by the respondents to hand over private financial information, the growth and financial ratio questions are structured to ask the opinion of the respondent on the various items on a five point opposite statement scale ranging from **"significant decline"** to "significant increase".

As discussed, four indicators of growth will be utilised (Wiklund 1999):

- sales growth,
- employment growth,
- sales growth compared to competitors, and
- market value growth compared to competitors.

2.2.1 Sales growth

Hoy, McDougall and D'Souza (1992) stress that a consensus has been reached among researchers that sales growth is the best growth measure. It reflects both short- and long-term changes in the firm, and is easily obtainable. Furthermore, these authors, as well as Barkham, Gudgin, Hart and Hanvey (1996), maintain that entrepreneurs consider sales growth to be the most common performance indicator.

In this study the annual sales growth rate will be summarised by the respondents' own opinion from three adjacent years' sales figures. Although this study will try to capture only organic growth, sales gains from mergers and acquisitions cannot be included or discounted without the presence of audited financial statements.

2.2.2 Employment growth

The employment growth rate will be assessed using the same principles as employed to assess the sales growth.

2.2.3 Sales growth compared to competitors

In order to measure growth, compared to competitors, respondents rated their own firm on the same five-point scale, and assessed using the same principles as employed to assess the sales growth.

2.2.4 Market value growth compared to competitors

The market value (Wiklund 1999) item has been argued to better capture the "real" value of the firm than traditional accounting measures such as assets or net worth.

The precise way to calculate this item is to take the gross profits (Wiklund 1999) and divide by current year sales to calculate the gross margin, which is a better

performance measure because it is size-neutral. However gross profits are likely to be leveraged by sales volume, giving a bias in favour of larger firms.

Due to the lack of financial statements, "market value growth compared to competitors" will be assessed in the same way as "sales growth compared to competitors".

2.3 Entrepreneurial satisfaction

Entrepreneurial intensity is the degree to which entrepreneurs are willing to exert maximum motivation and effort towards the success of their venture.

Gundry and Welsch (2001) developed the Entrepreneurial Intensity (EI) scale which was adapted from the Entrepreneurial Profile Questionnaire (EPQ), an instrument that has been successfully implemented in a variety of research sites including the United States, Mexico, Russia, Poland, Romania, and Hungary. Entrepreneurial satisfaction was measured by asking the respondents if the "business is the most important activity in my life? ".

Entrepreneur opportunity costs (Gundry & Welsch 2001) will be operationalised as the extent to which entrepreneurs are willing to incur personal and professional sacrifices for the sake of the venture (i.e. "I would rather own my own business than pursue another promising career").
In another study, six categories of reasons individuals gave for (Carter, Gartner Shaver & Gatewood 2003) starting businesses were identified as follows:

- The first category, innovation, involved reasons that describe an individual's intention to accomplish something new;
- the second category, independence, described an individual's desire for freedom, control, and flexibility in the use of one's time;
- the third category, recognition, described an individual's intention to have status, approval, and recognition from one's family, friends, and from those in the community;
- the fourth category, roles, described an individual's desire to follow family traditions or emulate the example of others;

- the fifth category, financial success, involved reasons that describe an individual's intention to earn more money and achieve financial security;
- and the sixth category, self-realisation, described reasons involved with pursuing self-directed goals.

In their study Carter et al, (2003) found that both entrepreneurs and non-entrepreneurs rated independence, financial success, and self-realisation as more important than recognition, innovation or roles. Nascent entrepreneurs were more similar to non-entrepreneurs than they were different. The primary exception is in terms of desiring recognition. This study clearly indicates that there are no clear-cut differences between entrepreneurs and non-entrepreneurs.

The following table summarises the success variable based on the literature, broken down into their various items.

Table 1 Success items

Financial	**Innovation**	**Market**	**Personal**	**Growth**
Profitability Ratios	Market	Share	Expectations	Sales
Liquidity Ratios	Products	Concentration	Self development	Product breadth
Activity Ratios	Technology		Personal wealth	Product depth
Growth Ratios				Employees
Leverage				Assets

Chapter 3

Entrepreneurial business knowledge

3.1 Literature review on entrepreneurial business knowledge

Despite popular legends about individual entrepreneurs, the creation and successful management of many new ventures is often a team effort shared among individuals representing a diversity of skills and experiences (Ensley, Pearson & Amason 2002:365).

Timmons (1994) argues that entrepreneurs who have built substantial companies are good entrepreneurs and good managers. Timmons (1994) continues by saying that these entrepreneurs had developed a solid base and a wide breadth of management skills and know-how over a number of years, working in different functional areas (e.g. sales, marketing, manufacturing, and finance).

Luk (1996) quotes the work of Steiner and Solem (1988) that investigated factors crucial for success of small manufacturing firms. They concluded that relevant factors significant to determining success were managerial background and experience, flexibility in operations, availability of labour, and possession of identifiable competitive advantages.

While trying to avoid generalisation, Timmons (1994) argues that entrepreneurs with technical backgrounds would probably be weak in marketing, finance and general management, and vice versa.

This view is supported by Greene, Brush and Hart (1999) who argue that there exists a potential for differences in types of experience and indeed find conflicting suggestions in their literature review.

In a study that compared independent and corporate entrepreneurs, independent entrepreneurs were found to possess greater levels of

technical/industry experience and lower levels of general management experience. Corporate entrepreneurs acquired the opposite, higher levels of general management and lower levels of technical experience.

This finding is supported by Shrader and Simon's (1997) recent conclusion that marketing expertise is emphasised as a desirable resource more in corporate ventures than in independent ventures.

Shrader and Simon's (1997) study is further strengthened by Luk's study (1996:71) as quoted by Nieman et al. (2003:18) that the second most important functional ability identified in successful entrepreneurs (Nieman et al. 2003:18), was good personal sales technique as part of their marketing management abilities. Other important factors included production and general management.

Luk's (1996) findings run concurrent with those of Burgelman (1988), who describes the product champion, often a technically oriented individual, as becoming the venture manager. Indeed, the lack of management coaching to champions moving into this role is cited as a problematic weakness (Greene et al. 1999).

Timmons (1994) emphasises the importance of having an entrepreneurial team whose skills are complementary and not the possession by an individual of a single, absolute set of skills.

This argument is further supported by, Baum, Locke and Smith (2001) who suggest that entrepreneurs should recognise that multiple dimensions affect success. Thus, through partnering or hiring, they supplement those dimensions they lack.

Entrepreneurs regularly find themselves in situations that tend to maximise the potential impact of various heuristics (Baron, 1998). Busenitz and Barney (1997) have argued that the level of uncertainty entrepreneurs face is substantially greater than that of managers of well-established organisations

who have access to historical trends, past performance, and other valuable information that can usually be readily obtained.

Entrepreneurs often have to make decisions with little or no historical trends, no previous levels of performance, and little if any specific market information surrounding whether new products or services will be accepted.

It has been noted that successful entrepreneurs (Nieman et al. 2003:17) are often successful after a number of attempts while unsuccessful entrepreneurs only try once, falter and don't make any attempt again.

Nevertheless, entrepreneurs can gain new insights from interpreting new combinations of information via unique heuristic-based logic. Simplifying heuristics may have a great deal of utility in enabling entrepreneurs to make decisions that exploit brief windows of opportunity (Tversky & Kahneman 1974; Stevenson & Gumpert 1985).

Timmons (1994) argues that entrepreneurs need a sound foundation in traditional management skills. Timmons (1994) identifies four functional areas and two cross-functional areas:

- Functional areas – Marketing , finance, production and operations, and microcomputers
- Cross functional areas – administration and law, and taxation

Dollinger (1999:11) argues that the "new" class of entrepreneurs are professional entrepreneurs that "understand what they are doing and are not just doing it". Wickham (2001) states that an entrepreneur is a manager undertaking particular tasks (e.g. sales, marketing, manufacturing etc).

Floyd and Woolridge (1999) proposed a pluralistic position towards the issue of knowledge creation. They defined entrepreneurial knowledge embracing both induction and deduction as methods of knowledge, and acknowledged both objective reality and subjective experience as sources of knowledge, recognising both explicit and implicit types of knowledge.

Education is central to this view, expressed as human capital theory. Human capital theorists surmise that education is an investment that yields higher wage compensation in return for an individual's variations of skills, training, and experience (Honig 1998). Education, management experience, and technical or industry experience are seen as rudimentary endowments of the new venture (Greene et al. 1999).

This line of thought was however questioned by the work of Luk (1996) that interestingly found that the importance placed on "education," "prior training," and "establishment of business connections prior to starting own business" in other studies had been exaggerated relative to the Hong Kong experience.

Baum, Locke and Smith (2001) argue that entrepreneurship education programs should teach organisation skills (including vision and goal setting), opportunity skills, and analytic skills enabling business environment analysis for formulation of strategies.

Entrepreneurial competency or the ''ability to enterprise'' (Gnyawali & Fogel 1994) refers to the sum of technical and business capabilities required to start and manage a business.

Entrepreneurial success depends largely on these skills — namely marketing, financial management/bookkeeping, operational, human resources, legal, communication, political and strategic planning, leadership and persuasive skills and the skills needed to set up a proper business plan (Vesper 1990; Boden & Nucci 2000;Van Vuuren & Nieman 1999;Le'vesque,Shepherd & Douglas 2002).

Without this ability to enterprise, entrepreneurs may not be able to seize the opportunities available to them and successfully go through start-up activities or manage on-going business (Erikson 2001).

Research by various authors (Baumol 1990; Holmes & Schmitz 1990; Gifford 1993), as quoted by Le'vesque et al, (2002) found that the need for such an abundance of required skills is not at all surprising since self-employment requires considerable and diverse abilities relative to those required to be employed. It was also found that individuals who choose to be self-employed tended to have higher skill levels.

Sources of entrepreneurial knowledge are described by Vesper (1990) to come from three likely sources: previous work experience, advice from experts, imitation and copying.

Therefore entrepreneurial competencies, necessary for the creation of a new firm, are based on three building blocks (Man et al.1999, Aldrich & Martinez 2001) — namely the entrepreneur's:

- education
- training and
- experience.

The two constructs (business knowledge and work experience) under review were analysed against the background of the three building blocks, mentioned above.

3.2 Entrepreneur's education

Much activity and research in the field of entrepreneurship is related to individual educational characteristics, small medium enterprise programs, research and development communities, incubation parks, and the like (Bennett & Robson 1999; Wood 1994; Honig 1998).

In the work of Honig (2001) various researchers (Schultz 1959; Becker 1964; Mincer 1974) found that education forms part of human capital and according to human capital theorists, education is said to improve productivity.

Researchers (Dore 1976; Spence 1974; Becker 1964) in Honing's (2001) work typically operationalised human capital by examining years of formal education, years of work experience, or years of work experience in a particular trade, profession, or skill, to examine the relationship between cognitive skills and economic rates of return.

From the above quoted research it was generally concluded that education was advantageous in giving the entrepreneur an edge in achieving firm growth (Cooper & Gason 1992). This would lead one to expect education to be positively related to firm growth and success (Lau & Busenitz 2001).

Studies analysing the characteristics of the firm's founder, notably years of schooling and work experience, were found to be important determinants in the success of a firm (Brüdel, Preisendörfer & Ziegler 1992).

There was however a general belief that human resources have little to do with success and failure. A study was conducted by Lussier and Pfeifer (2000) comparing business success versus failure variables between the United States of America and Central Eastern Europe Croatian entrepreneurs.

The study used Lussier's (1995), success versus failure (S/F) prediction model. Four variables from the full (15) model were significant predictors of success or failure in the American and Central Eastern Europe Croatian entrepreneurs. The model tested was, S/F = f (planning, professional advisors, education, staffing).

The model variables (education, staffing, professional advice, planning) had to do with human resources. Education appeared in about half as many studies that supported the variable as a contributing factor to success versus failure.

It must be noted that various other studies did not mention education as a contributing factor (Lussier 1995).

Others have also found mixed results with the education variable in relation to firm success. Two studies found a positive association between higher education and success and two studies found no such relationship (Schefczyk & Gerpott 2000).

Studies analysed by McMullan, Chrisman & Vesper (2001) found various results showing a positive relationship between entrepreneurial education and business start-ups.

A study of 452 students in a course at Wichita State University (Clark, Davis, & Harnish 1984) found a relationship between entrepreneurship education and entrepreneurial activity. Another study of 147 program participants (Mescon 1987) reported that 34% of the graduates started a business after taking an entrepreneurship course. A study by Elstrott (1987) of the Louisiana Small Business Development Corporation program found high rates of growth in sales, employment, and profits among clients.

Charney & Libecap (2000) found that entrepreneurship graduates were 11% more likely to own their own business than other business school graduates after controlling for personal characteristics and various environmental factors. The 2003 global entrepreneurship monitor report (Reynolds et al, 2004:46) indicated that the personal situation of an entrepreneur such as the level of education had an important impact on the existing firm entrepreneurship than participation in start-ups. Entrepreneurs with less education where more likely to pursue necessity entrepreneurship, while those with a higher education pursued opportunity entrepreneurship.

There seems to be some tentative evidence that education contributes to the entrepreneur's business knowledge base.

3.3 Entrepreneur's training

A key role in the entrepreneurial process is the process of accumulating knowledge based on practical experience and observation. Entrepreneurial

training seems to have two sources ⸺ internal and external. It was found that the ability, interest and ultimately the decision to become self employed was a long-term process, in which institutional environments, such as training systems or organisational features structured the path to self-employment (Strohmeyer 2001).

Apprenticeship was found to be a path that most successful entrepreneurs followed, in order to gain the relevant business experiences from parents who were self employed or through work experience (Timmons 1994: 24-25). This learning- by-doing approach allowed the entrepreneur to gain a deeper, applied appreciation of the proposed venture. As a result, the entrepreneur could develop tacit knowledge through this process (Chrisman & McMullan 2000).

Research (Ladzani & Van Vuuren 2002) found that in a rapidly changing environment entrepreneur's training was necessary in helping owner/managers learn how to approach certain problems.

Other researchers have found that sustaining competence required continuous learning, and the use of this knowledge was needed to develop new competencies or improve existing ones (Zahra, Nielsen & Bogner 1999).

In a study conducted by Chrisman and McMullan (2000), the survival rate of businesses counselled by the United States Small Business Development Corporation (US SBDC) was substantially higher (and the closure rate lower) than one would expect to find in general. Bankruptcies among US SBDC clients were found to be an infrequent occurrence.

The US SBDC's pre-venture clients started businesses that often performed at levels higher than the average new venture. They had high employment, sales, and rates of growth in the first few years of their existence.

It was argued that US SBDC clients might have developed a sustainable competitive advantage that allowed them to survive and grow at higher rates

than one would expect in the general population of start-ups in the United States of America. The US SBDC assistance was viewed in largely positive terms, referring to the US SBDC's contribution as being significant.

It would appear (Chrisman 1997) that outsiders have the potential to help entrepreneurs access valuable, rare knowledge resources that were difficult to imitate, and that these resources could have an important and positive impact on business start-up decisions and on the venture's initial performance.

Furthermore, the rates of survival, growth, and innovation of US SBDC counselled clients seemed to be higher than what one would find in the general population of business start-ups.

Outsider assistance programs that enabled entrepreneurs to gain tacit and explicit knowledge appeared to be a source for the development of sustainable competitive advantages among new ventures.

The results from the study (Chrisman & McMullan 2000) further reinforced that the knowledge resources gained through the counselling process, provided a timely intervention in the early stages of business start-up. This led to a difference in the performance of those ventures.

Research has indicated that all entrepreneurs, no matter how experienced, have weaknesses that a knowledgeable advisor could help address. It was found that many nascent entrepreneurs drew upon previous work experience and advice from experts (Katz, Aldrich, Welbourne & Williams 2000) while entering into business ownership.

It was shown that good advisors could act as sounding boards for new ideas, providing valuable contacts, and adding complementary knowledge needed for an effective launch, and importantly, for a venture's ability to survive (Chrisman & McMullan 2000).

Evidence suggests that business knowledge could be acquired through the three building blocks described earlier, probably enhancing the entrepreneur's success.

The following table summarises the business knowledge variable based on the literature, broken down into its various items.

Table 2 Business knowledge items

Education	Network Experience	Role Models	Functional Knowledge
Primary	Depth (Vertical)	Cultural	Financial
Secondary	Breadth (Horizontal)	Business	Marketing
Tertiary			Human Resources
Post Graduate			Information Technology
			Operations
			Legal

Chapter 4

Entrepreneurial work experience

4.1 Literature review on entrepreneurial work experience

Past research on the effects of expertise suggests that individuals often acquire important advantages as they gain increasing experience in performing various tasks (Shepherd, Zacharakis & Baron 2003). They become more efficient by learning to focus attention primarily on the key dimensions and learn to ignore extraneous variables.

Technical and industry-specific competencies should receive more research attention in entrepreneurship settings because the domain they reflect — specific competencies — had highly significant direct effects on venture growth. An entrepreneur's technical and industry competencies are an important form of expert power that facilitates the implementation of the entrepreneur's vision and strategy. Industry-specific skill and relevant technical skill directly affect performance, and these entrepreneurial skills may serve as sources of competitive advantage that rivals find difficult to identify and imitate (Baum et al. 2001).

The Mincer human capital equation (Mincer, 1974) includes an assumption that the skills and income attributed to experience in the labour force have diminishing returns, thus requiring a non-linear independent variable expressed with a Mincer type earnings function (experience squared) (Honig 1998: 375). Most models rely on age less schooling for a proxy of experience. This research will use the exact number of years of experience in the same occupation for which the entrepreneurs were engaged.

Wiklund (1999) argues that adaptation is also facilitated by experience, and experience is not a characteristic of new firms. A lack of experience reduces investors' confidence in a firm's ability to successfully adapt. Inexperience is compounded by many start-ups' lack of preparedness to effectively manage

growth-related transitions, as well as by start-ups' past levels of success regarding information gathering and fundraising efforts.

While Chandler and Hanks (1994) argue that managerial and entrepreneurial competencies can explain how opportunities and organisational resources are transformed into successful venture performance, such competencies are best culled via experience.

Experience includes (Wiklund 1999) having already dealt with start-up problems such as generating sales, developing marketing avenues and tactics, obtaining external financing, and dealing with internal financial and general management issues.

Start-up firms' lower survival rates are attributed to their inexperience and resource constraints. Both experience and resources (Tegarden et al. 2000) play crucial roles in firms' abilities to adapt in an emerging market before an industry standard is in place.

Entrepreneurs with limited experience may use simplified decision models to guide their search, while the opposite may be the case with experienced entrepreneurs (Gaglio 1997).

The major factors (Ardichvili et al. 2003: 106) that influence this core process of opportunity recognition and development, leading to business formation include:

- entrepreneurial alertness;
- information asymmetry and prior knowledge;
- social networks;
- personality traits, including optimism and self-efficacy, and creativity; and
- type of opportunity.

Prior knowledge and experience (Ardichvili et al. 2003: 107) have been quoted by researchers as necessary for successful opportunity recognition.

However, experience may not strictly enhance opportunity recognition ability. Habitual entrepreneurs associated with liabilities (e.g. over-confidence, subject to blind spots, illusion of control, etc.) resulting from their prior business ownership experience, may also exhibit limited and narrow information search behaviour. Novice entrepreneurs were found to seek more information than entrepreneurs with more entrepreneurial experience, but they searched less in unfamiliar surroundings. Further, entrepreneurs having high levels of confidence sought less information (Ucbasaran et al. 2001).

Some experienced entrepreneurs may simply have had a fortuitous prior business ownership experience and may subsequently have little idea about identifying additional profitable projects. Over time, however, habitual entrepreneurs are likely to acquire information and contacts that provide them with a flow of information relating to opportunities. Consequently, habitual entrepreneurs may need to be less proactive compared with novice entrepreneurs. Previously successful entrepreneurs may receive proposals from financiers, advisers, other entrepreneurs, and business contacts (Ucbasaran et al. 2001).

However, (Shepherd, Zacharakis & Baron 2003) past research in the area of judgment/decision-making suggests that increasing experience does not always lead to better decisions. For instance, experienced decision-makers appear to rely on various heuristics and other forms of mental shortcuts to the same extent as those lacking experience and this can lead them into equally serious errors.

They are more likely to suffer from overconfidence and "overfitting" the world by drawing conclusions based on small samples of experience and overgeneralising from them and they may be less likely to engage in counterfactual thinking (contemplating "what might have been"), thus failing to attain important insights into how performance in various situations could be improved in the future.

Thus, experienced decision-makers may become increasingly trapped in current modes of thought and may fail to develop better decision-making policies that can improve future performance.

How can these two seemingly contradictory literatures be reconciled? It was proposed that the answer may involve a curvilinear relationship between experience with the venture capital task and the accuracy or efficiency of their decision processes. It was found that as decision-makers' experience increased, intra-judgement reliability at first increased but then decreased (Shepherd, Zacharakis & Baron 2003).

In Shepherd, Zacharakis & Baron's (2003) work, an optimal level of experience was found to be approximately 14 years of experience. It was found that beyond this optimal point, highly experienced decision-makers, began to rely on automatic information processing to such an extent that they became increasingly susceptible to various sources of cognitive error.

Instead of evaluating all of the pieces of information surrounding the proposed venture, experienced decision-makers may focus on those characteristics that match past successes or failures. They may show increased susceptibility to an availability bias.

Baum, Locke and Smith (2001) speculate that the entrepreneur's industry and technical skills and high motivation, influence his or her venture's growth through the establishment of growth oriented organisational processes and structures that facilitate the implementation of business strategy.

Technical education and experience is linked to the development of the product or service and some understanding of this technology may be necessary for the implementation of a separate business entity.

On the other hand, the organisation of resources is one of the key tasks of management and by any definition, the entrepreneurial venture requires resources to proceed (Stevenson, Roberts & Grousbeck 1989). Also, the

contextual differences between the two do have an impact on human capital (Greene et al. 1999).

The knowledge and capabilities achieved are based upon experience in that organisation. Therefore, in some ways the venture process may have similar attributes to on-the-job venture training.

Success hurdles and boundaries also may interact with human capital differently for the corporate entrepreneur and the individual entrepreneur. For instance, creativity and values, combining with the corporate entrepreneur's education and experience, may result in success hurdles that are more centred on individual fulfilment or technological achievement than corporate ROI (Return on Investments).

Boundaries for both the corporate entrepreneur and the individual entrepreneur will have various degrees of rigidity and porosity, but for the corporate entrepreneur are predetermined by the relationship with the parent. One dimension of corporate boundaries is the effect on the experiential exposures of the corporate entrepreneur, either limiting or stretching exposure opportunities. The emerging nature of the independent venture's boundaries provides increased flexibility for the accumulation and application of human capital, but the converse is also true: there is a lack of structure for guidance and speed (Greene et al. 1999).

The process by which skills are gained through corporate entrepreneurship activities and used to develop organisational competencies has two distinct, but related, learning activities (Bogner, Thomas & McGee 1998).

The first is development of organisational knowledge through the learning that occurs within the company. This learning and the knowledge it generates can occur within specific technologies (or functions or tasks) or by integrating these technologies into an innovative, functioning system (e.g. a new product).

The skill of integrating this knowledge by making it useful throughout the organisation can in itself become a new competence (Hamel & Prahalad 1994), leading to improved organisational performance, in the same way an entrepreneur might learn from his prior employer, and use this information for his own venture.

This infusion of new ideas can challenge prevailing assumptions and cognitive maps in an organisation, revise organisational memory, and extend its existing knowledge bases. This learning can cause a company to re-examine and redefine its mission, competencies, and competitive weapons, which often leads to new knowledge (Zahra, Nielsen & Bogner 1999).

A second process, (Zahra et al. 1999) augments a firm's knowledge base by transferring, and later exploiting, new knowledge in the marketplace. This conversion process consists of transferring knowledge from one part of the company to another and then bundling this knowledge into the firm's new product.

4.2 Network experience

Timmons (1994) goes on to say that successful entrepreneurs not only posses a creative and innovative flair but also have solid general management skills, business know-how, and sufficient contacts.

Observations of different cultures and different regions in several countries show that entrepreneurial activity tends to concentrate geographically, even across industrial sectors.

In addition, evidence across geographical areas suggests that different levels of entrepreneurship may develop from very similar economic and institutional environments.

Bygrave and Minniti (2000) suggest that such a phenomenon stems, at least in part, from the self-reinforcing nature of entrepreneurship. Indeed, if

entrepreneurship exhibits a network externality, then it can be shown that cultural traits, in the form of role models and enduring community characteristics, influence new individuals entering the economy and push them toward choosing entrepreneurship rather than other income-producing activities independently of their ex-ante preferences and constraints.

Chetty and Campbell-Hunt (2003) use Johanson and Mattson's (1988) definition of business networks, which they consider as the long-term business relationships that a firm has with its customers, distributors, suppliers, competitors and government — the actors in a business network.

They regard a business relationship to be a relationship between firms that jointly conduct business, and which is of mutual benefit to those involved in it. Indeed, a large amount of internationalisation activity is associated with networking, because it involves building relationships with foreign intermediaries, customers, alliance partners, suppliers, and government officials. These relationships need to be developed and maintained (Welch and Welch 1996).

Low and MacMillan (1988) suggested that networks are an important aspect of the context and process of entrepreneurship. Subsequent studies have found that networking allows entrepreneurs to enlarge their knowledge of opportunities, to gain access to critical resources, and to deal with business obstacles (Floyd & Wooldridge 1999).

Businesses owned by teams of partners generally have wider social and business networks and more diversified skill and competence bases to draw upon (Slevin & Covin 1992).

The creation of formal networks in the form of an innovative milieu can provide a context for entrepreneurs and their firms to acquire knowledge and experience. However, it is not clear how effective these sponsored networks are in equipping entrepreneurs and firms with the ability to select effective

strategies to secure scarce resources outside a sponsored environment (Ucbasaran et al. 2001).

Social capital is crucial to entrepreneurs, encompassing both actual and potential resources flowing through a relationship network established individually or collectively, as well as consciously or unconsciously. Relationships may evolve from the entrepreneur's family of origin or a personally developed network (Greene & Brown 1997).

Social capital is an instrumental resource and investment made in order to acquire other types of resources, or even additional social capital. One outcome of these networks is the development of trust, which promotes the exchange of resources (Greene et al. 1999).

These behaviours are similar for independent entrepreneurs, who also depend on informal networks and contacts to gain information, assistance, and start-up capital (Aldrich & Zimmer 1986). The networks provide for the deployment of social assets when needed and also provide for recruitment and socialisation of new members (Van de Ven 1988). In addition, components of the network, such as size, strength of the ties within the network, and time devoted to these relationships, are posited to affect initial profits (Greene et al. 1999).
An independent entrepreneur must draw from and build new relationships and networks on the basis of previous organisational roles and positions (Greene et al. 1999).

Chetty and Campbell-Hunt (2003) name various researchers (Coviello and McAuley 1999; Lu and Beamish 2001) that small to medium-sized firms that collaborate through business networks, accelerate their internationalisation process and achieve success beyond what they could achieve alone.

Collaboration was found to be particularly important in a small, open, isolated economy, such as New Zealand, where the average firm is small compared to its international counterparts. Firms that find themselves in a small domestic

market have less chance of achieving economies of scale in research and development, manufacturing or marketing.

When entering new markets their distributors were a vital resource in helping them to overcome the challenges of the liability of foreignness (Lu & Beamish 2001; Hymer 1976), as they were an important source of knowledge about these markets. Using distributors also has a downside, as illustrated in the case discussion. Some of the challenges are: finding the right partner, goal conflicts, becoming competitors, neglecting products and being locked out of distributor networks

Market transactions often take place within the context of long-term relationships between business partners. The firms conduct business together because they become committed to continuing and deepening the business relationship (Chetty & Campbell-Hunt 2003).

Firms acquire knowledge through their networks such as suppliers, customers and distributors, by becoming committed to these relationships and by exchanging information. Since a firm's main channel for learning about its network is through its partners, it has to interact with them to gain this knowledge.

In Chetty and Campbell-Hunt's (2003) work the researchers mention that identifying one of the greatest perceived barriers to internationalisation is a lack of business networks. This view is supported by Gray (1994).

Further benefits are found in business networks (Chetty & Campbell-Hunt 2003) in that they enable small- to medium- sized firms to proceed faster with their international growth, as opposed to a gradual step-by-step process.

Firms accelerated their internationalisation process and managed their problems of success by forming business relationships to gain access to distribution networks, technology, market knowledge and information.

4.3 Role models

Mentoring is often promoted as vital for management development in general and for innovation development in particular. One specific variation on the mentoring process is the concept of `champions' or `change masters' (Kanter & Richardson 1991; Day 1994; Shane 1994). The existence of a `champion' — someone who will fight for a new venture — sends a clear signal that the organisation at least tolerates entrepreneurial activity.

That signal alone should increase perceptions of supportive social norms. However, mentors and roles affect entrepreneurial intentions only insofar as they first affect key attitudes such as self-efficacy.

4.4 Entrepreneur's experience

In the study done by Gartner, Starr & Bhat, (1998), it was found that, the strongest companies were led by people with experience in their industries and that if you did not have experience, you would need to buy it. Experience played an important role in an entrepreneurs ability to recognise a business opportunity quickly (Timmons 1994: 42).

Various researchers (Cooper, Gascon & Woo 1994; Roure & Maidique 1986) were quoted by Shepard, Douglas & Shanley (2000) to have found work experience to be a significant determinant of venture survival. It was also found that an entrepreneur might be expected to have some expertise in the production of his or her business's output.

In another study it was found that one of the most important determinants of success was the sufficient, relevant experience gained before starting one's own business (Nieman et al. 2003: 19).

Nieman et al, (2003: 19) quotes Luk (1996: 70) who discovered a significant number of successful entrepreneurs had worked for a few years in the same

industry in which they started their businesses. Thus an entrepreneur venturing into an opportunity that fits his or her experience and skills make-up will have greater prosperity (Nieman et al. 2003: 55).

The entrepreneur's experience was found to provide a unique knowledge and reputation asset to the firm. Experience based knowledge, explicit and tacit, was linked to improved skills in the resource specification, identification of appropriate resource providers and development of selection criteria. Industry experience that established an entrepreneur's reputation contributed to success in attracting resources partners and in achieving favourable terms of co-operation (Hart, Stevenson & Dial 1995).

It was found that experienced entrepreneurs (Hart et al. 1995) located resource suppliers quickly, based on long-term observation and evaluations, the search and qualification already learnt from previous experience.
These factors had advantages for entrepreneurs embarking on an entrepreneurial process within their experience related fields.

Based on research, entrepreneurs who had previous work experience in the same field that they pursued entrepreneurially were found to have the following advantages, that other entrepreneurs with little work experience still had to overcome (Stinchcombe 1965):

- The high cost of creating relationships and operating routines in new organisations.
- The time and investment required to establish external relationships conditioned on reputation, experience, trust and competition and, often with very limited resources, with mature organisations that already had goods or services in the market place and that enjoyed established customer relationships.

Industry knowledge, sometimes called intellectual capital, was an important asset that experienced entrepreneurs used in specifying financial and physical resources more precisely and in greater depth, engaging resource providers

and selecting resource partners. This knowledge helped specify the financial and physical resource requirements. Experienced entrepreneurs were also able to envision and access invisible assets (Hart et al. 1995) needed for the venture.

Further, being known was as important as knowing, thus enabling the experienced entrepreneur was able to attract and assemble resources efficiently and reduce the search and settlement costs.

It was found that resource partners evaluated business opportunities on the founder's capabilities and experience (entrepreneur's competence), as two important variables. This resulted in the perceived risk being lowered and the risk premium for participation, adjusted downward.

Experience and know-how of the entrepreneur led to a relaxation of demands for highly specified agreements, allowing the firm the flexibility needed and maintaining a wide range of options from which to select alternatives as they grew and changed.

The research concluded that, an entrepreneur's unique experience resource created a distinctive advantage that could enhance organisational performance in the early stages (Hart et al. 1995).

Other researchers found that, the need for industry specific competencies and industry know-how (Shepard, Douglas & Shanley 2000), was necessary but not a sufficient requirement for success. Individuals were assumed (Jovanovic 1980) to have no knowledge of their managerial ability prior to embarking on business ownership. It was argued (Boden & Nucci 2000) that managerial experience acquired in the wage sector would tend to enhance workers' latent managerial ability as well as their knowledge of their managerial competence, prior to embarking on business ownership.

The relevance of human capital (Boden & Nucci 2000) to entrepreneurial success was greater for workers with more years of paid employment

experience and/or some prior managerial experience. Survival of businesses owned by individuals with greater amounts of work experience and/or prior managerial experience tended to be higher (Boden & Nucci 2000).

The three most important sources (Wood & Bandura 1989: 364) of perceived competence among individuals were mastery experience, vicarious experience, and social persuasion. The most effective way for individuals to develop a strong sense of competence was through mastery experience.

This argument was supported by other researchers (Cooper & Gascon 1992; Starr & Bygrave 1992; Starr, Bygrave & Tercanli 1993; Stuart & Abetti 1990) based on the benefits and liabilities of entrepreneurial experience as quoted by Gartner et al. (2001).

The entrepreneur's ability often increased with age. Age provided an opportunity to gain more knowledge through experience, which often translated to expertise (Schwartz & Griffin 1986). The learning-by-doing perspective on human capital accumulation proposes that an individual learned how to work and how to learn (abilities) through engaging in market activities.

The amount learned (increase in abilities) was assumed to be directly related to the amount of time spent in these activities and to the individual's accumulated experience (Le'vesque et al. 2002).

This learning often depended on the particular industry environment and it was reported that it was vital to supplement general qualifications with industry-specific experience as well as functional education (Schefczyk & Gerpott 2000). In this research (Schefczyk & Gerpott 2000), qualifications were operationalised by experience and educational variables.

It is important to note that research found that many innovator organisations, started by entrepreneurs whose routines and competencies varied significantly from those of existing organisations (Picot, Laub & Schneider 1989), did not survive, as their departures from existing routines and competencies were

unworkable. Reproducer organisations were defined as organisations whose routines and competencies varied imperceptibly from those of existing organisations, and organised their activities in much the same way as their predecessors.

In fact, most entrepreneurs, either by choice or because of the strength of selection mechanisms, simply reproduced the structures, competencies, and routines of pre-existing organisations (Aldrich & Martinez 2001).

From the above literature it would be reasonable to draw a tentative conclusion that a positive relationship exists between work experience contributing to entrepreneurial success.

We therefore limit this study to education, management experience, and technical or industry experience, seen as rudimentary endowments of the new venture (Greene et al. 1999).

The following table summarises the work experience variable based on the literature, broken down into their various items.

Table 3 Work experience items

Functional experience	**Management experience**	**Industry experience**
Product development	Marketing	Supplier chains
(Technical know-how)	Financial	Customer networks
	Human resources	Competition knowledge
	Operations	Market experience
	Legal	

Chapter 5

Research methodology

5.1 Research introduction

This research was conducted as a formal study, and followed a cross sectional, ex post facto statistical design. The data collection method was achieved through interrogation in a field setting following a restrictive element selection criterion.

The population was composed of the membership database of the JCCI (Johannesburg Chamber of Commerce & Industry). A compact disk with the total membership database was obtained, and the necessary access codes received, allowing access to the total population with their respective contact details.

An in-depth structured self-administered questionnaire (which attempted to extract data necessary to provide a descriptive relation of the two independent variables present in successful entrepreneurial ventures) was e-mailed and hand delivered to the identified sample, randomly selected from the population.

Parameters of interest where elements that had more than three years of entrepreneurial success in their firm, met the conditions of entrepreneur as defined earlier in this paper and firms that met the size criteria as discussed earlier. This ensured respondents uniquely qualified to provide the desired information.

5.2 Instrument design

Existing measuring instruments were combined and expanded or reduced as required for this study. New original measures were also introduced. Besides the biographic measures, the instrument would have to measure for:

- Entrepreneurial success

- Business knowledge and
- Work experience

Some of the existing measuring instruments are:

- Miller's original scale (Miller & Friesen 1982) consisting of various items used to measure entrepreneurial orientation. The Cronbach's Alpha value of the scale is 0.64.
- The Entrepreneurial Intensity (EI) scale (Gundry & Welsch 2001)
- The Entrepreneurial Profile Questionnaire (EPQ) (Gundry & Welsch 2001) and
- Honing's (1998) survey instrument which scored an extremely high incidence (95%) of instrument reliability. The Cronbach Alpha's value of the scale was 0.73 in 1997 and in 1998 somewhat higher, at 0.75.

Variables of interest where assessed via a written, confidential instrument employed to measure various items per study construct.

The primary objective of any measuring instrument will be the elimination of measurement errors, the problems associated with the reliability or validity of the procedures used to measure the variables (Grimm & Yarnold 1995).

Three criteria (Cooper & Schindler 2001: 210) are used to evaluate a measurement tool:

- Validity
- Reliability and
- Practicality

Validity, is a characteristic of measurement. Validity refers to the establishment of evidence that the measurement is actually measuring the intended construct. The question that must be answered is, does the test measure what the researcher actually wishes to measure?.

Differences found with the measurement tool, must reflect true differences among respondents drawn from a population.

Validity-construct relates to the degree to which a research instrument is able to measure or infer the presence of an abstract property.

Measures can be reliable without being valid, but cannot be valid without being reliable. There are several approaches for establishing construct validity. These include (1) content validity, (2) the substantive component of construct validity, (3) the structural component of construct validity, and (4) external validity (Chandler & Lyon 2001).

Reliability is a characteristic of measurement (Cooper & Schindler 2001) concerned with accuracy, precision, and consistency: a necessary but not sufficient condition for validity (if the measure is not reliable, it cannot be valid). Reliability refers to the consistency and stability of a score from a measurement scale.

There are several approaches for establishing reliability. These include:
- reliability-equivalence,
- reliability-internal consistency and
- reliability-stability

Reliability-equivalence a characteristic of measurement in which an instrument can secure consistent results with repeated measures by the same investigator or by different samples. Parallel forms will be employed and results correlated, and if a high correlation exists then equivalence will have been demonstrated by the instrument (Cooper & Schindler 2001).

Reliability-internal consistency is a characteristic of measurement in which an instrument measures consistency among responses of a single respondent. Cronbach's alpha and split-half methods will be used to ascertain if the measuring instrument has internal consistency.

Reliability-stability ensures consistent results with repeated measurements of the same person with the same instrument. Test-retest will be employed and results will be correlated. If a high correlation exists then the instrument will have demonstrated stability.

Three specific ways (Chandler & Lyon 2001) that reliability of measurement can be established:

- using multiple item measures and establishing the internal consistency of the measures

- using multiple respondents and establishing inter-rater or inter-respondent consistency and

- using archival data from audited or otherwise reliable sources.

Practicality is a characteristic of sound measurement concerned with a wide range of factors of economy (cost), convenience (easy to administer), and interpretability (Cooper & Schindler 2001).

Principal component factor analysis (Grimm & Yarnold 1995: 107), is the most common type of exploratory factor analysis method used to test validity.

In order to determine whether the items on the questionnaire assessed distinct aspects of entrepreneurial success, business knowledge and work experience, a principal component factor analysis with varimax rotation will have to be performed on the total sample.

Parallel analysis would then have to be applied to determine the appropriate number of factors to retain. Parallel analysis generates an artificial data set with the same number of observations, variables, means, and standard deviations as the variables in the actual data set.

The artificial data set is then factor analysed, and eigenvalues recorded for each factor extracted.

This procedure will be repeated, and an average eigenvalue for each of the factors (across replications) will be calculated. These values are then plotted as in a scree plot, and compared with eigenvalues for the factors extracted from the actual data set.

Factors are retained if the eigenvalues for the actual data set exceed those from the artificial data set (Baron & Markman 2003). The two sets of ratings agreed closely, thus providing evidence for the validity of this measure.

The questionnaire (Annexure 1) had closed structured questions (administrative, classification and target questions), covering the following:

- Items concerning personal background, age, sex, etc (biographic)
- Items that measure the entrepreneur's success
- Items that measure the entrepreneur's business knowledge
- Items that measure the entrepreneur's technical skills and industry experience in the relevant field.

Response strategies included multiple choice, fixed sum scales and rating using a five point Likert Scale.

On retrieving the questionnaires, elements were selected based on the screening or control variable criteria (firm size, entrepreneur definition, etc).

The measuring instrument was pre-tested for content, criteria, and construct validity. Instrument reliability and stability was also pre-tested.

Special attention was paid to question content, wording and response strategy. Pre-testing allowed for the identification and removal of problems. Questions used by other authors, whose works had operationalised business knowledge, work experience and entrepreneurial success, were scanned and used.

5.3 Data collection

5.3.1 Literature review methodology

The literature review data and information for this paper was sourced using a literature search. Databases were selected according to their level of appropriateness to the topics under review. Secondary sources were located and reviewed. The value of each source and its content were evaluated in terms of purpose, scope, authority and format. These secondary and tertiary sources from the databases were then reviewed.

The following two electronic journal databases and platforms were extensively used:
- ABI/Inform database and
- General Business File International Infotrac

Boolean logic was used for the three variables – using keyword search queries. The primary keywords were entrepreneurial success, entrepreneurial competencies, entrepreneurial experience and entrepreneurial business knowledge/work experience.

The following predominant professional journals were reviewed:
- Ivey Business Journal
- Journal of Business Venturing
- Journal of Small Business Management and
- Entrepreneurship Theory and Practice

An assumption was made that articles extracted from the above sources had been validated by peer review. These reviews would cover all the critical research methodology techniques such as:
- Sampling design
- Measurement instruments (Content, criterion related and construct validity)
- Measurement scales and response strategies (Instrument validity and reliability) etc

5.3.2 Survey data collection and analysis techniques

Data received from the questionnaires was coded according to a pre-determined coding scheme and used for the hypothesis testing. With the collection of a sample and not a census, hypothesis testing must be done (Cooper & Schindler 2001: 486).

Chandler and Lyon's study on entrepreneurship research (2001) identified various statistical procedures, many of which will be used in this study. Initially various descriptive statistics will be used such as: measure of location, spread and shape etc.

Hypotheses follow a one tail test or directional test, and hypothesis tests used will attempt to prevent a Type 1 error, where a true null hypothesis is rejected (Cooper & Schindler 2001: 489).

Hypothesis testing will be performed using the prescribed methods, per data types. Hypothesis will be tested using the parametric t-test at a significance level of (α) 0.05, the most frequently used level (Cooper & Schindler 2001: 520). This translates to 95% probability of a correct decision taken, if the null hypothesis is true. However tests that showed a significance level of 0.10, translating into 90% probability of a correct decision taken, will also be reported.

5.4 Brief outline of statistical tests employed

On the basis of raw observed frequencies (or percentages) of a sample's behaviour or characteristics, one can make claims about the sample itself, but one cannot generalise to make claims about the population from which the sample was drawn unless results are submitted to a test of statistical significance.
A test of statistical significance indicates how confidently one can generalise to a larger (unmeasured) population from a (measured) sample of that population.

Various statistical tests were employed in the analysis between the dependant variable, entrepreneur's success, and the two independent variables, business knowledge and work experience.

Nonparametric (Cooper & Schindler 2001: 554) measures of association were employed, using cross-classification tables, to assess the strength of the relationships between the test variables.

Various chi-square-based measures were used to detect the strength of the relationship between the test variables, the tests included the chi-square test, phi, Cramer's *V,* and contingency coefficient *C .*

BMDP Statistical software (BMDP3D – T-TESTS) was used in performing the multivariate statistical tests.

5.4.1 Chi-square

Chi-square test is a non-parametric test of significance (Cooper & Schindler 2001: 554) used for nominal measurements used in bivariate tabular analysis (also known as crossbreaks). Any appropriately performed test of statistical significance indicates the degree of confidence one can have in accepting or rejecting a hypothesis.

Typically, the hypothesis tested with chi square is whether or not two different samples are different enough in some characteristic or aspect of their behaviour to allow for the generalisation that the population from which the sample is drawn is also different in behaviour or characteristic.

 A non-parametric test, like chi-square, is a rough estimate of confidence; it accepts weaker, less accurate data as input than parametric tests (like t-tests and analysis of variance, for example) and therefore has less status in the pantheon of statistical tests.

Nonetheless, its limitations are also its strengths, because chi-square is more 'forgiving' in the data it will accept, and it can be used in a wide variety of research contexts.

Chi square is used most frequently to test the statistical significance of results reported in bivariate tables. Interpreting bivariate tables is integral to interpreting the results of a chi-square test.

Bivariate tabular analysis is good for asking the following kinds of questions:

- Is there a relationship between any two variables in the data?
- How strong is the relationship in the data?
- What is the direction and shape of the relationship in the data?
- Is the relationship due to some intervening variable(s) in the data?

Bivariate tables are typically constructed using the values of the independent variable arrayed on the vertical axis, while values on the dependent variable are arrayed on the horizontal axis. This allows for reading 'across' from hypothetically 'causal' values on the independent variable to their 'effects', or values on the dependent variable.

These tables are structurally most suitable for analysing relationships between nominal and ordinal variables.

The chi square test of statistical significance is a series of mathematical formulae that compare the actual observed frequencies of some phenomenon (in our sample) with the frequencies we would expect if there were no relationship at all between the two variables in the larger (sampled) population.

Chi-square works within the frequencies provided by the sample and does not inflate (or minimise) the column and row totals.
But chi-square, while forgiving, does have some requirements:

- The sample must be randomly drawn from the population.
- Data must be reported in raw frequencies (not percentages);

- Measured variables must be independent;
- Values/categories on independent and dependent variables must be mutually exclusive and exhaustive; and
- Observed frequencies cannot be too small.

In this study collapsing values/categories on the – dependant variable – entrepreneur success variable were employed into two categories — successful and less successful.

This was necessary to enable easier analysis, and was done without excluding any subset of data. Every effort was made to preserve the integrity of the data as it was originally collected.

As a rule, one should perform a chi-square on the data in its uncollapsed form, and if the chi-square value achieved is significant, then one may collapse categories to test subsequent refinements of the original hypothesis.

While the issue of theoretical or practical importance of a statistically significant result cannot be quantified, the relative magnitude of a statistically significant relationship can be measured.

Chi-square allows for decisions about whether there is a relationship between two or more variables; if the null hypothesis is rejected, one concludes that there is a statistically significant relationship between the variables.

But a measure of the strength of that relationship is frequently required — an index of degree of correlation, a measure of the degree of association between the variables.

Several related measures of association can be derived from a table's chi square value. In a statistics book, the sampling distribution of chi-square (also know as 'critical values of chi square') is typically listed in an appendix. The user reads down the column representing the previously chosen probability of error

threshold (e.g., p < .05) and across the row representing the degrees of freedom in the table. If the chi square value is larger than the critical value in that cell, the data presents a statistically significant relationship between the variables in the table.

Statistical significance does not help to interpret the nature or explanation of that relationship — that must be done by other means (including bivariate tabular analysis and qualitative analysis of the data).

But a statistically significant chi square value does denote the degree of confidence one may hold that the relationship between variables described in the results is systematic in the larger population and not attributable to random error.

Statistical significance also does not ensure substantive significance. A large enough sample may demonstrate a statistically significant relationship between two variables, but that relationship may be a trivially weak one. Statistical significance means only that the pattern of distribution and relationship between variables which is found in the data from a sample can be confidently generalised to the larger population from which the sample was randomly drawn. By itself, it does not ensure that the relationship is theoretically or practically important or even very large.

5.4.2 Cramer's V

Cramer's V (used with chi-square) is a measure of association for nominal, non-parametric variables (Cooper & Schindler 2001: 555). It ranges from zero to +1.0 and is used for larger than 2 X 2 chi-square tables, however it does not provide direction of the association or reflect causation.

For tables larger than 2 X 2, a measure called 'Cramer's phi' is derived by the following formula (where N = the total number of observations, and k = the smaller of the number of rows or columns):

Cramer's phi = the square root of (chi-square divided by (N times (k minus 1)))

So, for a Table (a 2 X 5), Cramer's phi would be computed as follows:

- N(k - 1) = 100 (2-1) = 100

- chi square/100 = 14.026/100 = 0.14

- square root of (2) = 0.37

The product is interpreted as a Pearson r (that is, as a correlation coefficient). (For 2 X 2 tables, a measure called 'phi' is derived by dividing the table's chi square value by N (the total number of observations) and then taking the square root of the product. Phi is also interpreted as a Pearson r.)

Computing a measure of association like phi or Cramer's phi is rarely done in quantitative linguistic analyses, but it is an important benchmark of just 'how much' of the phenomenon under investigation has been explained.

This measure, of course, doesn't begin to address the nature of the relation(s) between these variables, which is a crucial part of any adequate explanation or theory.

5.4.3 Phi

Phi (used with chi-square) is a measure of association for nominal, nonparametric variables (Cooper & Schindler 2001: 554).

It ranges from zero to +1.0 and is used best with 2 X 2 Chi-square tables, however it does not provide direction of the association or reflect causation.

This test attempts to correct chi-square proportionately to N.

The phi coefficient, φ, is appropriate for 2 X 2 and well as @ X r contingency tables. Its value is computed from c^2 and in the case of the 2 X 2 table it values range between -1 and +1.

Of course, unless the variables are ordinal the sign is meaningless.

Generally the Phi coefficient can be interpreted as follows:

- -1.0 to -0.7 strong negative association.

- -0.7 to -0.3 weak negative association.

- -0.3 to +0.3 little or no association.

- +0.3 to +0.7 weak positive association.

- +0.7 to +1.0 strong positive association.

5.4.4 Contingency coefficient *C*

The contingency coefficient *C* (used with chi-square) is a measure of association for nominal, nonparametric variables. The contingency coefficient *C* is a measure of the degree of relationship, association of dependence of the classifications in the frequency table (Cooper & Schindler 2001: 555).
It can be used for any sized chi-square table, the upper limit varies with table sizes, for a 2X2 table the upper limit is .71; for a 3X3 table the upper limit is .82; for a 4X4 table the upper limit is .87.
It does not provide direction of the association or reflect causation.
The larger the value of this coefficient, the greater the degree of association.
The maximum value of the coefficient, which is never greater than 1, is determined by the number of rows and columns in the table.

5.4.5 Likelihood ratio chi-square

Likelihood ratio chi-square is an alternative to test the hypothesis of no association of columns and rows in nominal-level tabular data (Cooper & Schindler 2001: 506).
This is part of SPSS output and is based on maximum likelihood estimation. Though computed differently, likelihood ratio chi-square is interpreted in the same way.

5.4.6 Mantel-Haenszel chi-square

Mantel-Haenszel chi-square, also called the *Mantel-Haenszel* test for linear association, (Cooper & Schindler 2001: 506) unlike ordinary and likelihood ratio chi-square, is an ordinal measure of significance. It is preferred when testing the significance of linear relationship between two ordinal variables. If found

significant, the interpretation is that increases in one variable are associated with increases (or decreases for negative relationships) in the other, greater than would be expected by chance of random sampling. Like other chi-square statistics, M-H chi-square should not be used with tables with small cell counts.

5.4.7 P-Value

The probability value (p-value) of a statistical hypothesis test is the probability of realising a value of the test statistic as extreme as, or more extreme than, that observed by chance alone, if the null hypothesis H0, is true.

It is the probability (Cooper & Schindler 2001: 494) of wrongly rejecting the null hypothesis if it is in fact true.
It is equal to the significance level of the test for which one would only just reject the null hypothesis. The p-value is compared with the significance level and, if it is smaller, the result is significant. That is, if the null hypothesis were to be rejected at
= 0.05, this would be reported as 'p < 0.05'.

Small p-values suggest that the null hypothesis is unlikely to be true. The smaller it is, the more convincing is the rejection of the null hypothesis. It indicates the strength of evidence for say, rejecting the null hypothesis H0, rather than simply concluding 'reject H0' or 'do not reject H0'.

Each statistical test has an associated null hypothesis, the p-value is the probability that the sample could have been drawn from the population(s) being tested (or that a more improbable sample could be drawn) given the assumption that the null hypothesis is true.
 A p-value of .05, for example, indicates only a 5% chance of drawing the sample being tested if the null hypothesis was actually true.

Null Hypothesis are typically statements of no difference or effect. A p-value close to zero signals that a null hypothesis is false, and typically that a difference is very likely to exist.

Large p-values closer to 1 imply that there is no detectable difference for the sample size used. A p-value of 0.05 is a typical threshold used in industry to evaluate the null hypothesis. In more critical industries (healthcare, etc.) a more stringent, lower p-value may be applied.

More specifically, the p-value of a statistical significance test represents the probability of obtaining values of the test statistic that are equal to or greater in magnitude than the observed test statistic.

To calculate a p-value, the collected sample data is calculated using the appropriate test statistic for the test being performed.

For example, t-statistic for testing means, Chi-Square or F statistic for testing variances etc.

Using the theoretical distribution of the test statistic, one must find the area under the curve (for continuous variables) in the direction(s) of the alternative hypothesis using a look up table or integral calculus.

In most studies, results are commonly summarised by a statistical test, and a decision about the significance of the result is based on a p-value.

To interpret this p-value, one must first know how the test was structured. In the case of this two-sided t-test, the hypotheses are:

H_o: $u_1 = u_2$ (Null hypothesis: means of two groups are equal)

H_a: $u_1 <> u_2$ (Alternative: means of the two groups are not equal)

A low p-value for the statistical test points to rejection of the null hypothesis, because it indicates how unlikely it is that a test statistic as extreme as, or more extreme than, the one given by this data will be observed from this population if the null hypothesis is true. If for example one gets a $p=0.015$, this means that if the population means were equal as hypothesised (under the null), there is a 15 in 1000 chance that a more extreme test statistic would be obtained using data from this population.

If one agrees that there is enough evidence to reject the null hypothesis, one concludes that there is significant evidence to support the alternative hypothesis.

The researcher decides the significance level to use — that is, what cut-off point would decide significance, would be a level of significance of 0.05.
When the significance level is set at 0.05, any test resulting in a p-value under 0.05 would be significant. Therefore, one would reject the null hypothesis in favour of the alternative hypothesis.

P-values do not simply provide one with a Yes or No answer, they provide a sense of the strength of the evidence against the null hypothesis. The lower the p-value, the stronger the evidence

5.4.8 F-value (ANOVA)

Measurement of distance between individual distributions. As F goes up, P goes down (i.e. more confidence in there being a difference between two means). The F value is calculated as follows: (Mean Square of X / Mean Square of Error) (Cooper & Schindler 2001: 510).
The testing of two independent variables may call for the introduction of ANOVA (Analysis of variance).
Analysis of variance (Grimm & Yarnold, 1995) is used to test the main and interaction effects of categorical variables on a continuous dependent variable, controlling for the effects of selected other continuous variables which covary with the dependent.
The control variable is called the "covariate." There may be more than one covariate. One may also perform planned comparison or post hoc comparisons to see which values of a factor contribute most to the explanation of the dependent.
ANOVA is used for three purposes:

- In quasi-experimental (observational) designs, to remove the effects of variables which modify the relationship of the categorical independents to the interval dependent.

- In experimental designs, to control for factors which cannot be randomised, but which, can be measured on an interval scale. Since randomisation in principle can control for all unmeasured variables, in principle the addition of covariates to a model is rarely or never needed in experimental research. If a covariate is added and it is uncorrelated with the treatment (independent) variable, it is difficult to interpret, as in principle it is controlling for something already controlled for by randomisation. If the covariate is correlated with the treatment/independent, then it will lead to underestimate of the effect size of the treatment/independent.

- In regression models, to fit regressions where there are both categorical and interval independents (This third purpose has become displaced by logistic regression and other methods).

All three purposes have the goal of reducing the error term in the model. Like other control procedures, ANOVA can be seen as a form of "what if" analysis, asking what would happen if all cases scored equally on the covariates, so that the effect of the factors over and beyond the covariates can be isolated.

ANOVA involves a multiple regression model (Cooper & Schindler 2001: 555) in which the study factors of interest are all treated as nominal variables, whereas the variables being controlled, that is, the covariates, may be measurements on any measurements on any measurement scale. Nominal variables are incorporated into regression models by means of dummy variables. Thus the general ANOVA model usually contains a mixture of dummy variables and other types of variables, and the dependent variable is considered continuous. In using the ANOVA model, it is also assumed that there is no interaction of covariates with study variables, as this assumption should be assessed in the analysis.

ANOVA adjusts for disparities in covariates distributions over groups by artificially assuming that all groups have the same set of mean covariate values. For example, if business knowledge and work experience are the covariates and there are two groups being compared, the ANOVA adjustment procedure treats both groups as if they had the same mean business knowledge and the same mean work experience.

The ANOVA adjustment procedure is equivalent to artificially assuming a common covariate distribution based on the combined sample over all groups. That is, not only are the means assumed to be equal, but also the entire distribution of the covariates in the combined sample is assumed to be the same as the distribution of the covariates in each group. Thus the method of adjustment using ANOVA does what one hopes it will do — correct the disparity in covariate distributions over groups by assuming a common distribution.

The ANOVA method is inappropriate when the relationship between the covariates and the response is not the same in each group. Such non-parallelism or interaction might be reflected. Consequently, the use of a standard ANOVA could lead to adjusted mean scores for each group that are roughly equal.

5.4.9 Fisher Exact Test

The Fisher Exact Test looks at a contingency table, which displays how different treatments have produced different outcomes (Cooper & Schindler 2001: 498). Its null hypothesis is that treatments do not affect outcomes, that the two are independent.
Rejecting the null hypothesis (i.e. conclude treatment affects outcome) if p is "small".
Fisher's exact test is used to calculate an exact P-value for a 2x2 frequency table with small number of expected frequencies, for which the Chi-square test is not appropriate.

5.4.10 Mann-Whitney test

The Mann-Whitney test, also called the rank sum test, is a non-parametric test that compares two unpaired groups (Cooper & Schindler 2001: 498).

To perform the Mann-Whitney test, all the values are ranked from low to high, paying no attention to which group each value belongs.

If two values are the same, then they both get the average of the two ranks for which they tie. The smallest number gets a rank of 1. The largest number gets a rank of N, where N is the total number of values in the two groups.

The sums then ranked in each group, and the two sums reported. If the sums of the ranks are very different, the P value will be small.

The P value answers the question, if the populations really have the same median, what is the chance that random sampling would result in a sum of ranks as far apart (or more so) as observed in this experiment?

If the samples are small, an exact P value is calculated. If the samples are large, it approximates the P value from a Gaussian approximation. The term Gaussian has to do with the distribution of sum of ranks, and does not imply that data should follow a Gaussian distribution. The approximation is quite accurate with large samples.

Multiple regression and multiple correlation (Grimm & Yarnold, 1995) was examined depending on the type of data in terms of the items of the various constructs and between the various elements of the constructs.

With correlation an index is calculated to measure (correlation coefficients) the nature of the relationship between the variables, while regression is an equation developed to predicting the dependant variable values (Cooper & Schindler, 2001: 533).

Chapter 6

Analysis

6.1 Introduction

A total of six hundred (600) questionnaires where sent out into the field, (the population was composed of the membership database of the Johannesburg Chamber of Commerce & Industry), using methods previously described and a total of one hundred and eighty one (181) questionnaires where returned. This translates to a response rate of approximately 30%. Two purposive samples were derived from a division of the responses elicited, based on success criteria as described in chapter two.

The data sample (n = 181) consists of 170 entrepreneurs as defined earlier in this study. A total of 88.95% of the respondents were founders of their firms, 95.58% had an equity share of greater than 10% and 95.58% partake in strategic decision making (Table 6).

Only those surveys in which all items were completely and obviously answered carefully were used for the statistical analyses.
During these comparisons only respondents that partake in strategic management decision making, were founders of their company and had at least 10% equity stake were considered.
All the growth and financial ratio questions pertained to the previous three years of business activities.

6.2 Descriptive analysis

The sample consists of 88.95% men and 11.05% t women (Table 5). The respondents fell into two distinctive age groups — 42.54% between 36 and 45 years of age and 43.65% between 46 and 55 years of age. Only 10.5% fell into the between 26 and 35 age group (Table 4).

The sample covers a wide range of business activity areas (Table 7), with the largest concentration in manufacturing (69.61%), services (13.27%), wholesale (9.94%) and the rest in retail (7.18%).

The same can be said for the firm's legal entity (Table 8), with the largest segment as a close corporation (44.75%), private company (44.2 %), sole proprietor (6.63%), partnership (3.31%) and the rest as a public company (1.1%).

The sample covered a wide range of business areas ranging from ferrous metal products (15.47%), food products (10.5%), industrial and commercial machinery (7.73%), leisure goods (6.63%), non-ferrous metal products and automobiles (6.08%) formed the main concentration. Activities such as aerospace, pharmaceuticals, beverages and tobacco (1.1%) were at the lower end respondents' main area of business.

It was interesting to note that the vast majority of entrepreneurs had experienced an increase in their personal wealth since their inception of their businesses (Table 9).

Table 4 Age distribution

Age Group	Percent
26-35	1.50
36-45	42.54
46-55	43.65
56-65	2.76
65+	0.55

Table 5 Sex distribution

Gender	Percent
Male	88.95
Female	11.05

Table 6 Entrepreneur categorisation responses

Founder	Percent
Founder	61.33
Non Founder	38.67
Equity Stake	
> 10 %	95.58
< 10%	4.42
Strategic Management Participation	
Partake	97.79
Non Participation	2.21

Table 7 Firm's main activity

Firm's Main Activity	Percent
Manufacturer	69.61
Retailer	7.18
Wholesaler	9.94
Services	13.27

Table 8 Firm's legal entity

Firm's Legal Entity	Percent
Sole Proprietor	6.63
Close Corporation	44.75
Private Company	44.20
Public Company	1.10
Partnership	3.31

Table 9 Personal wealth trend since business inception

Personal wealth	Percent
Remained the same	8.84
Increased	63.54
Increased significantly	27.62

6.3 Statistical test results

This study employed collapsing values/categories on the – dependant variable – entrepreneur success, into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs, were entrepreneurs who had indicated that they had shown increases over the past three years in their:

- Turnover
- Profit
- Employment
- Sales growth compared to competitors
- Market value to competitors

- Current ratio
- Fixed asset ratio
- Total assets turnover
- Profit margin ratio
- Return on assets ratio
- Return on equity ratio and
- A decline in the debt ratio

Less successful entrepreneurs had indicated a decline or state of no growth in the above mentioned items, and an increase in the debt ratio.

Tests were conducted between various items within the variables, and between the dependant and independent variables.

6.4 Measure of association results of the different items of the dependent variable entrepreneur success

The following measures of associations where conducted comparing successful and less successful entrepreneurs in terms of:
- how they rated their business activity as an important activity in their lives.
- how they split their personal time during a normal working week in comparison to the other success items.
- how they split their business time during a normal working week in comparison to the other success items.
- their personal versus business time split, and
- how they rated their business activity as an important activity in their lives against their personal and business time split during a normal working week.

Measures of association tests as previously described, were conducted between the various success items versus the various business knowledge items.

Only those tests that showed any significance were reported. Although phi co-efficients, contingency co-efficient and Cramer's V tests were conducted, only the chi square values are presented in the tables.

Table 10 Measures of association between successful and less successful entrepreneurs in terms of how they rated their business activity as an important activity in their lives

Variable	χ Square	P value
Employment	5.2702	0.0717**
Market Value Compared to competitors	2.8111	0.2452

* Significance at 0.05%

** Significance at 0.10%

The importance of business activity in the sample seemed to have no notable influence on the sales turnover item. Both entrepreneurs who recorded good sales turnover growth and those who showed little or no growth still regarded their business as an important activity in their lives.
This trend was observed over the other success items including profit, employment growth, sales and market growth compared to competitors.

When the importance of business activity in the sample was compared to the financial ratios of the firm, once again entrepreneurs who indicated less favourable ratios were in no way less committed to their businesses as entrepreneurs who indicated favourable ratios.

This is evident in the p values of chi-square, the other measure of association test — namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test. All indicate little or no relationship between the test variable, business importance and the other success variables.

However, the level of employment showed a level of significance at a 0.05%, (Mantel- Haenszel Chi-square) entrepreneurs who had showed an increase in employment over the proceeding three years had rated their businesses activity as an important activity in their lives.

Theses results are significant in themselves as one would have expected a greater association, between business as an activity in the lives of successful entrepreneurs and the above mentioned success items.
One can only conclude that the importance of business as an activity in the lives of the less successful entrepreneurs is just as important as for a successful entrepreneur.

Table 11 Measures of association between successful and less successful entrepreneurs in terms of how they split their personal time during a normal working week in comparison to the other success items

Variable	χ Square	P value
Profit Margin Ratio	7.176	0.0665**
Return on Equity	6.5906	0.0862**

* Significance at 0.05%

** Significance at 0.10%

Table 12 Measures of association between successful and less successful entrepreneurs in terms of how they split their business time during a normal working week in comparison to the other success items

Variable	χ Square	P value
Employment	2.2932	0.3177
Debt Ratio	2.2354	0.327

* Significance at 0.05%

** Significance at 0.10%

Both successful and less successful entrepreneurs' personal time and business splits during a normal working week showed no significant relationships against the other success variable items.

Both entrepreneurs who recorded good sales turnover growth and those who showed little or no growth had an even spread of personal time and business time during a normal working week.

This trend was observed over the other success items including profit, employment growth, sales and market growth compared to competitors. When the personal time split in the sample was compared to the financial ratios of the firm, the profit margin ratio and return on equity showed a moderate relationship. Entrepreneurs who indicated less favourable ratios had the same personal time and business time split as entrepreneurs who indicated favourable ratios.

This is evident in the p values of chi-square, the other measure of association test namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test. All indicate little or no relationship between the two test variables and the other success variables.

Return on equity showed a level of significance at a 0.05% (Mantel- Haenszel Chi-square).
Entrepreneurs who had indicated equilibrium in their personal time indicated a higher return on equity ratio over the proceeding three years.

These results, although not entirely expected, have shown that personal and business time split during a normal working week had very little influence on the growth success items and financial ratios. This could possibly be explained by quantity versus quality phenomenon.

Table 13 Measures of association between successful and less successful entrepreneurs in terms of their personal versus business time split

Variable	χ Square	P value
Business Time	83.2959	<.0001*

* Significance at 0.05%

** Significance at 0.10%

When the personal time split in the sample was compared to the business time split, a strong positive association was discovered.

This is evident in the p values of chi-square, the other measure of association test, namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test. All indicate a strong relationship between the two test variables.

This is to be expected and this test was done so as to determine the accuracy of the respondents' responses.

Table 14 Measures of association between successful and less successful entrepreneurs in terms of how they rated their business activity as an important activity in their lives against their personal and business time split during a normal working week

Variable	χ Square	P value
Personal Time	33.2724	<.0001*
Business Time	28.6599	<.0001*

* Significance at 0.05%

** Significance at 0.10%

The importance attached by successful entrepreneurs to their business, as an activity in their lives is evident.

This is evident in the p values of chi-square, the other measure of association test, namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test. All indicate a strong relationship between the two test variables and business activity.

When analysing the bivariate tables, 77% of the entrepreneurs responded that business was an important activity in their lives.
Further analysis revealed that 61% of the entrepreneurs spent between 50 and 69% of their time during a working week doing some form of business activity.

This is significant in that both successful and less successful entrepreneurs showed a high inclination in both their business time split in a normal working week and high regard for business as an activity in their lives.

6.5 Analysis between the first independent variable, business knowledge and entrepreneur success

The business knowledge variables where broken into the following items:

- Overall level of education
- Membership to a professional body
- Education level on the following business subjects
    - Finance
    - Marketing
    - Human resources
    - Legal
    - Production/ operations and
    - Information technology

The dependent variable entrepreneur success was collapsed into two categories: successful and less successful entrepreneurs, as previously discussed.

Measures of association tests as previously described were conducted between the various success items versus the various business knowledge items.

Only those tests that showed any significance were reported. Although phi co-efficients, contingency co-efficient and Cramer's V tests where conducted, only the chi square values are presented in the tables.

Table 15 Measures of association between successful and less successful entrepreneurs in terms of their overall level of education

Variable	χ Square	P Value
Sales Turnover	3.6940	0.0546**
Profit	7.8188	0.0052*
Market Value compared to competitors	3.5232	0.0605**
Fixed Asset Turnover	3.1694	0.0750**
Total Asset Turnover	4.5143	0.0336*
Profit Margin Ratio	2.7864	0.0951**
Return on Assets	3.5702	0.0588**
Return on Equity	2.8183	0.0932**

*   Significance at 0.05%

** Significance at 0.10%

During this analysis collapsing values/categories on the overall – dependant variable – entrepreneur success were employed, into two categories: successful and less successful entrepreneurs, as previously outlined.

The overall education levels were collapsed into two categories — the first category comprised of the secondary level of education that included primary school (grade 1 to grade 7) and high school (grade 8 to grade 12).
The second category consisted of tertiary education (Technikon / University) and post graduate studies.

Successful entrepreneurs who had indicated a higher overall level of education (category two) showed some statistical significance when compared to some of the growth items and financial ratios.

The following showed significance at a level of 5%:

- Profit and
- Total asset turnover

Further analysis of the bivariate tables of the two above items revealed that the total response split was 26% with a secondary level of education and a 74% with either a degree or diploma.

Table 16 Bivariate table showing the spread of the general level of education of successful and less successful entrepreneurs in terms of their profit growth

	Secondary Education	Tertiary Education
Less Successful Entrepreneurs	19	27
Successful Entrepreneurs	25	99

It is evident that from Table 16, the spread of the general level of education in terms of successful entrepreneurs when compared to their profit growth was as follows:

- Category 1 (Secondary)   20.16%
- Category 2 (Diploma / Degree)   79.84%

The spread of the general level of education in terms of the less successful entrepreneurs when compared to their profit growth was as follows:

- Category 1 (Secondary)   41.30%
- Category 2 (Diploma / Degree)   58.70%

Table 17 Bivariate table showing the spread of the general level of education of successful and less successful entrepreneurs in terms of their total asset turnover

	Secondary Education	Tertiary Education
Less Successful Entrepreneurs	19	27
Successful Entrepreneurs	25	99

It is evident that from Table 17, the spread of the general level of education in terms of successful entrepreneurs when compared to their total asset turnover growth was as follows:

- Category 1 (Secondary)   21.60%
- Category 2 (Diploma / Degree)   78.40%

The spread of the general level of education in terms of the less successful entrepreneurs when compared to their total asset turnover growth was as follows:

- Category 1 (Secondary)   37.78%
- Category 2 (Diploma / Degree)   62.22%

It is however useful to note that the following items showed significance at a level of 10%:

- Sales turnover
- Market value compared to competitors
- Fixed asset turnover
- Profit margin ratio
- Return on assets and
- Return on equity

This is evident in the p values of chi-square, the other measure of association test, namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test. All indicate some relationship between the overall level of education and the various growth items and financial ratios.

One would have expected these results to be found throughout the entire twelve success items and not only on a few. This in itself is significant, and could possibly be used in a further study later.

These results do however add a somewhat tentative weight to the rejection of the null hypothesis.

Table 18 Measures of association between successful and less successful entrepreneurs in terms of their membership to a professional body

Variable	χ Square	P Value
Sales Turnover	4.0047	0.0454*
Profit	5.5853	0.0181*
Sales growth compared to competitors	3.4925	0.0616**
Return on Assets	4.3068	0.0380*
Return on Equity	5.1772	0.0229*

*   Significance at 0.05%

**   Significance at 0.10%

Successful entrepreneurs who indicated that they belonged to a professional body showed some statistical significance when compared to some of the growth items and financial ratios.
The following showed significance at a level of 5%:

- Sales turnover
- Profit
- Return on assets and
- Return on equity

Further analysis of the bivariate tables of the four above items revealed that the total response split was 31% belonged to a professional body while 69% did not belong to a professional body.

Table 19 Bivariate table showing the spread of membership to a professional body by successful and less successful entrepreneurs in terms of their sales turnover growth

	Member	Non Member
Less Successful Entrepreneurs	4	23
Successful Entrepreneurs	49	94

It is evident from Table 19 that the spread of the membership to a professional body of successful entrepreneurs when compared to their sales turnover growth was as follows:

- Category 1 (Member)   34.27%
- Category 2 (Non Member)   65.73%

The spread of the membership to a professional body by less successful entrepreneurs when compared to their sales turnover growth was as follows:

- Category 1 (Member)   14.81%
- Category 2 (Non Member)   85.19%

Table 20 Bivariate table showing the spread of membership to a professional body by successful and less successful entrepreneurs in terms of their profit growth

	Member	Non Member
Less Successful Entrepreneurs	8	38
Successful Entrepreneurs	45	79

It is evident from Table 20 that the spread of the membership to a professional body of successful entrepreneurs when compared to their profit growth was as follows:

- Category 1 (Member)   36.29%
- Category 2 (Non Member)   63.71%

The spread of the membership to a professional body by less successful entrepreneurs when compared to their profit growth was as follows:

- Category 1 (Member)   17.39%

- Category 2 (Non Member)   82.61%

Table 21 Bivariate table showing the spread of membership to a professional body by successful and less successful entrepreneurs in terms of their return on asset ratio

	Member	**Non Member**
Less Successful Entrepreneurs	11	43
Successful Entrepreneurs	42	74

The spread of the membership to a professional body of successful entrepreneurs when compared to their return on assets ratio was as follows:

- Category 1 (Member)   36.21%
- Category 2 (Non Member)   63.79%

The spread of the membership to a professional body of less successful entrepreneurs when compared to their return on assets ratio was as follows:

- Category 1 (Member)   20.37%
- Category 2 (Non Member)   79.63%

Table 22 Bivariate table showing the spread of membership to a professional body by successful and less successful entrepreneurs in terms of their return on equity ratio

	Member	**Non Member**
Less Successful Entrepreneurs	11	43
Successful Entrepreneurs	42	74

The spread of the membership to a professional body of successful entrepreneurs when compared to their return on equity ratio was as follows:

- Category 1 (Member)   36.84%
- Category 2 (Non Member)   63.16%

The spread of the membership to a professional body of less successful entrepreneurs when compared to their return on equity ratio was as follows:

- Category 1 (Member)   20.37%
- Category 2 (Non Member)   79.63%

Sales growth compared to competitors showed significance at a level of 10%.

This is evident in the p values of chi-square, the other measure of association test, namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test. All indicate some relationship between the membership to a professional body and the various growth items and financial ratios.

These results are significant ⸺ especially the sales turnover item and the sales growth compared to competitors. This could possibly be due to successful entrepreneurs networking within their professional organisantions, thereby identifying customer networks and expanding their sales growth with this acquired knowledge.

These results do however add a somewhat tentative weight to the rejection of the null hypothesis.

Table 23 Measures of association between successful and less successful entrepreneurs in terms of their level of education in finance

Variable	χ Square	P value
Sales Turnover	8.4204	0.0381*
Profit	14.8934	0.0019*
Employment	11.0739	0.0113*
Market Value compared to competitors	8.8367	0.0315*
Debt Ratio	9.7064	0.0212*

*   Significance at 0.05%

For this measure of association test, the level of education in terms of finance was collapsed into four categories:

- None
- Secondary
- Diploma and
- Degree and post graduate into the fourth category.

The total response distribution was as follows:

- Category 1 (None)   18.82 %
- Category 2 (Secondary)   28.24 %
- Category 3 (Diploma)   31.76 % and
- Category 4 (Degree and post graduate)   21.18 %

Successful entrepreneurs who indicated that they had a diploma or degree in finance, showed some statistical significance when compared to some of the growth items and financial ratios.

The following items showed significance at a level of 5%:

- Sales turnover
- Profit
- Employment
- Market Value compared to competitors and
- Debt ratio

This is evident in the p values of chi-square, the other measure of association test, namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test. These values all indicate some relationship between the finance education levels and the various growth items and financial ratios.

Further analysis of the bivariate tables of the five above items revealed the following response spreads.

Table 24 Bivariate table showing the spread of the level of education in finance by successful and less successful entrepreneurs in terms of their sales turnover

	None	Secondary	Diploma	Degree Post Graduate
Less Successful Entrepreneurs	3	13	9	2
Successful Entrepreneurs	28	35	45	34

Of the total sample size of one hundred and seventy (170), a total of one hundred and forty three (143) respondents fell into the successful entrepreneur category in terms of sales turnover. This translates to approximately 84%.

The spread of the level of education in finance in terms of successful entrepreneurs when compared to their sales turnover growth was as follows:

- Category 1 (None)   20.28 %
- Category 2 (Secondary)   24.48 %
- Category 3 (Diploma)   31.47 % and
- Category 4 (Degree and post graduate)   23.78 %

A total of one hundred and twenty seven (27) respondents fell into the less successful entrepreneur category in terms of sales turn over. This translates to approximately sixteen percent (26%).

The spread of the level of education in finance in terms of less successful entrepreneurs when compared to their sales turnover growth was as follows:

- Category 1 (None)   11.11 %
- Category 2 (Secondary)   48.15 %
- Category 3 (Diploma)   33.33 % and
- Category 4 (Degree and post graduate)   7.41 %

Table 25 Bivariate table showing the spread of the level of education in finance by successful and less successful entrepreneurs in terms of their profit

	None	Secondary	Diploma	Degree Post Graduate
Less Successful Entrepreneurs	6	23	11	6
Successful Entrepreneurs	26	25	43	30

Of the total sample size of one hundred and seventy (170), a total of one hundred and twenty four (124) respondents fell into the successful entrepreneur category in terms of sales turnover. This translates to approximately 73%.

The spread of the level of education in finance in terms of successful entrepreneurs when compared to their profit growth was as follows:

- Category 1 (None)   20.97 %
- Category 2 (Secondary)   20.16 %
- Category 3 (Diploma)   34.68 % and
- Category 4 (Degree and post graduate)   24.19 %

A total of forty six (46) respondents fell into the less successful entrepreneur category in terms of sales turnover. This translates to 27%.
The spread of the level of education in finance in terms of less successful entrepreneurs when compared to their profit growth was as follows:

- Category 1 (None)   13.04 %
- Category 2 (Secondary)   50.00 %
- Category 3 (Diploma)   23.91 % and
- Category 4 (Degree and post graduate)   13.04 %

Table 26 Bivariate table showing the spread of the level of education in finance by successful and less successful entrepreneurs in terms of their employment trend

	None	Secondary	Diploma	Degree Post Graduate
Less Successful Entrepreneurs	11	34	29	17
Successful Entrepreneurs	21	14	25	19

Of the total sample size of one hundred and seventy (170), a total of seventy nine (79) respondents fell into the successful entrepreneur category in terms of employment. This translates to approximately 46%.

The spread of the level of education in finance in terms of successful entrepreneurs when compared to their employment growth was as follows:

- Category 1 (None)   26.58 %
- Category 2 (Secondary)   17.72 %
- Category 3 (Diploma)   31.65 % and
- Category 4 (Degree and post graduate)   24.05 %

A total of ninety-one (91) respondents fell into the less successful entrepreneur category in terms of employment growth. This translates to approximately 54%.

The spread of the level of education in finance in terms of less successful entrepreneurs when compared to their employment growth was as follows:

- Category 1 (None)   12.09 %
- Category 2 (Secondary)   37.36 %
- Category 3 (Diploma)   31.87 % and
- Category 4 (Degree and post graduate)   18.68 %

Table 27 Bivariate table showing the spread of the level of education in finance by successful and less successful entrepreneurs in terms of their market value growth compared to competitors

	None	Secondary	Diploma	Degree Post Graduate
Less Successful Entrepreneurs	13	30	19	14
Successful Entrepreneurs	19	18	35	22

Of the total sample size of one hundred and seventy (170), a total of ninety four (94) respondents fell into the successful entrepreneur category in terms of their market value growth compared to competitor. This translates to approximately 55%.

The spread of the level of education in finance in terms of successful entrepreneurs when compared to their market value growth compared to competitors was as follows:

- Category 1 (None)   20.21 %
- Category 2 (Secondary)   19.15 %
- Category 3 (Diploma)   37.23 % and
- Category 4 (Degree and post graduate)   23.40 %

A total of seventy-six (76) respondents fell into the less successful entrepreneur category in terms of their market value growth compared to competitors. This translates to approximately 45%.

The spread of the level of education in finance in terms of less successful entrepreneurs when compared to their market value growth compared to competitors was as follows:

- Category 1 (None)   17.11 %
- Category 2 (Secondary)   39.47 %
- Category 3 (Diploma)   25.00 % and
- Category 4 (Degree and post graduate)   18.42 %

Table 28 Bivariate table showing the spread of the level of education in finance by successful and less successful entrepreneurs in terms of their debt ratio

	None	Secondary	Diploma	Degree Post Graduate
Less Successful Entrepreneurs	3	13	16	3
Successful Entrepreneurs	29	35	38	33

Of the total sample size of one hundred and seventy (170), a total of one hundred and thirty five (135) respondents fell into the successful entrepreneur category in terms of their debt ratio. This translates to approximately 79%.

The spread of the level of education in finance in terms of successful entrepreneurs when compared to their debt ratio was as follows:

- Category 1 (None)   21.48 %
- Category 2 (Secondary)   25.93 %
- Category 3 (Diploma)   28.15 % and
- Category 4 (Degree and post graduate)   24.44 %

A total of thirty five (35) respondents fell into the less successful entrepreneur category in terms of their debt ratio. This translates to approximately 21%.

The spread of the level of education in finance in terms of less successful entrepreneurs when compared to their debt ratio was as follows:

- Category 1 (None)   8.57 %
- Category 2 (Secondary)   37.14 %
- Category 3 (Diploma)   45.71 % and
- Category 4 (Degree and post graduate)   8.57 %

These results are significant in terms of the direct link between finance education level and the statistical significance obtained from the growth and financial ratios. This could possibly be due to successful entrepreneurs using their financial knowledge in reporting favourable growth and financial ratios.

It is however clear that, when looking at the bivariate tables, there were a few successful entrepreneurs who had a low level of education in terms of finance, and a few less successful entrepreneurs who had a high level of financial education.

Most of the successful entrepreneurs had a diploma or higher education in finance when comparing them to sales turnover.

This trend was observed over the other success items including profit, employment, market value compared to competitors and the debt ratio.

These results do however add a somewhat tentative weight to the rejection of the null hypothesis.

Table 29 Measures of association between successful and less successful entrepreneurs in terms of their level of education in marketing

Variable	χ Square	P value
Sales Turn Over	7.1720	0.0666**
Profit	8.1126	0.0437*
Employment	9.6029	0.0223*

* Significance at 0.05%

** Significance at 0.10%

The level of education in terms of marketing was collapsed into four categories:

- None
- Secondary
- Diploma and
- Degree and post graduate into the fourth category.

The total response distribution was as follows:

- Category 1 (None)   21.76 %
- Category 2 (Secondary)   22.94 %
- Category 3 (Diploma)   38.24 % and
- Category 4 (Degree and post graduate)   17.06 %

Successful entrepreneurs who indicated that they had a diploma or degree in marketing, showed some statistical significance when compared to some of the growth items and financial ratios.

The following showed significance at a level of 5%:

- Profit and
- Employment

The following showed significance at a level of 10%.

- Sales turnover

This is evident in the p values of chi-square, the other measure of association test, namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test. These values all indicate some relationship between the marketing education levels and the various growth items and financial ratios.

Further analysis of the bivariate tables of the two above items revealed the following response spreads.

Table 30 Bivariate table showing the spread of the level of education in marketing by successful and less successful entrepreneurs in terms of their profit growth

	None	Secondary	Diploma	Degree Post Graduate
Less Successful Entrepreneurs	9	16	18	3
Successful Entrepreneurs	28	23	47	26

Of the total sample size of one hundred and seventy (170), a total of one hundred and twenty four (124) respondents fell into the successful entrepreneur category in terms of their profit growth. This translates to approximately 73%.

The spread of the level of education in marketing in terms of successful entrepreneurs when compared to their profit growth was as follows:

- Category 1 (None)   22.58 %
- Category 2 (Secondary)   18.55 %
- Category 3 (Diploma)   37.90 % and
- Category 4 (Degree and post graduate)   20.97 %

A total of forty-six (46) respondents fell into the less successful entrepreneur category in terms of their profit growth. This translates to approximately 27%.

The spread of the level of education in marketing in terms of less successful entrepreneurs when compared to their profit growth was as follows:

- Category 1 (None)   19.57 %
- Category 2 (Secondary)   34.78 %
- Category 3 (Diploma)   39.13 % and
- Category 4 (Degree and post graduate)   6.52 %

Table 31 Bivariate table showing the spread of the level of education in marketing by successful and less successful entrepreneurs in terms of their employment growth

	None	Secondary	Diploma	Degree Post Graduate
Less Successful Entrepreneurs	16	26	39	10
Successful Entrepreneurs	21	13	26	19

Of the total sample size of one hundred and seventy (170), a total of seventy nine (79) respondents fell into the successful entrepreneur category in terms of their employment growth. This translates to approximately 46%.

The spread of the level of education in marketing in terms of successful entrepreneurs when compared to their employment growth was as follows:

- Category 1 (None)   26.58 %
- Category 2 (Secondary)   16.46 %
- Category 3 (Diploma)   32.91 % and

- Category 4 (Degree and post graduate)   24.05 %

A total of ninety-one (91) respondents fell into the less successful entrepreneur category in terms of their profit growth. This translates to approximately 54%.

The spread of the level of education in marketing in terms of less successful entrepreneurs when compared to their employment growth was as follows:

- Category 1 (None)   17.58 %
- Category 2 (Secondary)   28.57 %
- Category 3 (Diploma)   42.86 % and
- Category 4 (Degree and post graduate)   10.99 %

These results are significant in terms of the direct link between marketing education level and the statistical significance obtained from the growth and financial ratios.

It is evident that the various bivariate tables showed that a few successful entrepreneurs who had a low level of education in terms of marketing, and a few less successful entrepreneurs who had a high level of financial marketing.

The majority of the successful entrepreneurs had a diploma or higher education in marketing when comparing them to sales turnover, profit and employment. This trend was observed over the all the other success items, however the statistical tests did not show a chi square p-value low enough to be considered significant.

These results do however add a somewhat tentative weight to the rejection of the null hypothesis.

Table 32 Measures of association between successful and less successful entrepreneurs in terms of their level of education in human resources

Variable	χ Square	P value
Sales Turnover	10.1818	0.0171*
Profit	14.3071	0.0025*
Fixed Asset Turnover	9.4088	0.0243*
Total Asset Turnover	11.1324	0.0110*

*   Significance at 0.05%

The level of education in terms of human resources were collapsed into four categories:

- None
- Secondary
- Diploma and
- Degree and post graduate into the fourth category.

The total response distribution was as follows:

- Category 1 (None)   40.00 %
- Category 2 (Secondary)   27.06 %
- Category 3 (Diploma)   26.47 % and
- Category 4 (Degree and post graduate)   6.47 %

Successful entrepreneurs who indicated that they had a diploma or degree in human resources, showed some statistical significance when compared to some of the growth items and financial ratios.

The following showed significance at a level of 5%.

- Sales turnover
- Profit
- Fixed asset turnover and
- Total asset turnover.

It is significant that the other success items did not show any level of significance.

This is evident in the p values of chi-square, the other measure of association test, namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test. These values all indicate some relationship between the human resources education levels and the various growth items and financial ratios.

Further analysis of the bivariate tables of the above four items revealed the following response spreads.

Table 33 Bivariate table showing the spread of the level of education in human resources by successful and less successful entrepreneurs in terms of their sales turnover

	None	Secondary	Diploma	Degree Post Graduate
Less Successful Entrepreneurs	8	14	4	1
Successful Entrepreneurs	60	32	41	10

Of the total sample size of one hundred and seventy (170), a total of one hundred and forty three (143) respondents fell into the successful entrepreneur category in terms of sales turn over. This translates to approximately 84%.

The spread of the level of education in human resources in terms of successful entrepreneurs when compared to their sales turnover was as follows:

- Category 1 (None)   41.96 %
- Category 2 (Secondary)   22.38 %
- Category 3 (Diploma)   28.67 % and
- Category 4 (Degree and post graduate)   6.99 %

A total of twenty-seven (27) respondents fell into the less successful entrepreneur category in terms of their sales turn over. This translates to approximately 16%.

The spread of the level of education in human resources in terms of less successful entrepreneurs when compared to their sales turnover was as follows:

- Category 1 (None)   29.63 %
- Category 2 (Secondary)   51.85 %
- Category 3 (Diploma)   14.81 % and
- Category 4 (Degree and post graduate)   3.70 %

Table 34 Bivariate table showing the spread of the level of education in human resources by successful and less successful entrepreneurs in terms of their profit growth

	None	Secondary	Diploma	Degree Post Graduate
Less Successful Entrepreneurs	8	14	4	1
Successful Entrepreneurs	60	32	41	10

Of the total sample size of one hundred and seventy (170), a total of one hundred and twenty four (124) respondents fell into the successful entrepreneur category in terms of profit growth. This translates to approximately 73%.

The spread of the level of education in human resources in terms of successful entrepreneurs when compared to their profit growth was as follows:

- Category 1 (None)   40.32 %
- Category 2 (Secondary)   20.16 %
- Category 3 (Diploma)   32.26 % and
- Category 4 (Degree and post graduate)   7.26 %

A total of forty-six (46) respondents fell into the less successful entrepreneur category in terms of their profit growth. This translates to approximately 27%.

The spread of the level of education in human resources in terms of less successful entrepreneurs when compared to their profit growth was as follows:

- Category 1 (None)   39.13 %
- Category 2 (Secondary)   45.65 %

- Category 3 (Diploma)   10.87 % and
- Category 4 (Degree and post graduate)   4.35 %

Table 35 Bivariate table showing the spread of the level of education in human resources by successful and less successful entrepreneurs in terms of their fixed asset turnover

	None	Secondary	Diploma	Degree Post Graduate
Less Successful Entrepreneurs	17	19	7	5
Successful Entrepreneurs	51	27	38	6

Of the total sample size of one hundred and seventy (170), a total of one hundred and twenty two (122) respondents fell into the successful entrepreneur category in terms of fixed asset turn over. This translates to approximately 72%.

The spread of the level of education in human resources in terms of successful entrepreneurs when compared to their fixed asset turnover was as follows:

- Category 1 (None)   41.80 %
- Category 2 (Secondary)   22.13 %
- Category 3 (Diploma)   31.15 % and
- Category 4 (Degree and post graduate)   4.92 %

A total of forty-eight (48) respondents fell into the less successful entrepreneur category in terms of their fixed asset turn over. This translates to approximately 28%.

The spread of the level of education in human resources in terms of less successful entrepreneurs when compared to their fixed asset turnover was as follows:

- Category 1 (None)   35.42 %
- Category 2 (Secondary)   39.58 %
- Category 3 (Diploma)   14.58 % and
- Category 4 (Degree and post graduate)   10.42 %

Table 36 Bivariate table showing the spread of the level of education in human resources by successful and less successful entrepreneurs in terms of their total asset turnover

	None	Secondary	Diploma	Degree Post Graduate
Less Successful Entrepreneurs	16	20	6	3
Successful Entrepreneurs	52	26	39	8

Of the total sample size of one hundred and seventy (170), a total of one hundred and twenty five (125) respondents fell into the successful entrepreneur category in terms of total asset turnover. This translates to approximately 74%.

The spread of the level of education in human resources in terms of successful entrepreneurs when compared to their total asset turnover was as follows:

- Category 1 (None)   41.60 %
- Category 2 (Secondary)   20.80 %
- Category 3 (Diploma)   31.20 % and
- Category 4 (Degree and post graduate)   6.40 %

A total of forty-five (45) respondents fell into the less successful entrepreneur category in terms of their fixed asset turnover. This translates to approximately 26%.

The spread of the level of education in human resources in terms of less successful entrepreneurs when compared to their total asset turnover was as follows:

- Category 1 (None)   35.56 %
- Category 2 (Secondary)   44.44 %
- Category 3 (Diploma)   13.33 % and
- Category 4 (Degree and post graduate)   6.67 %

These results are significant in terms of the direct link between human resources education level and the statistical significance obtained from the growth and financial ratios.

The analysis of the various bivariate tables, show that a few successful entrepreneurs that had a low level of education in terms of marketing, and a few less successful entrepreneurs that had a high level of financial marketing.

The majority of the successful entrepreneurs had a diploma or higher education in marketing when comparing them to sales turnover, profit and employment. This trend was observed over the all the other success items, however the statistical tests did not show a chi square p-value low enough to be considered significant.

These results do however add a somewhat tentative weight to the rejection of the null hypothesis.

Table 37 Measures of association between successful and less successful entrepreneurs in terms of their level of education in the legal field

Variable	χ Square	P Value
Sales growth compared to competitors	2.7137	0.0995**
Market Value compared to competitors	5.0207	0.0250*

* Significance at 0.05%

** Significance at 0.10%

The level of education in terms of the legal field was collapsed into two categories:

- None and
- Secondary to post graduate category.

The total response distribution was as follows:

- Category 1 (None)   61.76 % and
- Category 2 (Secondary to post graduate)   38.24 %

Successful entrepreneurs who indicated that they had a diploma or degree in the legal field, showed very limited statistical significance when compared to some of the growth items and financial ratios.

Only growth in the market value compared to competitors showed significance at a level of 5%.

Growth in the sales growth compared to competitors showed significance at a level of 10%.

This is evident in the p values of chi-square, the other measure of association test, namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test.

Further analysis of the bivariate table comparing the growth in the market value compared to competitors in terms of successful entrepreneurs revealed the following.

Table 38 Bivariate table showing the spread of the level of education in the legal field by successful and less successful entrepreneurs in terms of their market growth compared to their competitors

	None	**Secondary to Post Graduate**
Less Successful Entrepreneurs	54	22
Successful Entrepreneurs	51	43

Of the total sample size of one hundred and seventy (170), a total of ninety four (94) respondents fell into the successful entrepreneur category in terms of their market growth compared to their competitors. This translates to approximately 55%.

The spread of the level of education in legal field of successful entrepreneurs when compared to their market growth compared to their competitors was as follows:

- Category 1 (None)   54.26 % and

- Category 2 (Secondary to post graduate)   45.74 %

A total of seventy-six (76) respondents fell into the less successful entrepreneur category in terms of their market growth compared to their competitors. This translates to approximately 45%.

The spread of the level of education in legal field of successful entrepreneurs when compared to their market growth compared to their competitors was as follows:

- Category 1 (None)   71.05 % and
- Category 2 (Secondary to post graduate)   28.95 %

It is significant that the other growth items and financial ratios did not show any statistical significance.
The analysis of the other bivariate tables, showed that many of the successful and less successful entrepreneurs had low levels of education in the legal field, which is rather significant.

This trend was observed over the all the other success items. These results do not really add any tentative weight to the rejection of the null hypothesis.

Table 39 Measures of association between successful and less successful entrepreneurs in terms of their level of education in the operations/production field

Variable	χ Square	P value
Sales Turnover	5.2873	0.1519
Profit	5.3502	0.1479

*   Significance at 0.05%

** Significance at 0.10%

The level of education in terms of operations/production was collapsed into four categories:

- None

- Secondary

- Diploma and

- Degree and post graduate into the fourth category.

The total response distribution was as follows:

- Category 1 (None)   38.82 %

- Category 2 (Secondary)   15.88 %

- Category 3 (Diploma)   32.35 % and

- Category 4 (Degree and post graduate)   12.94 %

Successful entrepreneurs who indicated that they had a diploma or degree in the operations/production field, showed no statistical significance when compared to the growth items and financial ratios.

This is evident in the p values of chi-square, the other measure of association test, namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test.

It is significant that all the growth items and financial ratios did not show any statistical significance.

The analysis of the various bivariate tables, showed that many of the successful entrepreneurs had higher levels of education in the production/operations field, compared to less successful entrepreneurs, which is significant.
This trend was observed across all the success items.
These results do not really add any tentative weight to the rejection of the null hypothesis.

Table 40 Measures of association between successful and less successful entrepreneurs in terms of their level of education in the information technology field

Variable	χ Square	P Value
Market Value compared to competitors	5.7607	0.1239
Fixed Asset Turnover	5.5028	0.1385

** Significance at 0.10%

The level of education in terms of information technology was collapsed into four categories:

- None

- Secondary

- Diploma and

- Degree and post graduate into the fourth category.

The total response distribution was as follows:

- Category 1 (None)   42.39 %

- Category 2 (Secondary)   16.47 %

- Category 3 (Diploma)   33.53 % and

- Category 4 (Degree and post graduate)   7.06 %

Successful entrepreneurs who indicated that they had a diploma or degree in the information technology field, showed no statistical significance when compared to the growth items and financial ratios.

This is evident in the p values of chi-square, the other measure of association test, namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test. Only the Mantel Haenzel χ Square, P values suggested some significance at a level of 10% on the following success items:

- Market Value compared to competitors and

- Fixed Asset Turnover

The Mantel Haenzel χ Square is preferred when testing the significance of linear relationship between two ordinal variables. Any significance found could be interpreted as that of increases in one variable if associated with increases in the other variable, or decreases for negative relationships.

It is significant that all the growth items and financial ratios did not show any statistical significance at 5%.
The analysis of the bivariate tables, showed that both the successful entrepreneurs and less successful entrepreneurs had low levels of education in the information technology field, which is significant.

These results do not really add any tentative weight to the rejection of the null hypothesis.

Table 41 Measures of association between path dependant successful and less successful entrepreneurs in terms of their overall level of education versus their financial ratios

Variable	χ Square	P Value
Financial Ratios	0.3037	0.5815

** Significance at 0.10%

The level of education in terms of overall level of education per business subject was collapsed into two categories:

- Category 1 None to diploma and
- Category 2 Degree and post graduate into the second category.

In terms of the financial ratios, path dependent successful and less successful entrepreneurs was collapsed into two categories:

- Those that showed increases in all their ratios (except the debt ratio) and

- Those that had not shown a decrease in all their ratios (except the debt ratio).

Path dependent successful entrepreneurs and less successful entrepreneurs showed no statistical significance when their financial ratios where compared to their overall level of education per business subject.

This is evident in the p values of chi-square, the other measure of association test, namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test.

The analysis of the bivariate table, showed that both the path dependant successful entrepreneurs and less successful entrepreneurs in terms of their financial ratios, had practically the same overall level of education per business subject ratio, which is significant.

Table 42 Bivariate table showing the spread of the level of education per business subjects by path dependant successful and less successful entrepreneurs in terms of their financial ratios

	None to Diploma	Degree to Post Graduate
Less Successful Entrepreneurs	52	36
Successful Entrepreneurs	16	14

The total response distribution in terms of the overall level of education per business subjects was as follows:

- Category 1 (None to diploma)   57.63 % and
- Category 2 (Degree and post graduate)   42.37 %

Of the total sample size of one hundred and eighteen (118), a total of only thirty (30) respondents fell into the successful entrepreneur category in terms of their financial ratios. This translates to approximately 25%.

A total of eighty-eight (88) respondents fell into the less successful entrepreneur category in terms of their market growth compared to their competitors. This translates into approximately 75%.

These results do not really add any tentative weight to the rejection of the null hypothesis.

6.6 Analysis between the second independent variable, work experience and the dependant variable entrepreneur success

The work experience variable was broken into the following items:

- Starting the business in the same field as their previous employ
- Years of experience with previous employ
- Opinion of the respondent regarding whether the previous employer was considered to be a market leader.
- Years of experience in the following business function areas, prior to starting their own businesses in the following areas:
    - Finance
    - Marketing
    - Human resources
    - Legal
    - Production/ operations and
    - Information technology
- Experience knowledge gained from the previous employer in the following areas:
    - Supplier chains
    - Customer networks
    - Competition knowledge
    - Market knowledge and
    - Product / process knowledge

The dependent variable entrepreneur success was collapsed into two categories: successful and less successful entrepreneurs, as previously described.

Measures of association tests as previously described, were conducted between the various success items versus the various business knowledge items.

Only those tests that showed any significance where reported. Although phi co-efficients, contingency co-efficient and Cramer's V tests where conducted, only the chi square values are presented in the tables.

Table 43 Measures of association between successful and less successful entrepreneurs in terms of their previous employment

Variable	χ Square	P Value
Sales Turnover	2.9025	0.0884**
Total Asset Turnover	2.5533	0.1101
Debt Ratio	9.0158	0.0027*
Profit Margin Ratio	2.1735	0.1404

*   Significance at 0.05%

** Significance at 0.10%

Entrepreneurs where asked if they had started their business in the same field as their previous employ and then compared to the various growth items and financial ratios.

The analysis of the bivariate tables, showed that 69% of the entrepreneurs stated that they had followed a "path dependent" route.

A total of 31% of the respondents did not start their business in the same field as their previous employ.

Table 44 Bivariate table showing the spread of the path dependency of successful and less successful entrepreneurs in terms of their debt ratio

	Path Dependant	Non Path Dependant
Less Successful Entrepreneurs	17	18
Successful Entrepreneurs	101	34

Of the total sample size of one hundred and seventy (170), a total of one hundred and thirty five (135) respondents fell into the successful entrepreneur category of those who started their businesses in the same field as their previous employ, in terms of debt ratio. This translates to approximately 79%.

The spread of the successful entrepreneurs who did start their businesses in the same field as their previous employ, when compared to their debt ratio was as follows:

- Category 1 (Path Dependant)   74.81% and
- Category 2 (Non path dependant)   25.19%

A total of thirty-five (35) respondents fell into the less successful entrepreneur category of those who started their businesses in the same field as their previous employ, in terms of debt ratio. This translates to approximately 21%.

The spread of the less successful entrepreneurs who did start their businesses in the same field as their previous employ, when compared to their debt ratio was as follows:

- Category 1 (Path Dependant)   48.57 % and
- Category 2 (Non path dependant)   51.43 %

The debt ratio showed significance at a level of 5%. Further analysis of this item revealed that, sixty nine percent 69% of the respondents who stated that they had started their businesses in the same field as their previous employ, 85% of the respondents fell into the successful category.

Sales turn over showed significance at a level of ten percent.
These results are reasonably significant in that it was expected that more of the growth items and financial ratios would have produced significant results.
This is evident in the p values of chi-square, the other measure of association test, namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test.

The Fisher Exact Test shows some support for rejecting the null hypothesis because its debt ratio p value is extremely small.

Although successful entrepreneurs had started a business in the same field as their previous employ, they showed limited statistical significance when compared to the growth items and financial ratios.

These results do however add a somewhat tentative weight to the rejection of the null hypothesis.

Table 45 Measures of association between the sales turnover of successful and less successful entrepreneurs in terms of their years of experience prior to staring their businesses in the various business function areas

	Mahalanbis	Hotteling	F	P
	D square	T Square	Value	Value
	1.0042	13.1482	2.0969	0.0591**
	Levene F	P	Pooled	P
Variable	For variability	Value	T	Value
Marketing	4.84	0.0298*	-1.87	0.0645
Production/oper ations	2.28	0.1342	-1.66	0.0991

* Significance at 0.05%

** Significance at 0.10%

The sales turnover success variable was collapsed into two categories, successful and less successful entrepreneurs.
Successful entrepreneurs were entrepreneurs who had indicated that they had shown growth over the past three years.

Less successful entrepreneurs had indicated a decline or state of no growth in the sales turnover.

When both groups where compared to one another the p value showed significance at a 10% level of significance. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforces the p value result. These results clearly indicate a significant difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' sales turnover results were then compared to their years of experience in the various business function areas, prior to establishing their own businesses.

The variable "years of marketing experience" showed a level of significance at a level of 5%. It is also significant that the other business function areas did not show any significance with the "sales turnover" variable.

Further analysis of the variable "years of marketing experience" showed a mean of 7.339 years and a standard deviation of 7.0447, and a range of 31 years. This is significant in that it indicates a direct relation between years of experience in the marketing field prior to establishing their own businesses, in relation to sales turnover.

This result strengthens the weight to reject the null hypothesis.

Table 46 Measures of association between the profit of successful and less successful entrepreneurs in terms of their years of experience prior to staring their businesses in the various business function areas

	Mahalanbis	Hotteling	F	P
	D square	T Square	Value	Value
	0.3729	8.3429	1.3306	0.2496
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Legal	11.47	0.0010 *	-1.60	0.1122
Production/operations	2.73	0.1010	-1.07	0.2865

* Significance at 0.05%

** Significance at 0.10%

The profit success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs where entrepreneurs who had indicated that they had shown growth over the past three years.

Less successful entrepreneurs had indicated a decline or state of no growth in profit.

When both groups where compared to one another the p value showed no significance. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results did not clearly indicate a significant difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' profit results were then compared to their years of experience in the various business function areas, prior to establishing their own businesses.

The variable "years of legal experience" showed a level of significance at a level of five percent 5%. It is also significant that the other business function areas did not show any significance with the "profit" variable.

Further analysis of the variable "years of legal experience" showed a mean of 0.47457 years, a standard deviation of 1.8934 and a range of 10 years.

This is significant in that it indicates a direct relationship between years of experience in the legal field in relation to profit. This could be for a variety of reasons, including meeting the various legal requirements.

This result strengthens the weight to reject the null hypothesis.

Table 47 Measures of association between the employment trend of successful and less successful entrepreneurs in terms of their years of experience prior to starting their businesses in the various business function areas

	Mahalanbis	Hotteling	F	P
	D square	T Square	Value	Value
	0.2399	7.0776	1.1288	0.3504
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Marketing	0.75	0.3879	-0.31	0.7553
Human Resources	1.80	0.1827	0.76	0.4463
Production/operations	0.88	0.3491	-2.11	0.0367

* Significance at 0.05%

** Significance at 0.10%

The "employment " success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who had indicated that they had shown growth over the past three years.

Less successful entrepreneurs had indicated a decline or state of no growth in sales growth compared to competitors.

When both groups where compared to one another there was no statistical significance found. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results did not indicate a significant difference between successful and less successful entrepreneurs in terms of employment.

Both successful and less successful entrepreneurs' "employment" results were then compared to their years of experience in the various business function areas, prior to establishing their own businesses.

It is significant that none of the "years of experience" variables show any significance with employment.

This is significant in that it indicates that there was no direct relation between years of experience in any of the business function areas in relation to the "employment" variable.

This result weakens the weight to reject the null hypothesis.

Table 48 Measures of association between the sales growth compared to competitors of successful and less successful entrepreneurs in terms of their years of experience prior to starting their businesses in the various business function areas

	Mahalanbis D square	Hotteling T Square	F Value	P Value
	0.6525	19.1990	3.0619	0.0082*
	Levene F For variability	P Value	Pooled T	P Value
Variable				
Human Resources	8.08	0.0053*	-1.51	0.1329
Legal	3.00	0.0857**	-0.93	0.3533

* Significance at 0.05%

** Significance at 0.10%

The "sales growth compared to competitors" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs where entrepreneurs who had indicated that they had shown growth over the past three years.

Less successful entrepreneurs had indicated a decline or state of no growth in sales growth compared to competitors.

When both groups were compared to one another the p value showed statistical significance at 5%. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results clearly indicate a significant difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "sales growth compared to competitors" results were then compared to their years of experience in the various business function areas, prior to establishing their own businesses.

The variable "years of human resources experience" showed a level of significance at a level of 5%. and the variable "years of legal experience" showed a level of significance at a level of 10%. It is also significant that the other business function areas did not show any significance with the "sales growth compared to competitors" variable.

Further analysis of the variable "years of human resources experience" showed a mean of 1.4915 years and a standard deviation of 3.1262 and a range of 12 years.

The variable "years of legal experience" showed a mean of 0.47457 years and a standard deviation of 1.8934 and a range of 10 years.

This is significant in that it indicates a direct relation between years of experience in the human resources and legal field in relation to the "sales growth compared to competitors" variable.

This result strengthens the weight to reject the null hypothesis.

Table 49 Measures of association between the market value growth compared to competitors of successful and less successful entrepreneurs in terms of their years of experience prior to starting their businesses in the various business function areas

	Mahalanbis	Hotteling	F	P
	D Square	T Square	Value	Value
	0.7136	20.7561	3.3102	0.0049*
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Human Resources	4.24	0.0417*	-1.100	0.2728
Information Technology	6.17	.0.0144*	-2.210	0.0294

*   Significance at 0.05%

** Significance at 0.10%

The "market value growth compared to competitors" success variable was collapsed into two categories: successful and less successful entrepreneurs. Successful entrepreneurs were entrepreneurs who had indicated that they had shown growth over the past three years.

Less successful entrepreneurs had indicated a decline or state of no growth in the market growth compared to competitors.

When both groups were compared to one another the p value showed statistical significance at 5%. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results clearly indicate a significant difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "market value growth compared to competitors" results were then compared to their years of experience in the various business function areas, prior to establishing their own businesses.

The variable "years of human resources experience" and the variable "years of information technology experience" showed a level of significance at a level of 5%.

It is also significant that the other business function areas did not show any significance with the entrepreneurs' "market value growth compared to competitors" variable.

Further analysis of the variable "years of human resources experience" showed a mean of 1.4915 years, a standard deviation of 3.1262 and a range of 12 years.

The variable "years of information technology experience" showed a mean of 2.6779 years, a standard deviation of 3.9524 and a range of 15 years.

This is significant in that it indicates a direct relation between years of experience in the human resources and information technology field in relation to the "market value growth compared to competitors " variable.

This result strengthens the weight to reject the null hypothesis.

Table 50 Measures of association between the current ratio of successful and less successful entrepreneurs in terms of their years of experience prior to starting their businesses in the various business function areas

	Mahalanbis	Hotteling	F	P
	D Square	T Square	Value	Value
	0.8990	17.7124	2.8248	0.0135*
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Marketing	5.34	0.0226*	-2.430	0.0166*
Legal	15.90	0.0001*	2.070	0.0409*
Production/operations	4.36	0.0390*	-1.500	0.1351
Information Technology	4.42	0.0378*	0.970	0.3332

*   Significance at 0.05%

**   Significance at 0.10%

The "current ratio" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups were compared to one another, the p value showed statistical significance at 5%. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results clearly indicate a significant difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "current ratio" results were then compared to their years of experience in the various business function areas, prior to establishing their own businesses.

The following variables showed a level of significance at a level of 5%:

- years of marketing experience
- years of legal experience
- years of production/operations experience and
- years of information technology experience.

Further analysis of the variable "years of marketing experience" showed a mean of 1.4915 years, a standard deviation of 3.1262 and a range of 12 years.

The variable "years of legal experience" showed a mean of 0.47457 years, a standard deviation of 1.8934 and a range of 10 years.

The variable "years of production/operations experience" showed a mean of 9.0084 years, a standard deviation of 7.5577 and a range of 27 years.

The variable "years of information technology experience" showed a mean of 2.6779 years, a standard deviation of 3.9524 and a range of 15 years.

This is significant in that it indicates a direct relation between years of experience in the marketing, legal, production/operations and information technology field in relation to the "current ratio" variable.

These results strengthen the weight to reject the null hypothesis.

Table 51 Measures of association between the fixed asset turnover ratio of successful and less successful entrepreneurs in terms of their years of experience prior to starting their businesses in the various business function areas

	Mahalanbis D Square	Hotteling T Square	F Value	P Value
	0.1979	4.4281	0.7062	0.6452
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Marketing	2.28	0.1336	-1.240	0.2181
Information Technology	6.33	0.0132*	0.890	0.3751

* Significance at 0.05%

** Significance at 0.10%

The "fixed asset turnover ratio" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups were compared to one another, no statistical significance was shown. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results clearly indicate no significant difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "fixed asset turnover ratio" results were then compared to their years of experience in the various business function areas, prior to establishing their own businesses.

The variable "years of information technology experience" showed a level of significance at a level of 5%.

It is also significant that the other business function areas did not show any significance with the entrepreneurs' "fixed asset turnover ratio" variable.

Further analysis of the variable "years of information technology experience" showed a mean of 2.6779 years, a standard deviation of 3.9524 and a range of 15 years.

This is significant in that it indicates a direct relation between years of experience in the information technology field in relation to the "fixed asset turnover ratio" variable.

This result adds some weight to reject the null hypothesis.

Table 52 Measures of association between the total asset turnover ratio of successful and less successful entrepreneurs in terms of their years of experience prior to starting their businesses in the various business function areas

	Mahalanbis	Hotteling	F	P
	D Square	T Square	Value	Value
	0.2782	5.7922	0.9238	0.4808
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Production/operations	0.00	0.9738	-1.880	0.0623**
Information Technology	3.91	0.0505**	0.980	0.3286

*   Significance at 0.05%

** Significance at 0.10%

The "total asset turnover ratio " success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups were compared to one another, no statistical significance was found. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results clearly indicate no significant difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "total asset turnover ratio " results were then compared to their years of experience in the various business function areas, prior to establishing their own businesses.

The variable "years of information technology experience" showed a level of significance at a level of 10%.

It is also significant that the other business function areas did not show any significance with the entrepreneurs' "total asset turnover ratio" variable.

Further analysis of the variable "years of information technology experience" showed a mean of 2.6779 years, a standard deviation of 3.9524 and a range of 15 years.

This is significant in that it indicates a direct relation between years of experience in the information technology field in relation to the "total asset turnover ratio" variable.

This result adds some weight to reject the null hypothesis.

Table 53 Measures of association between the debt ratio of successful and less successful entrepreneurs in terms of their years of experience prior to starting their businesses in the various business function areas

	Mahalanbis	Hotteling	F	P
	D Square	T Square	Value	Value
	0.6213	9.0402	1.4418	0.2051
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Human Resources	9.55	0.0025*	1.920	0.0572**
Legal	8.42	0.0044*	1.810	0.0732**
Information Technology	2.73	0.1011	-0.900	0.3719

* Significance at 0.05%

** Significance at 0.10%

The "debt" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Less successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups where compared to one another no statistical significance was found. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results clearly indicate no significant difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "debt ratio" results were then compared to their years of experience in the various business function areas, prior to establishing their own businesses.

The variables "years of human resources experience" and "years of legal experience" showed a level of significance at a 5% level.

It is also significant that the other business function areas did not show any significance with the "debt ratio" variable.

Further analysis of the variable "years of human resources experience" showed a mean of 1.4915 years, a standard deviation of 3.1262 and a range of 12 years.

The variable "years of legal experience" showed a mean of 0.47457 years, a standard deviation of 1.8934 and a range of 10 years.

This is significant in that it indicates a direct relation between years of experience in the human resources and information technology field in relation to the "debt ratio" variable.

This result adds some weight to reject the null hypothesis.

Table 54 Measures of association between the profit margin ratio of successful and less successful entrepreneurs in terms of their years of experience prior to starting their businesses in the various business function areas

	Mahalanbis	Hotteling	F	P
	D Square	T Square	Value	Value
	0.5526	12.3628	1.9717	0.0757**
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Human Resources	9.79	0.0022*	1.720	0.0877
Legal	2.55	0.1131	-0.810	0.4214
Information Technology	2.98	0.0867**	1.270	0.2070

*   Significance at 0.05%

** Significance at 0.10%

The "profit margin ratio" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups where compared to one another the statistical significance was shown at the 10% level. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforces the p value result.

These results indicate a significant difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "profit margin ratio" results were then compared to their years of experience in the various business function areas, prior to establishing their own businesses.

The variable "years of human resources experience" showed a level of significance at a level of 5%. The variable "years of information technology experience" showed a level of significance at a level of 10%.

It is also significant that the other business function areas did not show any significance with the entrepreneurs' "profit margin ratio" variable.

Further analysis of the variable "years of human resources experience" showed a mean of 1.4915 years, a standard deviation of 3.1262 and a range of 12 years.

This is significant in that it indicates a direct relation between years of experience in the human resources field in relation to the "profit margin ratio" variable.

This result adds some weight to reject the null hypothesis.

Table 55 Measures of association between the return on assets ratio of successful and less successful entrepreneurs in terms of their years of experience prior to starting their businesses in the various business function areas

	Mahalanbis D Square	Hotteling T Square	F Value	P Value
	0.5341	13.1493	2.0971	0.0591**
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Marketing	3.99	0.0481*	-1.430	0.1546
Human Resources	11.20	0.0011*	1.740	0.0841**
Legal	5.34	0.0225*	1.110	0.2706
Production/operations	3.88	0.0513**	-1.650	0.1024
Information Technology	3.35	0.0696**	1.400	0.1653

* Significance at 0.05%

** Significance at 0.10%

The "return on assets ratio" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups were compared to one another the statistical significance was shown at the 10% level. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results indicate a significant difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "return on assets ratio" results where then compared to their years of experience in the various business function areas, prior to establishing their own businesses.

The following variables showed a level of significance at a level of 5%:

- years of marketing experience
- years of human resources experience and
- years of legal experience

The following variables showed a level of significance at a level of 10%:

- years of production/operations experience and
- years of information technology experience.

Further analysis of the variable "years of marketing experience" showed a mean of 1.4915 years, a standard deviation of 3.1262 and a range of 12 years.

The variable "years of human resources experience" showed a mean of 1.4915 years, a standard deviation of 3.1262 and a range of 12 years.

The variable "years of legal experience" showed a mean of 0.47457 years, a standard deviation of 1.8934 and a range of 10 years.

The variable "years of production/operations experience" showed a mean of 9.0084 years, a standard deviation of 7.5577 and a range of 27 years.

The variable "years of information technology experience" showed a mean of 2.6779 years, a standard deviation of 3.9524 and a range of 15 years.

This is significant in that it indicates a direct relation between years of experience in the marketing, human resources, legal, production/operations and information technology field in relation to the "return on asset ratio" variable. This result adds some weight to reject the null hypothesis

Table 56 Measures of association between the return on equity ratio of successful and less successful entrepreneurs in terms of their years of experience prior to starting their businesses in the various business function areas

	Mahalanbis D Square	Hotteling T Square	F Value	P Value
	0.3848	9.4733	1.5108	0.1811
Variable	Levene F for variability	P Value	Pooled T	P Value
Legal	4.16	0.0437*	-1.020	0.3084
Information Technology	7.26	0.0081*	1.66	0.1001

* Significance at 0.05%

** Significance at 0.10%

The "return on equity ratio" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups were compared to one another, no statistical significance was shown. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results indicate no significant difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "return on equity ratio" results were then compared to their years of experience in the various business function areas, prior to establishing their own businesses.

The variables "years of information technology experience" and "years of legal experience" showed a level of significance at a level of 5%. It is also significant

that the other business function areas did not show any significance with the entrepreneurs' "return on equity ratio" variable.

Further analysis of the variable "years of information technology experience" showed a mean of 2.6779 years, a standard deviation of 3.9524 and a range of 15 years.

The variable "years of legal experience" showed a mean of 0.47457 years, a standard deviation of 1.8934 and a range of 10 years.

This is significant in that it indicates a direct relation between years of experience in the legal and information technology field in relation to the "return on equity ratio" variable.

This result adds some weight to reject the null hypothesis.

Table 57 Measures of association between the sales turnover of successful and less successful entrepreneurs in terms of their years of experience with a previous employer prior to starting their businesses in the same field

	Mahalanbis	Hotteling	F	P
	D Square	T Square	Value	Value
	0.2784	3.6448	3.6448	0.0587**
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Sales Turnover	0.42	0.5179	-1.910	0.0587

*   Significance at 0.05%

**   Significance at 0.10%

Only entrepreneurs who indicated that they had started a business in the same field as their previous employ (path dependant) were asked to indicate how

many years of work experience they had with this employer, prior to commencing the establishment of their own businesses.

Of the total entrepreneurs who took part (n=181), a total of 118 entrepreneurs were found to be path dependant. Further analysis of this variable showed a mean of 9.7457 years, a standard deviation of 4.5652 and a range of 22 years.

The "sales turnover " success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups were compared to one another, statistical significance was shown at a level of 10%. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results indicate a notable difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "sales turnover" results were then compared to their years of experience with the path dependant employer prior to establishing their own businesses.

The variable "sales turnover" did not show statistical significance.

Further analysis of the variable "sales turnover" showed a mean of 1.8729, a standard deviation of 0.33452 and a range of 1.

This result does not add weight to rejection of the null hypothesis.

Table 58 Measures of association between the profit of successful and less successful entrepreneurs in terms of their years of experience with a previous employer prior to starting their businesses in the same field

	Mahalanbis D Square	Hotteling T Square	F Value	P Value
	0.0084	0.1871	0.1871	0.6661
Variable	Levene F for variability	P Value	Pooled T	P Value
Profit	0.31	0.5809	-0.430	0.6661

* Significance at 0.05%

** Significance at 0.10%

The "profit" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups were compared to one no statistical significance was shown.

The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results indicate no notable difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "profit" results were then compared to their years of experience with the path dependant employer prior to establishing there own businesses.

The variable "profit" did not show statistical significance.

Further analysis of the variable "profit" showed a mean of 1.7457 and a standard deviation of 0.43729 and a range of 1.

This result does not add weight to rejection of the null hypothesis

Table 59 Measures of association between the employment trend of successful and less successful entrepreneurs in terms of their years of experience with a previous employer prior to starting their businesses in the same field

	Mahalanbis	Hotteling	F	P
	D Square	T Square	Value	Value
	0.0066	0.1955	0.1955	0.6592
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Employment	0.28	0.5997	-0.440	0.6592

* Significance at 0.05%

** Significance at 0.10%

The "employment" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups were compared to one another, no statistical significance was shown. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results indicate no notable difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "employment" results were then compared to their years of experience with the path dependant employer prior to establishing their own businesses.

The variable "employment" did not show statistical significance.

Further analysis of the variable "employment" showed a mean of 1.5, a standard deviation of 0.50213 and a range of 1.

This result does not add weight to rejection of the null hypothesis.

Table 60 Measures of association between the sales growth compared to competitors trend of successful and less successful entrepreneurs in terms of their years of experience with a previous employer prior to starting their businesses in the same field

	Mahalanbis	Hotteling	F	P
	D Square	T Square	Value	Value
	0.0042	0.1243	0.1243	0.7251
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Sales growth compared to competitors	1.13	0.2893	-0.350	0.7251

*   Significance at 0.05%

** Significance at 0.10%

The "sales growth compared to competitors" success variable was collapsed into two categories: successful and less successful entrepreneurs. Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups where compared to one another, no statistical significance was shown. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results indicate no notable difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "sales growth compared to competitors" results where then compared to their years of experience with the path dependant employer prior to establishing their own businesses.

The variable "sales growth compared to competitors" did not show statistical significance.

Further analysis of the variable "sales growth compared to competitors" showed a mean of 1.5254, a standard deviation of 0.50148 and a range of 1.

This result does not add weight to rejection of the null hypothesis.

Table 61 Measures of association between the market value compared to competitors' trend of successful and less successful entrepreneurs in terms of their years of experience with a previous employer prior to starting their businesses in the same field

	Mahalanbis	Hotteling	F	P
	D Square	T Square	Value	Value
	0.0000	0.0010	0.0010	0.9749
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Market Value compared to competitors	0.14	0.7051	-0.030	0.9749

*   Significance at 0.05%

** Significance at 0.10%

The "market value compared to competitors " success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups where compared to one another, no statistical significance was shown. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results indicate no notable difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "market value compared to competitors" results were then compared to their years of experience with the path dependant employer prior to establishing their own businesses.

The variable "market value compared to competitors" did not show statistical significance.

Further analysis of the variable "market value compared to competitors" showed a mean of 1.5593, a standard deviation of 0.49858 and a range of 1.

This result does not add weight to rejection of the null hypothesis.

Table 62 Measures of association of the current ratio of successful and less successful entrepreneurs in terms of their years of experience with a previous employer prior to starting their businesses in the same field

	Mahalanbis D Square	Hotteling T Square	F Value	P Value
	0.1693	3.3353	3.3353	0.0704**
Variable	Levene F for variability	P Value	Pooled T	P Value
Current Ratio	0.50	0.4791	-1.830	0.0704**

*   Significance at 0.05%

** Significance at 0.10%

The "current ratio" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups where compared statistical significance was shown at a 10% level of confidence. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results indicate weak difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "current ratio" results were then compared to their years of experience with the path dependant employer prior to establishing their own businesses.

The variable "current ratio" showed statistical significance at 5% using the Mann Whitney p value, and significance was shown at 10% using the pooled T, p value.

Further analysis of the variable "current ratio" revealed a mean of 1.7881, a standard deviation of 0.41037 and a range of 1.

This result adds weight to rejection of the null hypothesis.

Table 63 Measures of association of the fixed asset ratio of successful and less successful entrepreneurs in terms of their years of experience with a previous employer prior to starting their businesses in the same field

	Mahalanbis	Hotteling	F	P
	D Square	T Square	Value	Value
	0.0020	0.0456	0.0456	0.8314
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Fixed Asset Turnover	0.08	0.7787	0.210	0.8314

*   Significance at 0.05%

** Significance at 0.10%

The "fixed asset ratio" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups were compared to one another, no statistical significance was shown. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforces the p value result.

These results indicate no notable difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "fixed asset ratio" results were then compared to their years of experience with the path dependant employer prior to establishing their own businesses.

The variable "fixed asset ratio" did not show statistical significance.

Further analysis of the variable "fixed asset ratio" showed a mean of 1.7457, standard deviation of 0.43729 and a range of 1.

This result does not add weight to rejection of the null hypothesis.

Table 64 Measures of association of the fixed asset ratio of successful and less successful entrepreneurs in terms of their years of experience with a previous employer prior to starting their businesses in the same field

	Mahalanbis D Square	Hotteling T Square	F Value	P Value
	0.0052	0.1078	0.1078	0.7433
Variable	Levene F for variability	P Value	Pooled T	P Value
Total Asset Turnover	1.35	0.2471	0.33	0.7433

* Significance at 0.05%

** Significance at 0.10%

The "total asset ratio" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups where compared to one another, no statistical significance was shown. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforces the p value result.

These results indicate no notable difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "total asset ratio" results were then compared to their years of experience with the path dependant employer prior to establishing their own businesses.

The variable "total asset ratio" did not show statistical significance.

Further analysis of the variable "total asset ratio" showed a mean of 1.7712, a standard deviation of 0.42186 and a range of 1.

This result does not add weight to rejection of the null hypothesis.

Table 65 Measures of association of the debt ratio of successful and less successful entrepreneurs in terms of their years of experience with a previous employer prior to starting their businesses in the same field

	Mahalanbis	Hotteling	F	P
	D Square	T Square	Value	Value
	0.0006	0.0092	0.0092	0.9237
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Debt Ratio	0.73	0.3958	-0.10	0.9237

*   Significance at 0.05%

** Significance at 0.10%

The "debt ratio" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Less successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups where compared to one another no statistical significance was shown. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results indicate no notable difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "debt ratio" results were then compared to their years of experience with the path dependant employer prior to establishing their own businesses.

The variable "debt ratio" did not show statistical significance.

Further analysis of the variable "debt ratio" showed a mean of 1.8559, a standard deviation of 0.35265 and a range of 1.

This result does not add weight to rejection of the null hypothesis.

Table 66 Measures of association of the profit margin ratio of successful and less successful entrepreneurs in terms of their years of experience with a previous employer prior to starting their businesses in the same field

	Mahalanbis	Hotteling	F	P
	D Square	T Square	Value	Value
	0.0438	0.9795	0.9795	0.3244
	Levene F	P	Pooled	P
Variable	for variability	Value	T	Value
Profit Margin Ratio	0.14	0.7096	-0.99	0.3244

* Significance at 0.05%

** Significance at 0.10%

The "profit margin ratio" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups where compared to one another, no statistical significance was shown. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results indicate no notable difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "profit margin ratio" results were then compared to their years of experience with the path dependant employer prior to establishing their own businesses.

The variable "profit margin ratio" did not show statistical significance.

Further analysis of the variable "profit margin ratio" showed a mean of 1.7457, a standard deviation of 0.43729 and a range of 1.

This result does not add weight to rejection of the null hypothesis.

Table 67 Measures of association of the profit margin ratio of successful and less successful entrepreneurs in terms of their years of experience with a previous employer prior to starting their businesses in the same field

	Mahalanbis D Square	Hotteling T Square	F Value	P Value
	0.0541	1.3316	1.3316	0.2509
Variable	Levene F for variability	P Value	Pooled T	P Value
Return on Assets	1.36	0.2452	-1.15	0.2509

* Significance at 0.05%

** Significance at 0.10%

The "return on assets ratio" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups were compared to one no statistical significance was shown.

The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results indicate no notable difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "return on assets ratio" results were then compared to their years of experience with the path dependant employer prior to establishing their own businesses.

The variable "return on assets ratio" did not show statistical significance.

Further analysis of the variable "return on assets ratio" showed a mean of 1.7034, a standard deviation of 0.45871 and a range of 1.

This result does not add weight to rejection of the null hypothesis.

Table 68 Measures of association of the return on equity ratio of successful and less successful entrepreneurs in terms of their years of experience with a previous employer prior to starting their businesses in the same field

	Mahalanbis D Square	Hotteling T Square	F Value	P Value
	0.0115	0.2837	0.2837	0.5953
	Levene F for variability	P Value	Pooled T	P Value
Return on Equity	0.21	0.6485	-0.53	0.5953

* Significance at 0.05%

** Significance at 0.10%

The "return on equity ratio" success variable was collapsed into two categories: successful and less successful entrepreneurs.

Successful entrepreneurs were entrepreneurs who indicated an increase over the past three years.

Less successful entrepreneurs had indicated a decline or that the ratio had remained the same.

When both groups were compared to one another, no statistical significance was shown. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

These results indicate no notable difference between successful and less successful entrepreneurs.

Both successful and less successful entrepreneurs' "return on equity ratio" results were then compared to their years of experience with the path dependant employer prior to establishing their own businesses.

The variable "return on equity ratio" did not show statistical significance.

Further analysis of the variable "return on equity ratio" showed a mean of 1.7034, a standard deviation of 0.45871 and a range of 1.

This result does not add weight to rejection of the null hypothesis.

Table 69 Measures of association in the perception of the previous employer being a market leader of successful and less successful entrepreneurs in terms of their years of experience with a previous employer prior to starting their businesses in the same field

	Mahalanbis D Square	Hotteling T Square	F Value	P Value
	0.0511	1.3351	1.3351	0.2503
	Levene F for variability	P Value	Pooled T	P Value
Variable				
Market leader	0.63	0.4284	1.16	0.2503

* Significance at 0.05%

** Significance at 0.10%

The "market leader" work experience variable was collapsed into two categories: those entrepreneurs who thought of their previous employer as being a market leader and those who did not.

When both groups were compared to one another no statistical significance was shown. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.
These results indicate no notable difference between entrepreneurs who had worked for employers that where market leaders and those who had not.

Both groups of entrepreneurs' "perception of their previous employer's market leadership status" results were then compared to their years of experience with the path dependant employer prior to establishing their own businesses.
Both groups did not show statistical significance.

Further analysis of the variable "perception of their previous employer's market leadership status" showed a mean of 1.6695, a standard deviation of 0.47240 and a range of 1.

This result does not add weight to rejection of the null hypothesis.

Table 70 Measures of association between the growth items of path dependant successful and less successful entrepreneurs in terms of their years of experience per business function area

	Mahalanbis	Hotteling	F	P
	D Square	T Square	Value	Value
	0.4151	11.557	1.8431	.0971**
	Levene F	P	Pooled	P
Variable	For variability	Value	T	Value
Human Resources	2.67	0.1050	-0.98	0.3306

*   Significance at 0.05%

** Significance at 0.10%

Entrepreneurs were asked if they had started their businesses in the same field as their previous employ and then their various growth items results were associated with their years of experience and measured.

A level of significance was observed between the two groups at a level of 10%. No significant level was observed when the two entrepreneur groups were compared to the years of experience per business categories.
Only the years of experience in the human resources field showed significance just above the 10% level.

These results do not add any weight to the rejection of the null hypothesis.

Table 71 Measures of association between the financial ratios of path dependant successful and less successful entrepreneurs in terms of their years of experience per business function area

	Mahalanbis	Hotteling	F	P
	D Square	T Square	Value	Value
	0.4257	9.5239	1.5189	0.1784
	Levene F	P	Pooled	P
Variable	For variability	Value	T	Value
Marketing	8.11	0.0052*	2.25	0.0261*
Human Resources	7.20	0.0084*	-1.34	0.1829

*   Significance at 0.05%

Successful and less successful path dependant entrepreneurs' financial ratios results were associated with their years of experience per business area and measured.

No level of significance was observed between the two groups of entrepreneurs. The Mahalanbis D square, Hotteling T square and the ANOVA F value results reinforce the p value result.

Marketing and human resources years of experience registered a level of significance at a level of 5% against the successful and less successful path dependant entrepreneurs' groups.

The variable "marketing years of experience" showed a mean of 9.80 and a standard deviation of 8.7746, from a total sample of thirty (30) for the less successful path dependant entrepreneurs.
Successful path dependant entrepreneurs showed a mean of 6.500 and a standard deviation of 6.1867, from a total sample of eighty-eight (88).

The variable "human resources years of experience" showed a mean of 0.8333 and a standard deviation of 2.3647, from a total sample of thirty (30) for the less successful path dependant entrepreneurs.

Successful path dependant entrepreneurs showed a mean of 1.7159 and a standard deviation of 3.3285, from a total sample of eighty eight (88).

Theses results add tentative weight to rejection of the null hypothesis.

Table 72 Measures of association between path dependant successful and less successful entrepreneurs in terms of their overall level of experience per business function area versus their growth items

Variable	χ Square	P Value
Finance	4.4256	0.0354*
Marketing	3.2490	0.0715**
Production/operations	7.6683	0.0056*

* Significance at 0.05%

** Significance at 0.10%

The level of experience per function business area was collapsed into two categories:

- Category 1 zero to four years experience (0-4) and
- Category 2 five years (5+) and more.

In terms of the growth items, path dependent successful and less successful entrepreneurs were collapsed into two categories:

- Category 1 those that showed growth and
- Category 2 those that had not shown growth.

Path dependent successful entrepreneurs and less successful entrepreneurs showed statistical significance when their growth items were compared to their years of experience per business function area.

Finance and production/operations showed significance at a level of 5%, and marketing at a level of 10%.

This is evident in the p values of chi-square, the other measure of association test namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test.

The analysis of the bivariate table, showed that both the path dependant successful entrepreneurs and less successful entrepreneurs, in terms of their financial ratios, had practically the same overall level of education per business subject ratio, which is significant.

Table 73 Bivariate table showing the spread of the path dependant successful and less successful growth entrepreneurs in terms of their years of experience in finance

	0-4 Years Experience	5 + years of experience
Less Successful Entrepreneurs	30	43
Successful Entrepreneurs	10	35

The total response distribution in terms of the years of financial experience versus the growth items was as follows:

- Category 1 zero to four years experience (0-4)   33.90%
- Category 2 five years (5+) and more   66.10%

Of the total sample size of one hundred and eighteen (118), a total of forty-five (45) respondents fell into the successful growth entrepreneur category, in terms of their financial years of experience. This translates to approximately 38%.

A total of seventy three (73) respondents fell into the less successful growth entrepreneur category in terms of their financial years of experience. This translates into approximately 62%.

Table 74 Bivariate table showing the spread of the path dependant successful and less successful growth entrepreneurs in terms of their years of experience in production/operations

	0-4 Years Experience	5 + years of experience
Less Successful Entrepreneurs	31	42
Successful Entrepreneurs	8	37

The total response distribution in terms of the years of production/operations experience versus the growth items was as follows:

- Category 1 zero to four years experience (0-4)   33.05%
- Category 2 five years (5+) and more   66.95%

Of the total sample size of one hundred and eighteen (118), a total of forty-five (45) respondents fell into the successful growth entrepreneur category, in terms of their production/operations years of experience. This translates to approximately 38%.

A total of seventy-three (73) respondents fell into the less successful growth entrepreneur category in terms of their production/operations years of experience. This translates into approximately 62%.

These results do not really add any tentative weight to the rejection of the null hypothesis.

Table 75 Measures of association between path dependant successful and less successful entrepreneurs in terms of their overall level of experience per business function area versus their financial ratios

Variable	χ Square	P Value
Human resources	1.6715	0.1961

The level of experience per function business area was collapsed into two categories:

- Category 1 zero to four years experience (0-4) and
- Category 2 five years (5+) and more.

In terms of the financial ratios, path dependent successful and less successful entrepreneurs were collapsed into two categories:

- Category 1 those who showed increases in all their ratios (except the debt ratio) and
- Category 2 those who had not shown a decrease in all their ratios (except the debt ratio).

Path dependent successful entrepreneurs and less successful entrepreneurs showed no statistical significance when their financial ratios were compared to their years of experience per business function area.

This is evident in the p values of chi-square, the other measure of association test namely the phi co-efficients, contingency co-efficient and Cramer's V values, supported the chi-square test.

6.7 Descriptive analysis of path dependant entrepreneurs and knowledge gained from previous employ

A total of 68% of the respondents indicated that they had been employed in the same field as their previous employ. Of these, 65% indicated that in their opinion they considered their previous employer as a market leader in their field.

Respondents were then asked how they would describe their knowledge gains from their work experience with this previous employer in the following areas:

- Supplier chains
- Customer networks
- Competition knowledge
- Market knowledge and
- Product / process knowledge

It is significant from table 76 to table 79 that entrepreneurs indicated that they had assimilated a vast amount of knowledge in the areas of supplier chains, customer networks, competition knowledge, market knowledge and product / process knowledge.

Over 80% of the responses fell into the significant and absolute knowledge gains in the various areas.

Table 76 Experience knowledge gained from previous employer in terms of supplier chains

Supplier Chains	Percent
None	0.81
Very little	0.81
Slight	4.88
Significant	57.72
Absolute	35.77

Table 77 Experience knowledge gained from previous employer in terms of customer networks

Customer Networks	Percent
None	0.00
Very little	0.81
Slight	8.94
Significant	57.72
Absolute	35.52

Table 78 Experience knowledge gained from previous employer in terms of competition knowledge

Competition Knowledge	Percent
None	0.00
Very little	0.81
Slight	8.94
Significant	57.72
Absolute	35.52

Table 79 Experience knowledge gained from previous employer in terms of market knowledge

Market Knowledge	Percent
None	0.81
Very little	0.81
	5.69
Significant	52.85
Absolute	39.84

Table 80 Experience knowledge gained from previous employer in terms of product/process knowledge

Product / Process Knowledge	Percent
None	0.82
Very little	1.64
Slight	
Significant	40.98
Absolute	53.28

Chapter 7

Research limitations

7.1 Introduction to the limitations of the research

While several studies have focused upon the personality and traits of entrepreneurs, the performance of entrepreneurs (i.e. the entrepreneur rather than the firm as the unit of analysis) has received limited research attention.

Because of the heterogeneous nature of entrepreneurship in terms of motivational diversity, different types of entrepreneurs, and organisational forms, measuring entrepreneurial performance or success is inevitably a challenging task.

7.2 Measuring less successful entrepreneurs and enterprise failure

Wiklund (1999) quotes Venkataraman (1997) and suggests that in order to distinguish what is truly attributable to the individual entrepreneur from the idiosyncrasies of the particular opportunity, the individuals must be studied across several new enterprise efforts.
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 in which they currently have an ownership stake.

Wiklund (1999) suggests 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 (Ucbasaran et al, 2001) common in much entrepreneurship research.

Although this study had the tendency to study "successful entrepreneurial ventures" as an important outcome of the entrepreneurial process, the issue of firm exit, which does not necessarily mean failure, was not taken into account. Defining organisational closure or "failure" is a major problem and a variety of definitions have been utilised (Keasey & 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.

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. They believe there may be a need to develop specific models for different types of firm failure. The major problem, however, is being able to obtain appropriate and representative samples of failed and non-failed firms.

Brüdel, Preisendörfer and Ziegler (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 (Ucbasaran et al, 2001).

Environmental influences are relatively minor. While interpretations of environmental effects are tentative in homogeneous samples, the entrepreneur may exhibit higher levels of success under perceptions of higher stress and complexity. Increased turbulence, while not indicating the entrepreneur is less successful, corresponds to the firm's being less competitive, having lower levels of strategy, using less networking, and exhibiting lower levels of technology. A

munificent environment provides a slightly positive influence on the entrepreneur (Hisrich, 2000).

7.3 Lack of audited financial statements

Another limitation relates to the fact that this study did not ask for respondents to reveal performance information during the survey. There was a reluctance on the part of respondents to hand over financial statements for a variety of reasons.

Therefore performance indications by the entrepreneurs cannot be cross-referenced with actual audited financial statements. While one may conclude on the direction of the responses received on the various items, it is impossible to measure the actual magnitude of the responses.

The lack of financial statements, the item mentioned in Cooper, Gimeno-Gascon, and Woo's (1994) work, that found capital availability as a predictor of firm performance, and that consequently, it was important to control for the influence of financial capital on firm-level performance, proved impossible to control in this study.

There is also a risk that entrepreneurs with poorer performance are more reluctant to divulge performance information, which in turn may bias the results. Naturally the results obtained may suffer from survivor bias (Wiklund, 1999).

Although performance questions were intended to cover the last three years, the "halo" effect could possibly influence the respondents' responses.

Chapter 8

Findings and conclusions

8.1 Introduction

Two alternative hypotheses were put forward and, from the available literature, a tentative positive relationship established between business knowledge and work experience contributing to entrepreneurial success. This assumption was then tested through an empirical survey.

These findings and conclusions chapter will try to provide a theoretical framework describing the entrepreneurial success process based specifically on enterprise performance and not on entrepreneurial behaviour. This study attempted to explore the connection between business knowledge and work experience as antecedents towards explaining entrepreneurial success.

8.2 Statistical analyses

The statistical analysis was divided into three groups.

- Firstly entrepreneurial satisfaction was measured against the other growth items and financial ratios.
- Secondly, the first independent variable, business knowledge, was measured against the dependent variable entrepreneur success, in terms of their growth items and financial ratios.
- Thirdly, the second independent variable, work experience, was measured against the dependent variable entrepreneur success, in terms of their growth items and financial ratios.

8.3 Descriptive statistical analyses

From the descriptive statistics one can accurately state that the sample was heterogeneous in every respect, from the entrepreneur's age, gender, firm's legal entity and the firm's main economic activity.

8.4 Entrepreneurial satisfaction measured against the other growth items and financial ratios

In the first group of analysis, it was found that successful and less successful entrepreneurs had the same level of commitment towards their businesses. Of all the success items only employment growth showed some significance in terms of successful entrepreneurs.

Although these results where at first puzzling, entrepreneurial success probably has little relation in so far as the entrepreneurs' commitment towards their business is concerned. The successful and less successful entrepreneurs' business and personal time split during a normal week result showed no significance, which further strengthened the notion, that in general entrepreneurs have a balanced personal versus business life. In general entrepreneurs spent between 50 and 69% of their time involved in some business activity during a normal working week.

Interestingly the vast majority of entrepreneurs (91%) experienced an increase in their personal wealth since their inception of their businesses. These results dispel many of the entrepreneurial myths (Timmons, 1994:23) and correlate to the findings of various researchers.

These entrepreneurial myths included the following:

- Entrepreneurs are born, not made
- Anyone can start a business
- Entrepreneurs are gamblers
- Entrepreneurs are gamblers
- Entrepreneurs want the whole show to themselves
- Entrepreneurs are their own bosses and completely independent
- Entrepreneurs work longer and harder than managers in big companies
- Entrepreneurs experience a great deal of stress and pay a high price
- Starting a business is risky and often ends in failure
- Money is the most important start-up ingredient
- Entrepreneurs should be young and energetic
- Entrepreneurs are motivated solely by the quest for the almighty dollar

- Entrepreneurs seek power and control over others

- If an entrepreneur is talented, success will happen in a year or two

- Any entrepreneur with a good idea can raise venture capital and

- If an entrepreneur has enough start-up capital. He or she can't miss.

8.5 First independent variable, business knowledge, measured against the dependent variable entrepreneur success, in terms of their enterprise's growth items and financial ratios

In the second group of analysis, successful and less successful entrepreneurs, in terms of their success items, were measured against the various items constituting the business knowledge variable.

It was found that the general level of education showed numerous success items at a 10% α significance level, while profit and total asset turnover showed a statistical significance at a 5% α level. In terms of the above success items successful entrepreneurs had indicated a 78% tertiary level of education. This clearly indicates a strong relationship between education and entrepreneurial success.

It was found that the membership of a professional showed numerous success items at a 5% α significance level. These included sales turnover, profit, return on sales and return on equity growth. These results are contradictory, in terms of the vast amount of literature supporting entrepreneurial networking, approximately 64% of the successful entrepreneurs did not belong to a professional body. It is important to note that this result however, does not take into account informal networking practices followed by the successful entrepreneurs.

The entrepreneurs' individual business subjects education levels were then measured against the various success items.

It was found that the level of finance education had a positive association with numerous success items at a 5% α significance level. These included sales

turnover, profit, market value compared to competitors and employment growth and a decline in the debt ratio. These results are consistent with the literature supporting finance as an important business subject. Approximately 55% of the successful entrepreneurs had obtained a diploma or degree in finance.

It was found that the level of marketing education disclosed two success items at a 5% α significance level. These where profit and employment growth. Sales turnover showed at a 10% α level of significance. These results are consistent with the literature supporting marketing as an important business subject. Approximately 56% of the successful entrepreneurs had obtained a diploma or degree in marketing.

It was found that the level of human resources education disclosed four success items at a 5% α significance level. These where sales turnover, profit, fixed asset turnover and total asset turnover growth. These results are consistent with the literature supporting human resources as an important business subject. However, human resources is usually seen as a support function in an organisation. This is possibly why approximately 35% of the successful entrepreneurs had obtained a diploma or degree in human resources.

It was found that the level of education in the legal field disclosed one success item at a 5% α level of significance. This was growth in the market value compared to competitors' item. The level of education in the legal field produced a very low frequency in the tertiary education category. This compelled the statistical test to collapse the level of education into two categories: none and secondary to post graduate category.

These results are consistent with the literature supporting outside assistance and consultation that many entrepreneurs seek to succeed in their businesses

It was found that the level of education in the production/operations field revealed no success items at a 5% or 10% α level of significance. These results are contradictory to what was expected, however it is supported by Timmons

(1994) who argues that entrepreneurs with a technical background would probably be weak in marketing, finance and general management, and vice versa.

It was found that the level of education in the information technology field revealed no success items at a 5% or 10% α level of significance. These results are contradictory to what was expected. This however does not measure the computer literacy successful entrepreneurs might posses, necessary to succeed at his or her business.

8.6 Second independent variable, work experience, measured against the dependent variable entrepreneur success, in terms of their enterprise's growth items and financial ratios

In the third group of analysis, successful and less successful entrepreneurs in terms of their success items where measured against the various items constituting the second independent variable work experience.

It was found that 69% of the entrepreneurs had followed a path dependent route, stressing the importance of gaining experience from the previous employer. Of these approximately 90% had indicated that they had gained significant to absolute knowledge in terms of supplier chains, customer networks, competition knowledge, market knowledge and product/process knowledge.

Path and non-path dependent successful and less successful entrepreneurs where then measured against their business success items.
It was found that the debt ratio was significant at a 5% α level. Sales turnover was significant at a 10% α level. Path dependent successful entrepreneurs comprised of 85% of the sample in terms of the debt ratio. Although this result is significant one would have expected the majority of the success items to show significance at a 5% α level.

Successful and less successful entrepreneurs where then measured in terms of their years of experience prior to starting their businesses in terms of the various business function areas.

Where a significant difference (at a 5% α level) was found between the two groups, successful and less successful entrepreneurs, the following results where found.

Successful entrepreneurs indicated a positive association between sales turnover and years of marketing experience (X 7.33) at a 5% α significance level. The same was found with "sales growth compared to competitors". This item was positively associated to human resources (X 1.49) at a 5% α significance level.

The same was detected with "market value growth compared to competitors". This item was positively associated to human resources (X 1.49) and information technology (X 2.68) success items at a 5% α significance level. The current ratio item was positively associated to marketing (X 7.33), legal (X 0.474), production/operations (X 7.55) and information technology (X 2.68) years of experience.

The profit margin ratio showed differences between the two groups of entrepreneurs at a 10% α significance level. At this level, human resources was positively associated at a 5% α significance level.

The return on assets ratio also showed differences between the two groups of entrepreneurs at a 10% α significance level. At this level, human resources, legal, and marketing years of experience were positively associated at a 5% α significance level.

Notably absent from the above results was "years of experience in finance", which one would have expected to find.

Finally, successful and less successful path dependent entrepreneurs were measured against their years of experience in terms of the various business function areas.

Successful entrepreneurs, in terms of the growth items, who had in excess of five years of financial and production/operations experience prior to commencing business, reported a positive association at a 5% α significance level.

Successful entrepreneurs, in terms of the growth items, who had in excess of five years of marketing experience prior to commencing business, reported a positive association at a 10% significance level.

8.7 Conclusion

From an entrepreneurial perspective, this exploratory thesis suggests that it may be advantageous to provide entrepreneurs and potential entrepreneurs learning models suitable to their domains, and experimental training.

Some of the results although weak, are intuitively acceptable in that as Aldrich & Martinez (2001) note, in an evolutionary field of study, it is not sufficient to imply the existence of selection forces by simply observing the dual outcomes of survival or failure.

Despite some of the significant findings, a large amount of the variance in business knowledge and work experience remains unexplained. This unexplained variance, however, is consistent with other investigations. There is tentative evidence to reject the null hypothesis, however the evidence is not conclusive and further in-depth research will have to be conducted in order to reach a conclusive finding.

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Annexture 1

ECONOMIC AND MANAGEMENT SCIENCES

PhD Entrepreneurship Questionnaire

Student: J C D Barreira (22309323)

Study Leader : Prof. J J van Vuuren

QUESTIONNAIRE

Please note:

This questionnaire will take 30 minutes to complete. We are aware you are busy, and we would be grateful if you could take the time to answer this questionnaire.

This questionnaire is aimed at the company's Owner/s or Managing Director.

Your answers will be treated with the strictest confidence by The University of Pretoria and used solely for this research project. No individual information will be forwarded to any external organisation.

If you would like further information on this project or a copy of the executive summary of this research, please complete the details on the last page .

1.Name: _____ (optional)

Biographical Questions

2. Your age group ?:

❑ > 20 years old

❑ 20-25

❑ 26-35

❑ 36-45

❑ 46-55

❑ 56-65

❑ 66+

3.Year Company Established ☐

4. Your gender ?

❑ Male   ❑ Female

5. Are you the founder of the company?

❑ Yes   ❑ No

6. Do you have an equity stake of at least 10%?

❏ Yes   ❏ No

7. Do you partake in strategic management decisions?

❏ Yes   ❏ No

8. Which category best describes your company's main activity? (Please tick one)

❏ Manufacture   ❏ Retailer   ❏ Wholesaler   ❏ Services

9. Please indicate your firm's legal entity? (Please tick one)

❏ Sole Proprietor   ❏ Close Corporation   ❏ Private Company
❏ Public Company   ❏ Partnership

10. What is your **main** area of business? (Please tick one)

❏ Food Products   ❏ Beverages & Tobacco

❏ Health & Personal Care Products   ❏ Pharmaceuticals

❏ Leisure Goods   ❏ Textiles & Apparel

❏ Leather / Rubber / Plastics Materials & Products   ❏ Glass & Ceramics

❏ Metal Products: Ferrous   ❏ Printing & Publishing

❏ Metal Products: Non-Ferrous   ❏ Fuels & Petroleum

❏ Forestry Products & Paper Furniture & Fixings   ❏ Specialty Chemicals

❏ Data Processing & Computer Software   ❏ Shipbuilding

❏ Computers / Office Machinery Electronics   ❏ Automobiles

❏ Industrial, Commercial Machinery   ❏ Aerospace

❏ Instruments & Control Devices, Medical Equipment

Other (please specify)

_____

Success Questions

11. On a scale of 1 to 5, how would you describe your company's development over the last 3 years in the following areas?

(1-significant decline, 2-decline, 3-remained the same, 4-increase, 5-significant increase)

	1	2	3	4	5
11.1 Sales Turnover	❏	❏	❏	❏	❏
11.2 Profit	❏	❏	❏	❏	❏
11.3 Employment	❏	❏	❏	❏	❏
11.4 Sales growth compared to competitors	❏	❏	❏	❏	❏
11.5 Market value compared to competitors	❏	❏	❏	❏	❏

12. On a scale of 1 to 5, how would you rate your business as an activity in your life?

(1-Not at all important, 2- Of little importance, 3-Occasionally important, 4-Important, 5-Very important)

1	2	3	4	5
❏	❏	❏	❏	❏

13. How would you split your time between Personal time vs. Business time, during a normal working week?

	0-19%	20-49%	50-69%	70-100%
13.1 Personal Time	❏	❏	❏	❏
13.2 Business Time	❏	❏	❏	❏

14. On a scale of 1 to 5, how would you rate your personal wealth since your inception of your business?

(1-significant decline, 2-decline, 3-remained the same, 4-increase, 5-significant increase)

	1	2	3	4	5
	❏	❏	❏	❏	❏

15. On a scale of 1 to 5, how would you describe your company's financial ratios over the last 3 years in the following areas?

(1-significant decline, 2-decline, 3-remained the same, 4-increase, 5-significant increase)

	1	2	3	4	5
15.1 Current Ratio (Current assets/ Current liabilities)	❏	❏	❏	❏	❏
15.2 Fixed Asset Turnover (Sales/Fixed Assets)	❏	❏	❏	❏	❏
15.3 Total Asset Turnover (Sales/Total Assets)	❏	❏	❏	❏	❏
15.4 Debt ratio (Total debt/total assets)	❏	❏	❏	❏	❏
15.5 Profit margin ratio (Net profit/Sales)	❏	❏	❏	❏	❏
15.6 Return on assets (Net profit/Total assets)	❏	❏	❏	❏	❏
15.7 Return on equity (Net profit/Total equity)	❏	❏	❏	❏	❏

Business Knowledge Questions

16. Please indicate your highest level of education? (Please tick one)

❏ Primary (Grade 1- Grade 7)   ❏ Secondary (Grade 8 – Grade 12)

❏ Tertiary (Technikon / University)   ❏ Post Graduate

17. Please indicate if you belong to a professional body?

❏ Yes   ❏ No

18. On a scale of 1 to 5, at what level have you been educated on the following business subjects?

(1-None, 2- Secondary 3-Diploma, 4- Degree, 5-Post Graduate)

	1	2	3	4	5
18.1 Finance	❑	❑	❑	❑	❑
18.2 Marketing	❑	❑	❑	❑	❑
18.3 Human Resources	❑	❑	❑	❑	❑
18.4 Legal	❑	❑	❑	❑	❑
18.5 Production / operations	❑	❑	❑	❑	❑
18.6 Information technology	❑	❑	❑	❑	❑

Experience Questions

19. How many years of experience did you have before starting your business in the following areas?

19.1 Finance

19.2 Marketing

19.3 Human Resources

19.4 Legal

19.5 Production / operations

19.6 Information technology

20. Please indicate if you started your business in the same field as your previous employ?

❑ Yes ❑ No (please skip Q 21, Q 22 & Q 23)

21. How many years of experience did you have in this specific employer?

22. Do you consider this previous employer as being the "market leader"?

❑ Yes ❑ No

23. On a scale of 1 to 5, how would you describe your experience knowledge gains from your previous employ?

(1-none, 2-very little, 3-slight, 4-significant, 5- absolute)

	1	2	3	4	5
23.1 Supplier chains	❑	❑	❑	❑	❑
23.2 Customer networks	❑	❑	❑	❑	❑
23.3 Competition knowledge	❑	❑	❑	❑	❑
23.4 Market knowledge	❑	❑	❑	❑	❑
23.5 Product / process knowledge	❑	❑	❑	❑	❑

Thank you for your co-operation.

Please tick the appropriate box(es) if you would like to:

Receive a copy of the Executive Summary of the Questionnaire results ❑

Assist in further research ❑

E-mail address

THE INFLUENCE OF BUSINESS KNOWLEDGE AND WORK EXPERIENCE, AS ANTECEDENTS TO ENTREPRENEURIAL SUCCESS.

BY

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DEGREE FOR WHICH THE THESIS IS PRESENTED :
PHILOSOPHIAE DOCTOR ENTREPRENEURSHIP

Abstract

This study investigated the role of business knowledge and work experience, as antecedents towards explaining entrepreneurial success.
The encouragement of entrepreneurial activities has been recommended as a way to stimulate economic growth.

On of the most critical issues facing developing countries is to understand where entrepreneurs originate from and what characteristics are relevant to their success. Although entrepreneurs act as catalysts of economic activity for the entire economy many of them fail.

Most entrepreneurs often start a new venture ignorant of many key dimensions of running their businesses and must obtain the necessary information if they are to survive.

Entrepreneurial competency, largely acquired on an individual basis, consists of a combination of skills, knowledge and resources that distinguish an entrepreneur from his or her competitors.

This research study reviewed the two constructs namely entrepreneurial business knowledge and work experience, from the available literature and through scientific empirical research reported their effects on entrepreneurial success.

Entrepreneurial business knowledge refers to the ascribe roles for managerial expertise in entrepreneurial success and entails, to varying degrees marketing, financial management/book-keeping, self-supervision, and, if applicable, the supervision of paid employees or unpaid family workers, among other activities.

Experience refers to the knowledge or ability of an individual gained due to circumstances in a particular job, organisation, or industry. Some researchers have indicated that a lack of business knowledge and/or business experience hinders firm growth and entrepreneurial success.

Despite some of the significant findings, a large amount of the variance in business knowledge and work experience remained unexplained. This unexplained variance, however, was consistent with other investigations.

There was tentative evidence to support the role of business knowledge and work experience, as entrepreneurial success antecedents. However the evidence was not conclusive and further in depth research would have to done in order to reach a conclusive finding.