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Understanding the Influence of Family Context on Entrepreneurial Characteristics

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Abstract

It has been widely established that small businesses fuel the growth and expansion of an economy. Entrepreneurial activities in South Africa are not sufficient to sustain growth that the country requires and a lack of an entrepreneurial mindset and skills have been found to be a significant challenge. The capacity for this country to develop and grow entrepreneurs to feed the growing economy will significantly determine its future.

The purpose of this research paper is to explore the environmental factors that influence the development of entrepreneurs, in order to contribute to understanding how to effectively develop entrepreneurs. The family context within which an individual grows up is investigated as a possible source of developing strength of entrepreneurial characteristics.

A survey of individuals from both entrepreneurial families and non-entrepreneurial families was conducted. Their entrepreneurial characteristics were tested against their family context and any significant relationships were identified. The results revealed that only Self-confidence, out of the six characteristics, was influenced by the family context. The other five characteristics do not show a relationship and are possibly influenced by other environmental factors. The study also revealed significant relationships between some of the characteristics. This may prove to derive some interesting research questions for future research.

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other university.

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Kamal Patel Date:

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1.2. Research Background

Ever since South Africa participated in the first Global Entrepreneurship Monitor (GEM) Report in 2001 it has consistently declined in the ranking of its level of entrepreneurial activity. In the 2006 GEM report (Bosma and Harding, 2006), South Africa ranked 30th out of 42 countries with just 5.29% of its population involved in Total Early-Stage Entrepreneurship (TEA) activities. Despite improvements in our country's macro-economic environment between 2002 and 2005, the annual GEM reports over this period reflect that in all measures of entrepreneurship South Africa ranks lowest of all developing countries, especially when compared to our peer emerging economies (Columbine, 2007).

In 2004, GEM reported three major environmental factors inhibiting entrepreneurship in South Africa. The first is a lack of entrepreneurial capacity in the population caused by a weak education system, the second is a failure of government to deliver adequate support to entrepreneurs and the third is a lack of access to finance. According to the 2006 GEM report, "Early stage entrepreneurial activities in South Africa (ranging from start-up businesses to those established for 3,5 years) are not sufficient to sustain growth rates of the kind the country needs to fuel its accelerated growth and development plan

(Bizassist, 2007). One of the significant findings for South Africa is that potential entrepreneurs lack the required mindset and the skills to become successful entrepreneurs.

Small businesses are a crucial component the country's economy as they form a new basis for which to expand the economy at the targeted rates that have been set out in the Accelerated and Shared Growth Initiative for South Africa (AsgiSA). These businesses, however, need skilled entrepreneurs, and these entrepreneurs need support and training. The unfortunate situation is that adequate and effective education for entrepreneurs is insufficiently provided in South Africa.

Rae (2000) explains that although academic research has contributed to extensive extrinsic knowledge about entrepreneurship, we still do not really understand the intrinsic human processes of how individuals develop entrepreneurial capabilities. John Orford, principal author of the 2004 GEM report, states that "Entrepreneurship is accepted to be an essential ingredient in economic change but despite considerable academic effort it remains poorly understood. As a result, policy makers have lacked effective means to shape and influence entrepreneurial activity at a national level" (Newsline, 2007, p.1). Understanding these intrinsic processes of developing entrepreneurial capabilities could be a fundamental base upon which this country could build adequate and effective entrepreneurial education systems.

In this context, the question “How are entrepreneurial capabilities developed?” becomes a fundamental departure point in formulating a strategy to successfully develop entrepreneurs to feed South Africa’s growing economy. An understanding of the environment within which the entrepreneurial capabilities are developed, and the dynamics of these capabilities themselves, are critical components of unleashing the entrepreneurial capacity of the nation. The ability to effectively develop and grow entrepreneurs would have a significant impact on the economic growth of the country.

It is in this light that this research report endeavours to explore components of the intrinsic human characteristics of entrepreneurs in order to further develop the body of academic knowledge, with the aim of positively influencing the much needed development and growth of entrepreneurs in South Africa.

1.3. Research Problem

One of the fundamental influencing factors of an individual’s character and world view is the family context within which he or she is raised. This research paper looks at the family context as a potential environmental variable that could have a significant influence on the development of an individual's entrepreneurial capabilities. The entrepreneurial or non-entrepreneurial nature of the family context could be interpreted as this influencing factor. The research paper departs from the point of view that there are potentially significant differences between the characteristics of individuals that come from entrepreneurial families and individuals that come from non-entrepreneurial families. The environmental factors that shape and mould the individual’s

psychology and character are potentially significantly different between the two groups. The research paper aims at understanding if this environmental difference results in there being differences in entrepreneurial characteristics and if so, identifying some of the differences.

The research paper will define the various components of entrepreneurial psychological characteristics and attempt to gain a deeper understanding of the factors that contribute to its development levels within different family contexts, viz. entrepreneurial and non-entrepreneurial families.

1.4. Research Objectives

Through a review of the literature on the subject of entrepreneurial characteristics, it is evident that the environmental and societal factors have a significant role in the cultivation of an entrepreneur. However, what is not extensively defined is the relationship between an individual growing up within an entrepreneurial family environment and the strength in entrepreneurial characteristics of that individual.

Derived from this, the primary objective of the research is to understand the impact of environmental factors, viz. family context, on the strength or weakness of an individual's entrepreneurial characteristics.

2. Chapter 2: Literature Review

2.1. Introduction

Based on the objective of the research report to understand the relationship between an individual's family context and their entrepreneurial characteristics, the literature review aims at evaluating past research in the fields of general entrepreneurship, entrepreneurial characteristics and the entrepreneur's environment.

The literature review commences with an evaluation of the numerous definitions of an entrepreneur, followed by uncovering the six key characteristics of entrepreneurs and then culminates in understanding the influence of the entrepreneur's environmental factors, with particular focus on the family environmental influence.

2.2. Entrepreneurship and the Entrepreneur

Due to the relative youth of entrepreneurship as an academic subject of research, the field has resulted in continued fragmentation, inconclusive findings and some highly controversial research (Cunningham and Lischeron, 1991). Although no universal definition of an "entrepreneur" exists, there are however some underlying themes and assumptions which have gained consensus amongst the research in this field.

Stevenson (2000, p. 1) defines entrepreneurship as "the pursuit of opportunity beyond the resources you currently control". His definition encapsulates two

components, the individual and the environment in which the individual exists. The individual will identify an opportunity to pursue, and then as an entrepreneur he must source the resources from the broader environment. This process has been described to involve all the functions, activities, and actions associated with the perception of opportunities and the creation of the organization with the primary aim of pursuing these opportunities (Mueller and Thomas, 2000). Bygrave and Hofer (1991, p.14) also define an entrepreneur as "someone who perceives an opportunity and creates an organization to pursue it".

Mueller and Thomas (2000) define an entrepreneur as a self motivated individual who takes the initiative to start and build the enterprise, while having primary reliance on oneself rather than others to formulate and implement his or her goals. This self motivated individual also displays personal attributes such as independence, need for control, self reliance, confidence, initiative, and resourcefulness.

Innovative behaviour has also been found to be at the core of entrepreneurial behaviour (Hansemark, 1998). The entrepreneur is believed to be an innovator breaking an existing state of equilibrium while establishing the enterprise for the purpose of profit and growth. Hansemark frames innovation as the creation of new products, a new source of supply or a new organisation or structure in business.

Gartner (1988) describes entrepreneurship as the creation of new organisations; therefore, entrepreneurs can be described as the founders of new firms. This definition is fairly similar to Hisrich's (1990) definition of entrepreneurship: "Entrepreneurship is the process of creating something different with value by devoting the necessary time and effort, assuming the accompanying financial, psychic, and social risks, and receiving the resulting rewards of monetary and personal satisfaction" (p. 209).

Mitchell, Busenitz, Lant, McDougall, Morse and Smith (2002) make two broad propositions in answering the question of why some people are able to discover and exploit entrepreneurial opportunities and others not. One is that entrepreneurs possess information necessary to identify the opportunity and the other is that they possess the cognitive properties necessary to exploit the opportunity. The authors go further to describe entrepreneurial cognition as “the knowledge structure that people use to make assessments, judgements, or decisions involving opportunity evaluation, venture creation and growth” (Mitchell *et al*, 2002, p. 97).

Cunningham and Lischeron (1991) argue that the term “entrepreneur” has traditionally been applied to the founder of a new business venture. From this perspective, anyone who inherits or buys an existing business or manages the turn around of an unsuccessful business would not be classified an entrepreneur. However, most present day writers would consider an owner-manager of a business to be an entrepreneur and thus not limiting the definition to new ventures (Brockhaus, 1980). It is also generally accepted that a person

who provides capital is not considered to be an entrepreneur if he does not also manage the venture.

Amongst all the research in the field, there is generally no universal definition for who an entrepreneur is or what an entrepreneur does (Cunningham and Lischeron, 1991). Cunningham and Lischeron, however, propose that there are 3 categories of entrepreneurs: (1) the individual entrepreneur, (2) the small business owner and (3) the corporate entrepreneur.

For the purposes of this research, we will be considering the first two categories of entrepreneurs, being the individual entrepreneur and the small business owner. Although a substantial amount of research has leaned towards entrepreneurship and innovative behaviour in the creating of an enterprise, one cannot ignore the entrepreneurial characteristics of the small business owner. It is therefore established that within the context of this research, an entrepreneur will incorporate these two categories.

2.3. Entrepreneurial Characteristics

The Psychological Characteristics School of Entrepreneurship views entrepreneurs as individuals driven by needs, attitudes, beliefs and values which are unique compared to non-entrepreneurs (Koh, 1996). Their premise is that one's needs, attitudes, beliefs and values are primary determinants of behaviour. This school of thought focuses on psychological factors and characteristics. The main psychological characteristics associated with entrepreneurship (Bygrave, 1989) are the need for achievement, an internal

locus of control, the tolerance for ambiguity and risk-taking propensity. Another view of the integral characteristics and attitudes of an entrepreneur (Robinson, Stimpson, Huefner and Hunt, 1991) is achievement, innovativeness, control and self-confidence.

In his study of entrepreneurial characteristics, Koh (1996) identifies 3 significant characteristics that were found to be common amongst entrepreneurs. These were propensity to take risks, tolerance of ambiguity and innovativeness.

These psychological and behavioural characteristics which have been linked to an entrepreneur form the constructs to be used in this research. As such, entrepreneurial characteristics encompass the following six psychological and behavioural characteristics:

1) Locus of Control
2) Need for Achievement
3) Propensity to Take Risks
4) Tolerance for Ambiguity
5) Self-confidence
6) Innovativeness

These six characteristics are explored in detail below.

2.3.1. Locus of Control

According to Rotter (1966), an individual perceives the outcome of an event as being either within or beyond their understanding and personal control. An individual with an internal locus of control believes that he has influence over

the outcomes of the event through his personal ability, skills and effort. On the other hand, an individual with an external locus of control believes that there are forces outside his control which will determine outcomes of the event (Mueller and Thomas, 2000).

Similarly, Shane, Locke and Collins (2003) define locus of control as the belief in the extent to which individuals believe that their actions or personal characteristics affect their outcomes. People with an internal locus of control believe themselves to be in control of their destiny while people with an external locus of control belief themselves to be controlled by external factors (Rauch and Frese, 2000).

An internal locus of control has been a frequently studied psychological trait in entrepreneurship research (Mueller and Thomas, 2000). Mueller and Thomas explain that an association exists between entrepreneurial behaviour and an internal locus of control orientation. Entrepreneurs, by most definitions, are initiators, taking responsibility for their own welfare and not dependent on others and hence, posses an internal locus of control.

McClelland (1961) explains that individuals who have a high need for achievement prefer situations in which they feel that they have control over the outcomes of the situation or situations in which they feel that they have a view of how their effort will affect the outcomes of the situation. This has been taken further by Rotter (1966) who argued that individuals with an internal locus of

control are likely to seek entrepreneurial roles because they desire a role in which results are directly impacted by the actions they take (Shane *et al.*, 2003).

Shapero and Sokol (1982) and Krueger (1993) proposed that the propensity to act upon an opportunity is a critical part of the new venture creating process. They argue that the individual must have a psychological predisposition in order to act upon his decision, and not only the perception of the opportunity to be desirable and feasible. Further to this, Shapero explains that the propensity to act upon an opportunity is dependant on an individual's perception of control. Therefore, it is argued that an internal locus of control positively influences the potential for the entrepreneur to take action and act on the opportunity (Mueller and Thomas, 2000).

Mueller and Thomas (2000) conclude that since perception of an individual's ability to affect the results is an influential factor of new venture formation decisions, prospective entrepreneurs are more likely to have an internal locus of control.

2.3.2. Need for Achievement

McClelland's (1961) early work on the fundamental personality traits of an entrepreneur has influenced many studies on characteristics of the entrepreneur (Rauch and Frese, 2000). His research defines a high need for achievement which leads the individual to prefer challenging tasks of moderate difficulty instead of routine or extremely difficult tasks, to take personal

responsibility for their performance, to seek feedback on their performance, and to look for alternative ways to improve their performance.

The premise of McClelland's (1961) theory is that entrepreneurial motive is learnt and that motive could be seen as expectations (Hansemark, 1998). The achievement motive is based on an individual's expectations of doing something better or faster than others and also better or faster than their earlier achievements. The development of this achievement motive is created by the juxtaposition of an individual's desire to achieve and their existing frame of reference. Therefore, the achievement motive is a process of continuous planning, development and striving to excel (Hansemark, 1998).

McClelland (1961) purported that individuals who have a high need for achievement are more likely than those with a low need for achievement to involve themselves in activities that: (1) have a high level of individual responsibility for outcomes; (2) will require personal skills and effort; (3) have a medium level of risk; and (4) incorporates clear feedback on performance (Shane *et al.*, 2003). He also argued that entrepreneurial roles are characterised as having a greater level of these activity attributes (1 to 4), than other non-entrepreneurial roles. Therefore it is likely that individuals with a high need for achievement will be more likely to pursue entrepreneurial types of roles than other non-entrepreneurial types of roles.

A fundamental part of the need for achievement is the characteristic of personal initiative. This is a behavioural characteristic which incorporates self starting,

proactiveness, a long-term oriented view and persistence when faced with obstacles (Utsch and Rauch, 2000).

2.3.3. Propensity to Take Risks

When an entrepreneur enters into a new venture, the individual risks financial wellbeing, opportunity costs, family relations and psychic well-being (Brockhaus, 1980). The personal financial obligations that the entrepreneur makes could result in major losses from a financial, psychological and opportunity perspective. Due to the intricate relationship between the entrepreneur and the venture, the failure of a venture becomes the failure of the entrepreneur which could result in major emotional consequences.

Brockhaus (1980) decomposes entrepreneurial risk into three components: (1) the general risk taking propensity of the individual; (2) the perceived probability of failure of the specific venture; and (3) the perceived consequences of failure of the venture.

Forlani and Mullins (2000) explain that risk reflects the degree of uncertainty and potential loss associated with the outcomes which may follow from a given behaviour or set of behaviours.

Yates and Stone (1992) define the risk construct in three elements: (1) the potential losses; (2) the significance of those potential losses; and (3) the uncertainty of those potential losses. In the entrepreneurial context, which is inherently risky and losses are almost always possible, it is the significance of

any potential losses and the uncertainty of those potential losses that are likely to be most influential in driving the risk perception of the entrepreneur.

Sitkin and Pablo (1992) define risk propensity as “the tendency of a decision maker either to take or to avoid risks” (p. 12).

In their study, Simon, Houghton and Aquino (1999) find that individuals start business ventures because they do not perceive the risks involved, and not because they knowingly accept high levels of risk. They evaluated risk propensity and risk perception from three perspectives, namely: (1) the individual’s illusion of control; (2) the individual’s overconfidence; and (3) the individual’s belief in the law of small numbers. In their findings, the belief in the law of small numbers lowered an individual’s perceptions of a venture’s riskiness, suggesting that some entrepreneurs can draw firm conclusions from small sample sets. A high illusion of control also decreased risk perception, suggesting that some entrepreneurs when starting ventures may not acknowledge that certain critical tasks are beyond their control.

It has also been concluded that entrepreneurs take risky decisions because they perceive less risk in a particular decision where others perceive more (Brockhaus, 1980). Where individuals evaluate an identical situation, some conclude the situation to be very risky where others conclude it to not be risky.

Therefore, if risk perception influences risk taking, it is critical to understand what leads to variations in risk perception. It is argued that cognitive biases,

which are subjective or predisposed opinions, directly influence risk perception of the individual (Simon *et al*., 1999). Although these biases help the individual cope with their cognitive limitations, they could result in less rational and less comprehensive decision-making (Barnes, 1984).

If risk perception directly influences the decision to start a venture, then cognitive biases indirectly affect this decision through its effect on the risk perception of the individual (Simon *et al*., 1999). Therefore, it is concluded that risk perception mediates the relationship between the entrepreneur's cognitive biases and their decision to start a venture.

2.3.4. Tolerance for Ambiguity

Tolerance for ambiguity can be defined as the ability for one to respond positively to ambiguous situations (Teoh and Foo, 1997). This means that an individual who possesses a high tolerance for ambiguity will be confident about making decisions within an ambiguous environment without attempting to seek clarity through more information. Individuals with a high tolerance for ambiguity were more likely to engage in creative and innovative ways of solving problems.

Schere (1982) argues that tolerance for ambiguity is an important personality trait of an entrepreneur because of the unpredictable nature of the challenges, and potential for success or failure inherent in business start-up ventures. As entrepreneurs routinely face more uncertainty in their day to day environment, than do managers within established organizations, entrepreneurs are likely to have a higher tolerance for ambiguity than would managers (Shane *et al*., 2003).

2.3.5. Self-confidence

Self-confidence can be described as the belief in one's ability to develop and implement the necessary personal resources, competencies and skills to attain a predefined level of achievement on a given task (Bandura, 1997). Therefore, self-confidence can be framed as task specific self-confidence.

Self-perception, the way in which an individual perceives their abilities and tendencies, plays a significant role in the development of their intentions (Boyd and Vozikis, 1994). Aligned to that point of view, self-confidence affects the individual's beliefs regarding whether or not a certain goal is attainable.

An individual's self-confidence for a specific task has been described as a good predictor of their performance level on that specific task (Shane *et al.*, 2003). Self-confidence also assists in explaining why two people of equal ability can perform differently on a specific task. The individual with a high self-confidence for the given task will exert more effort for a longer length of time, set higher goals for themselves, persist through most set backs, and set and develop more effective strategies and plans for the specific task. An individual with high self-confidence also has a tendency to take negative feedback in a more positive manner and reflect upon the feedback in order to improve their performance.

If certain behaviour is perceived by an individual to be beyond their ability, they will not act, even if there is a perceived demand for that behaviour (Boyd and Vozikis, 1994). Therefore, the attribute of self-confidence is of vital importance

to the entrepreneurial process because new venture creation is often fraught with ambiguity and requires constant effort, persistence, and planning (Shane *et al.*, 2003).

Bandura (1982) explains that self-confidence is acquired by an individual through the gradual development of complex cognitive, linguistic, social and physical skills which can only be obtained through experience. Therefore, the acquiring of skills and competencies through past experience both reinforces an individual's self-confidence as well as contributes to higher aspirations of their future performance. Individuals grow and strengthen their beliefs about their confidence in four ways: (1) mastery experiences (enactive); (2) modelling (observational); (3) social persuasion; and (4) judgments of their own physiological states.

Perceived self-confidence significantly influences aspiration levels, work attitudes, task performance and goal commitment (Krueger and Dickson, 1994). Individuals with a high self-confidence should take greater risks as they do not dwell on thoughts of failure and any uncontrollable threats. They frame risky choices as opportunities that they can control and manage through their skills and abilities. Self-confidence influences opportunity and threat perceptions, which then influence their risk perception. However, an individual will only initiate entrepreneurial actions when self-confidence is high relative to the perceived requirement of the particular opportunity (Boyd and Vozikis, 1994).

2.3.6. Innovativeness

Innovative activity is explicit in Schumpeter's (1934) description of the role of an entrepreneur as a catalyst of change. He saw the entrepreneur as "an idea man and a man of action . . . instrumental in discovering new opportunities". Innovation is, however, more than just invention and ideas, it involves the commercialisation of the invention to obtain value (Mueller and Thomas, 2000).

A potential entrepreneur must be able to effectively formulate competitive strategies by innovating. This ability is founded upon the entrepreneur possessing personal characteristics which reflect creativity and innovativeness (Mueller and Thomas, 2000). However, the entrepreneur needs to not only possess the ability to conceive these creations, but also be able to implement competitive strategies like developing new products and services, new methods of production or accessing new markets.

In their study of innovativeness and initiative Utsch and Rauch (2000) explain that there was a strong link from achievement orientation to innovativeness and a strong link from innovativeness to both venture performance variables, i.e. profit growth and employee growth. They explain that there are several reasons why innovativeness is critical to venture performance. Entrepreneurs who try to continuously improve their work obtain regular feedback and, therefore, have the ability to integrate more information about their performance and opportunities for development. Innovativeness can also be described as a goal-oriented and planning behaviour. Mueller and Thomas (2000) also explain that there seems to be strong empirical evidence to support the proposition that

entrepreneurs, particularly those successful at growing an enterprise, are more innovative than non-entrepreneurs.

2.4. The Entrepreneur and the Environment

Theories of motivation have progressed from static, content-oriented theories to dynamic, process-oriented theories (Segal, Borgia and Schoenfeld, 2005). Content theories focus on personality profiles (characteristics) of people to explain behaviours, while process theories explain behaviours based on the interaction between the person and the situation (the environment), which is a dynamic process.

Early research in the field of entrepreneurship followed a content theory approach, focusing on distinguishing entrepreneurs as individuals with particular traits and characteristics. The result of these approaches has been largely inconclusive research. Recent research in the field of entrepreneurship research has followed the process model approach, focusing on knowledge, skills and attitudes and how they are linked to behaviours within the environment.

Current process models are founded on the concept that an individual's intentions to become an entrepreneur are predicted by two fundamental questions: (1) is entrepreneurship desirable to me? (desired outcomes); and (2) is entrepreneurship feasible for me? (required skills to succeed) (Segal *et al*., 2005). They found that tolerance for risk, perceived feasibility and perceived net

desirability can significantly predict the inclination to become an entrepreneur and that when combined these three variables provide a stronger indication of the inclination.

Trait and cognition are two major frameworks to distinguish entrepreneurs from non-entrepreneurs and to understand how these individuals make decisions (Das and Teng, 1997). The trait approach explains that entrepreneurs can be recognised by psychological characteristics, like risk propensity, need for achievement, and locus of control; while the cognitive approach focuses on the entrepreneur's preferred way of gathering, processing, and evaluating information (Keh, Foo and Lim, 2002). As the individual mentally constructs business opportunities and the associated risks involved, the cognitive phenomena are critical factors in influencing his perception and world view.

Bird's (1992) model of entrepreneurial intentionality is founded in the cognitive psychology theory which attempts to explain human behaviour. He explains that intentions are conceptualised as a function of beliefs and there is a strong link between the individual's beliefs and any subsequent behaviour (Boyd and Vozikis, 1994). Therefore, it can be said that individuals form attitudes toward the relationship of certain behaviour and the resultant consequences of the behaviour. Fishbein and Ajzen (1975) illustrate this relationship as Beliefs influence Attitudes, which influence Intentions, which influence Behaviour. Therefore, derived from this framework, it can be said that individuals are predisposed to entrepreneurial characteristics and the resultant behaviours based on a combination of both psychological factors and contextual factors.

Other contextual factors of entrepreneurship consist of social, political, and economic variables such as displacement, changes in markets, and government deregulation (Bird, 1988).

2.4.1. Family as the Context

Following on from the process-oriented theories and cognitive theories, it is clear that the environment within which an entrepreneur interacts has a distinctive influence on the development of their psychological characteristics.

It is suggested (Garvan and O'Cinneide, 1994) that on balance, to be a successful entrepreneur it is desirable to come from two learned, successful entrepreneurial parents, get adequate education and gain valuable work experience. This scenario will substantially enhance the probability of success. Since most of the factors influencing psychological characteristics and learning styles are unrelated to genetics, the scenario supports the view that "entrepreneurs are often made, not born" (Garvan and O'Cinneide, 1994). However, the environmental factors that support the making of an entrepreneur are largely unproven.

Further to psychological characteristics of the entrepreneur, family background has also been singled out as one of the key factors which explain new firm formation as an act of entrepreneurship (Llewellyn and Wilson, 2003). The

entrepreneur's family background or just the knowledge of and exposure to another entrepreneur, are both influential towards a start-up experience.

Dyer and Handler (1994) explore how the family influences an entrepreneur's career. They explain that that there are various points in time where the family and entrepreneurial dynamics intersect. Four of these points in time include; (1) early experiences in the entrepreneur's family of origin; (2) involvement and support by family members in early start-up activities; (3) employment of family members within the new business venture; and (4) involvement of family members in the ownership and management succession of a business venture. Although the study explores each of these four areas, it does not provide any conclusive link to entrepreneurial characteristics, but makes a suggestion towards research questions which could be explored in order to develop a better understanding of the relationship between entrepreneurs and their family context.

There have been some other authors who have expressed the view that there is a link between the influences of the family on entrepreneurial behaviour. In his research, McClelland (1965) describes that parents who provide a supportive, nurturing, yet challenging environment in the home develop children who have a high need for achievement. McClelland also argues that the need for achievement characteristic is essential for embarking on entrepreneurial activity. Dyer (1992) has also purports that entrepreneurs often come from homes where the father or mother was self-employed. It can therefore be said that the parental role models seem to encourage entrepreneurial behaviour.

In their study of entrepreneurial careers, Dalton and Holdaway (1989) found that a number of the entrepreneurs they interviewed indicated that they had significant family responsibilities at a young age and were provided opportunities by there family to engage in entrepreneurial activities and roles. The cases included situations of the necessity to help the family financially, as well as parents interested in providing opportunities to help their children develop their skills and learn to accept and understand responsibility. These situations provide the child with the skills, mindset, confidence and values that are required to be a successful entrepreneur, as well as having an influence on the development of the entrepreneurial psychological characteristics of the individual at an early age.

2.4.2. Observational Learning and Behaviour

People form judgments of their own capabilities by comparing themselves to others (Boyd and Vozikis, 1994). Through observational learning, the individual estimates the particular skills and behaviours used by their role model in performing the task, the individual then approximates the extent to which those skills are similar to his own, and then infers the amount of effort versus skill that would be required to reach the same results (Gist and Mitchell, 1992).

Good role models can convey effective mental strategies for managing situations and directly influence self-confidence through social comparison (Wood and Bandura, 1989). The effects of observational learning and

particularly modelling are enhanced when a similarity is perceived between the individual and role model with respect to personal capabilities and characteristics, and when the modelled behaviour produces obvious consequences or results (Gist, 1987; Bandura, 1977).

Hansemark (1998) explains that the social psychological model is based on the premise that individual's choices are influenced by social habits and conventions, and that entrepreneurial role models have an influence on the individual's attitudes and interest towards entrepreneurship. In the trait approach (McClelland, 1961) this interest in entrepreneurship is connected to individual psychological characteristics. Two of the six entrepreneurial characteristics defined earlier in this report, Need for Achievement and Locus of Control are regarded as socially learned characteristics and behaviours (McClelland, 1990; Rotter, 1966).

2.5. Entrepreneurship's Oxygen

Rogoff (2003, p.559) explains that the academic research field of entrepreneurship has for a long time sought to identify the magic substance that feeds entrepreneurship, "its phlogiston". Some research investigated the personal characteristics of entrepreneurs, trying to identify the characteristics that fuel the entrepreneur. However, to date, no personal characteristics that are entirely unique to entrepreneurs have ever been found. Other research has focused on the influence of innovation and technology forces, which has also resulted in not identifying a unique magic ingredient. As Rogoff (2003, p. 559) explains "…from a contextual standpoint, these decades of investigation have,

however, taught us the same lesson that Lavoisier proved with regard to fire - entrepreneurship does not take place in a vacuum. Just as fire is fed by oxygen, entrepreneurship is fed by the oxygen of financial resources, human resources, education, economic conditions, and family".

He goes on to explain that family in some form or other permeates most business ventures and surrounds virtually every entrepreneur. Family also provides a major source and origin of education and values that are critical to entrepreneurs. Furthermore, family often contribute financial and human resources for entrepreneurial ventures. Therefore, in understanding the oxygen that fuels the fire, one would need to understand the influence of family on the entrepreneur. Rogoff (2003) explains that despite this point of view "research into entrepreneurship has generally sidestepped investigating family as a source of oxygen for the entrepreneurial fire, seeking instead to identify a magic, unique, phlogiston-like substance to explain entrepreneurship" (p. 559).

2.6. Conclusion

It is in this light that this research paper aims to integrate the theories of Content and Process; Trait and Cognition; and Individual Characteristics and Modelling Behaviour. By transcending across these theories the research aims at understanding the entrepreneurial psychological characteristics (traits) of individuals within the context of the family environment. The objective will be to test if there is a relationship between the strength of an individual's entrepreneurial psychological characteristics and the family context within which they were raised.

This may take us a few steps closer to understanding if family, in fact, is the oxygen that fuels the entrepreneurial fire.

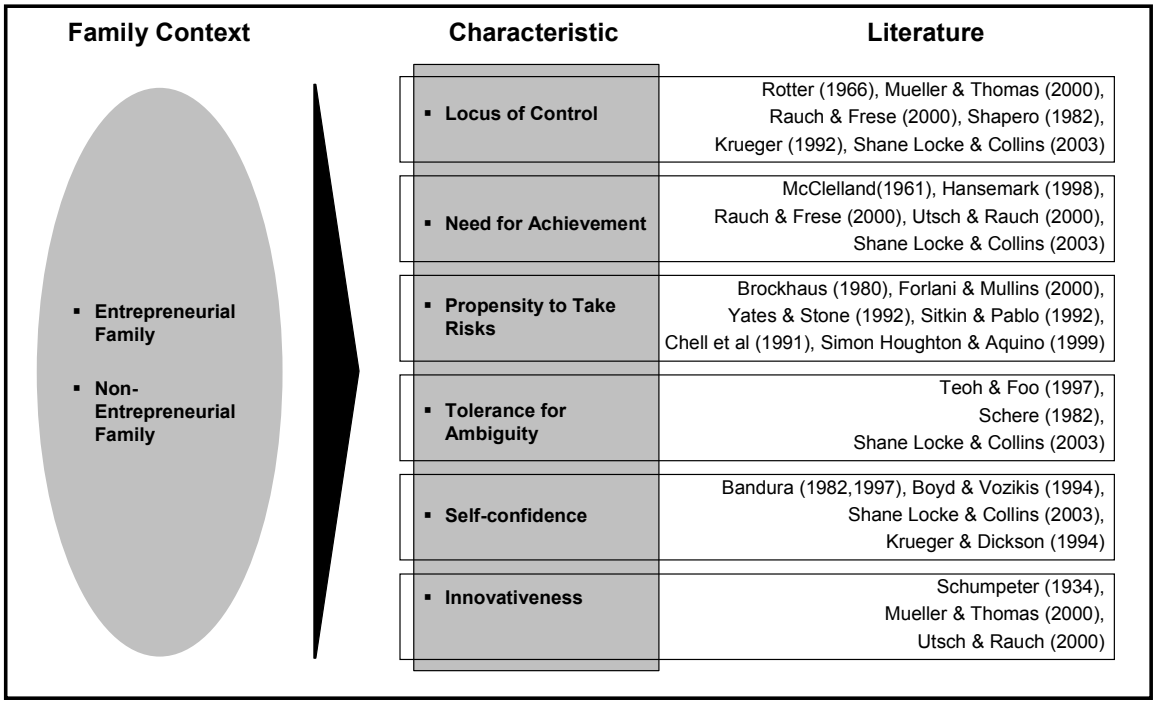
3. Chapter 3: Research Hypothesis

The purpose of this research is to understand the influence of family context (entrepreneurial or non-entrepreneurial) on the entrepreneurial characteristics of the individual. As derived from previous literature the following personality characteristics are considered to be key traits of an entrepreneur:

- Locus of Control
- Need for Achievement
- Propensity to Take Risks
- Tolerance of Ambiguity
- Self-confidence
- Innovativeness

The research aims at understanding the influence of family context, viz. entrepreneurial or non-entrepreneurial family, on each of these entrepreneurial characteristics.

Figure 1: Research Constructs



In order to understand if there is a correlation between the relative strength or weakness of each of these entrepreneurial characteristics and the entrepreneurs' family context, the following hypotheses have been formulated:

H^1: There is a significant relationship between an entrepreneur's level of Locus of Control and them growing up within an entrepreneurial or non-entrepreneurial family.

H^2: There is a significant relationship between an entrepreneur's level of Need for Achievement and them growing up within an entrepreneurial or non-entrepreneurial family.

H^3: There is a significant relationship between an entrepreneur's level of Propensity to Take Risks and them growing up within an entrepreneurial or non-entrepreneurial family.

H^4: There is a significant relationship between an entrepreneur's level of Tolerance of Ambiguity and them growing up within an entrepreneurial or non-entrepreneurial family.

H^5: There is a significant relationship between an entrepreneur's level of Self-confidence and them growing up within an entrepreneurial or non-entrepreneurial family.

H^6: There is a significant relationship between an entrepreneur's level of Innovativeness and them growing up within an entrepreneurial or non-entrepreneurial family.

4. Chapter 4: Research Methodology

4.1. Population of Relevance

The research aims at understanding the relationship between an individual's family context (viz. growing up within an entrepreneurial family or a non-entrepreneurial family) and the relative strength or weakness of their entrepreneurial characteristics. It was determined that the total population for the research would be all individuals within South Africa that have grown up within a family.

The total population is divided into two groups for purposes of defining the environmental factors of family context influence:

1) individuals who have grown up with an entrepreneur in their family, living in the same household as the entrepreneur during their formative years; and
2) individuals who have NOT grown up with an entrepreneur in their family, living in the same household as the individual during their formative years.

In the case of group (1), the entrepreneur could be any family member, i.e. father, mother, grandfather, grandmother, uncle, aunt, etc. However, the entrepreneur must have been living in the same household as the individual and it must have been during the period of birth to 21 years of age. The purpose of this criteria was to ensure that there was sufficient influence upon the individual by the entrepreneur in the family during the individual's formative years (birth to

21 years) and consistent exposure to the entrepreneur (living in the same household).

As outlined in the literature review on Entrepreneurship and the Entrepreneur, there are varied opinions on what and who an entrepreneur is. Throughout most of the literature published on entrepreneurship, there does not seem to be a universally accepted definition of an entrepreneur.

This research takes the opinion similar to that of most present day writers, who consider an owner-manager of a business to be the entrepreneur and thus not limiting the definition of an entrepreneur to new ventures (Brockhaus, 1980). This research paper will consider two categories, individual entrepreneurs and small business owners, as entrepreneurs.

By this definition of an entrepreneur, the classification of an individual to be an entrepreneur would be one who created a new venture, purchased an existing venture or owns a franchise; i.e. an individual who owns or co-owns any type of business venture. A non-entrepreneur would be one who does NOT own or co-own a business venture.

As the research is primarily concerned with the environmental factors that contribute to the degree of entrepreneurial orientation, no emphasis will be placed on the longevity, relative success, profitability, etc. of the entrepreneur's business.

4.2. Size and Nature of Sample

The sample population was divided into two groups for purposes of defining the environmental factor of influence, family context:

1) individuals who have grown up with an entrepreneur in their family and living in the same household as the entrepreneur during their formative years; and
2) individuals who have not grown up with an entrepreneur in their family or not living in the same household as the entrepreneur in their family during their formative years.

The sample population was accumulated via the author's network of friends, family members, fellow MBA students and work colleagues. These individuals were a mix of entrepreneurs and non-entrepreneurs and their status as such was not known prior to including them into the sample size. The unknown factor was their family context and therefore, this classification was random within the selected group.

The sample population would therefore be categorised as a non-probability sample and the sampling methods used are a combination of judgemental, convenience and snowball technique. By using these sampling techniques a reasonable cross section of the South African population was selected as well as adequate representation of both entrepreneurs and non-entrepreneurs.

4.3. Data Collection Tool

After thorough examination of the techniques used in prior research in determining the strengths and weakness of entrepreneurial characteristics of individuals, it was concluded that a questionnaire collecting quantitative data would be the most appropriate data collection tool. A number of questionnaires have been used in prior research to determine the strength and weakness of entrepreneurial characteristics. However, one particular questionnaire was chosen for this research based on its credibility and fit to the research topic.

The Entrepreneurial Self-Assessment Scale is a questionnaire which was first published in the Entrepreneurs' Handbook, a journal produced by the Institute of Small Scale Industries, University of Philippines in 1981. This questionnaire was also used in prior research following its initial publications. Most notably, it was used by Koh (1996) in his research "Testing hypotheses of entrepreneurial characteristics: A study of Hong Kong MBA students". In this study the author tested the relationship between the inclination of becoming an entrepreneur and the six entrepreneurial characteristics for a sample population of a class of MBA students.

The Entrepreneurial Self-Assessment Scale formed the second part of the questionnaire. This measures the six psychological characteristics defined in the six hypotheses being tested: (1) locus of control; (2) need for achievement; (3) propensity to take risk; (4) tolerance of ambiguity; (5) self-confidence; and (6) innovativeness. The questionnaire consists of 36 statements with each of the six characteristics above having an average of six statements each. The

respondents were required to indicate their degree of agreement or disagreement with each statement on a five-point Likert scale, with point 1 being 'strongly disagree' to point 5 being 'strongly agree'. In order to minimise response-set bias and the halo effect, some statements were reverse-scored and all statements were randomly ordered. For each statement, a high score indicates strength in the characteristic and a low score indicates weakness in the characteristic.

The first part of the questionnaire contained some descriptive questions which allowed the respondent to be classified into one of either two groups which related to their family context:

- Entrepreneurial Family
- Non-Entrepreneurial Family

These two groups were used for the correlation and regression tests performed on the data that was collected from the surveys.

The remaining questions in this part of the questionnaire were used mainly to gather descriptive statistics of the sample population. The questionnaire is presented in Appendix A.

4.4. Data Collection Method

The questionnaire designed for this research was posted on SurveyMonkey (www.surveymonkey.com), which is an internet service that allows one to design a questionnaire, host it online on the World Wide Web, request

individuals to respond to the questionnaire and collates all the results from the respondents.

Once the questionnaire was designed and hosted online, the sample population was notified by means of an email briefly outlining the nature of the research and requesting the individual to complete the survey. The email also stated what was required of the individual to complete the survey. A reminder email was then sent out four days following the initial email. The survey was closed one week from the initial email notification.

An initial sample population of 98 people were sent an email requesting them to complete the questionnaire. Of this population, 12 people were asked to forward the email to individuals they knew personally and who would not mind participating. Therefore, the total population to which the email request was sent to cannot be accurately determined and hence, the response rate as well.

A total of 107 respondents commenced the survey. However, the number of respondents who completed the entire survey was 84.

4.5. Data Analysis

After the survey was closed and the data collected from the website, the data was checked for any irregularities. The first irregularity was incomplete surveys. These were identified and the rows entirely dropped from the database. This process reduced the total number of rows of data from 107 to 84.

The second process was the drawing of descriptive statistics to understand the sample population, their characteristics and the breakdown of respondents from entrepreneurial families and those from non-entrepreneurial families.

The third process was to perform frequency, correlation and regression analysis to determine if a relationship existed between the family context of the respondents and their entrepreneurial characteristic, i.e. testing the six hypotheses. Linear regression estimates a linear equation that describes the relationship, whereas correlation measures the strength of that linear relationship (Berk and Carey, 2000).

4.6. Scales

An ordinal scale is used to classify data into distinct categories which can then be ranked. The ordinal scale used in this research is expressed numerically on a 1 to 5 Likert Scale. On this scale the numbers from 1 to 5 represent categories in the responses where 1 is strongly disagree and 5 is strongly agree, with 3 being neutral.

4.7. Research Limitations

The research conducted in this paper had, *inter alia*, the following limitations:

- The classification of the respondent into the category of entrepreneurial family or non-entrepreneurial family was based on the question, “During the period of your life from birth to 21 years of age, which family members were entrepreneurs? (i.e. owned or co-owned a business and

were actively involved in the management of the business)". The answer to this question is the single factor that is used to classify the respondent into one of the two groups. This may have allowed for too broad an interpretation of the family context.

- The relative strength of an entrepreneurial family was not determined for each respondent. Therefore, a family with many entrepreneurs was classified within the same category as a family of one entrepreneur.
- The sample population was almost entirely composed of professionals in corporate and entrepreneurs. Both these groups are successful and their success may have an influencing factor on their entrepreneurial characteristics.

5. Chapter 5: Results

A total of 107 responses to the survey were achieved, of which only 84 respondents had completed the entire survey. The 23 respondents who did not complete the survey were dropped from the data set in order to maintain accuracy in the data analysis and tests.

5.1. Complete Sample Population Descriptive Statistics

The following are selected descriptive statistics of all 84 respondents to the survey. The remaining descriptive statistics can be found in Appendix B.

5.1.1. Age

Figure 2: Age of Respondents

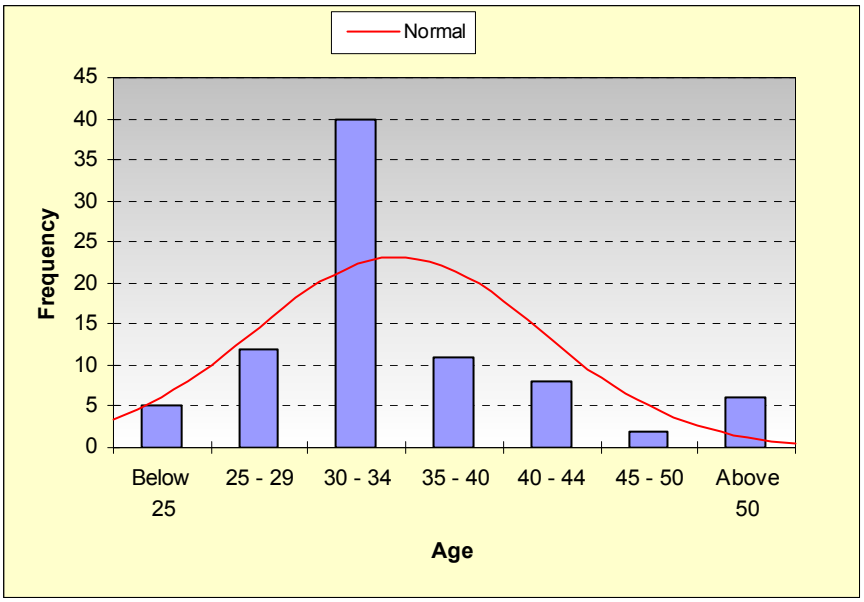


Table 1: Age of Respondents

Age	Frequency	Percent (%)	Cumulative Percent (%)
Below 25	5	5.95	5.95
25 - 29	12	14.29	20.24
30 - 34	40	47.62	67.86
35 - 40	11	13.10	80.95
40 - 44	8	9.52	90.48
45 - 50	2	2.38	92.86
Above 50	6	7.14	100.00

The majority of the respondents (48%) were between 30 and 34 years of age, with the lowest percentage (2%) falling with the age group of 45 to 50 years. Having selected a convenience sample, the reason for the majority of the respondents being between the ages of 25 to 40 years was due to the age group of the population being similar to the author's age of 33.

5.1.2. Gender:

Figure 3: Gender of Respondents

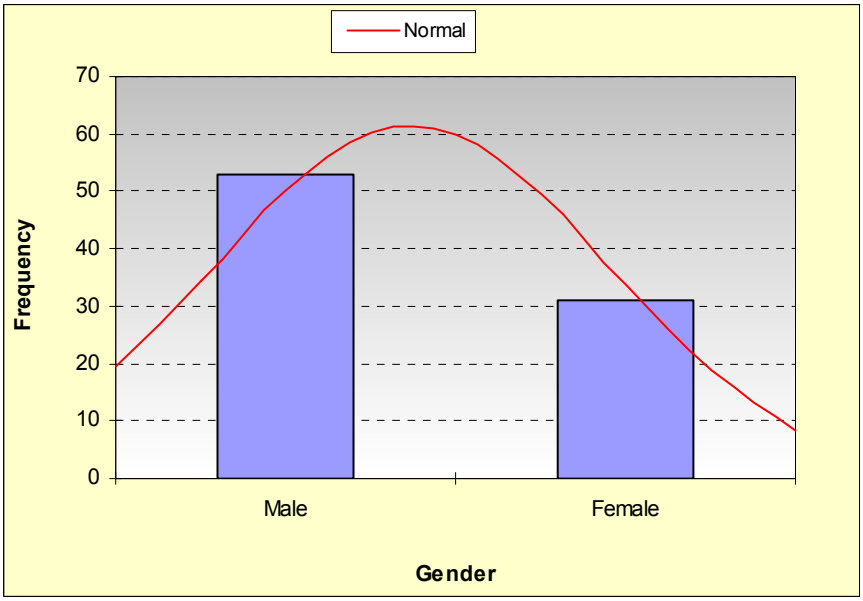


Table 2: Gender of Respondents

Gender	Frequency	Percent (%)	Cumulative Percent (%)
Male	53	63.10	63.10
Female	31	36.90	100.00

The majority of the respondents were male with 63% of the respondents being male and 37% female. This split of male and female respondents provided a good representation from each population group for the survey.

5.1.3. Race:

Figure 4: Race of Respondents

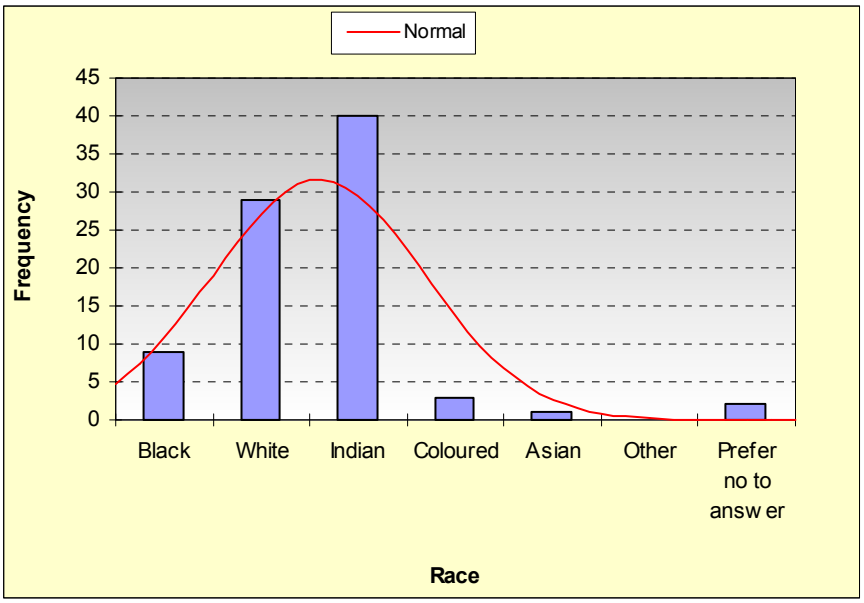


Table 3: Race of Respondents

Race	Frequency	Percent (%)	Cumulative Percent (%)
Black	9	10.71	10.71
White	29	34.52	45.24
Indian	40	47.62	92.86
Coloured	3	3.57	96.43
Asian	1	1.19	97.62
Other	0	0.00	97.62
Prefer no to answer	2	2.38	100.00

As with the age group of the respondents, the race of the respondent was strongly influenced by the convenience sample technique. The result of this technique was that almost 50% of the respondents were Indian in race. The second largest representation was white respondents at 35%. Two respondents preferred not to answer this question.

5.1.4. Employee:

Figure 5: Employment Status of Respondents

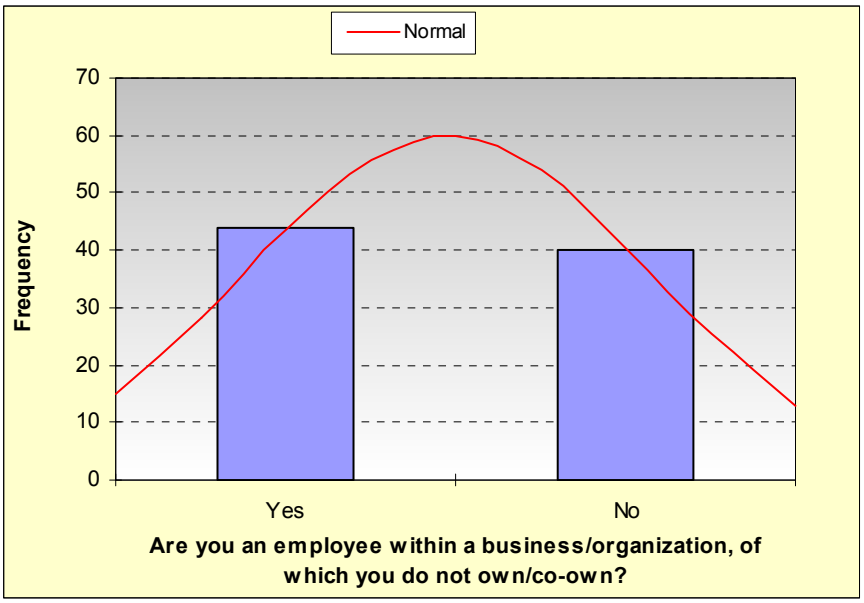


Table 4: Employment Status of Respondents

Employee within a business	Frequency	Percent	Cumulative Percent
Yes	44	52.38	52.38
No	40	47.62	100.00

There was an almost even split between the respondents who were employed within a business they did not own or co-own and respondents who were not.

5.1.5. Business Ownership:

Figure 6: Business Ownership Status of Respondents

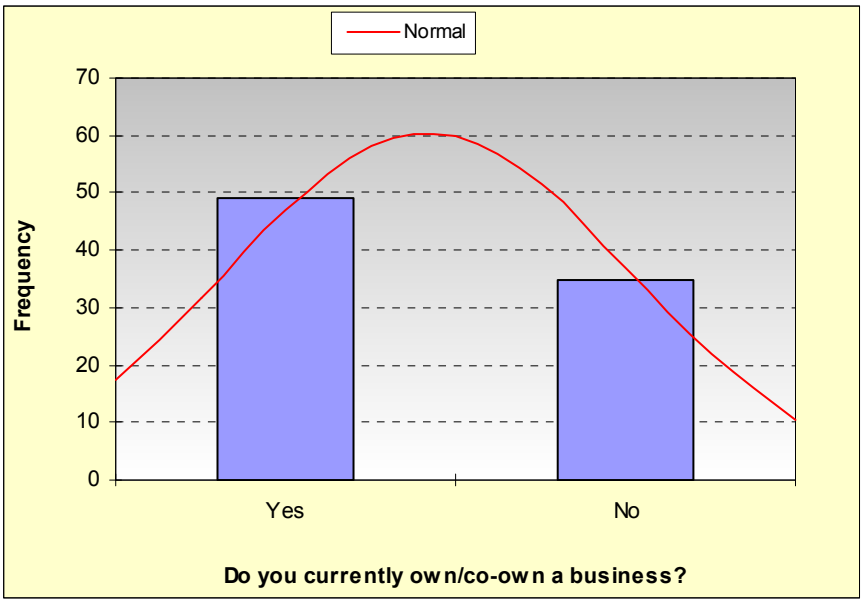


Table 5: Business Ownership Status of Respondents

Business Ownership	Frequency	Percent (%)	Cumulative Percent (%)
Yes	49	58.33	58.33
No	35	41.67	100.00

A larger percentage of respondents owned or co-owned their own business, i.e. 58% with the remaining 42% not owning or co-owning a business.

5.1.6. Entrepreneur in Family

Figure 7: Family Context of Respondents

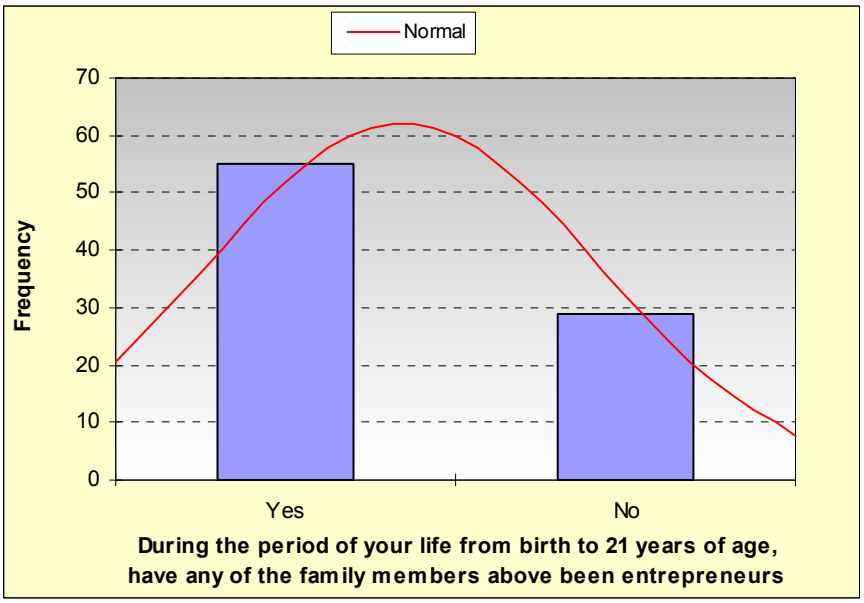


Table 6: Family Context of Respondents

Entrepreneur/s in family	Frequency	Percent (%)	Cumulative Percent (%)
Yes	55	65.48	65.48
No	29	34.52	100.00

A much higher percentage of respondents had grown up with a family member who was an entrepreneur, i.e. 65%, with the remaining 35% not having had an entrepreneur in the family within which they grew up. This question was used to group the population into two distinct groups for purposes of testing the hypothesis of this research, as explained in section 5.2 below.

5.2. Entrepreneurial and Non-Entrepreneurial Family Groups Descriptive Statistics

The following descriptive statistics have been separated into the two groups created to test the hypothesis:

- Respondents who grew up with a family member who was an entrepreneur (referred to as “Entrepreneurial Family” from here on)
- Respondents who did not grow up with a family member who was an entrepreneur (referred to as “Non-Entrepreneurial Family” from here on)

The question used to determine which group the respondent fell into was “During the period of your life from birth to 21 years of age, have any of the family members above been entrepreneurs? (i.e. owned or co-owned a business and were actively involved in the management of the business)”. The list of family members was provided in the previous question.

- If the respondent replied “Yes” to the question, they were categorised into the Entrepreneurial Family group.
- If the respondent replied “No” to the question, they were categorised into the Non-Entrepreneurial Family group.

Based on the descriptive statistics explained above in section “5.1.6 Entrepreneur in Family”, a total of 55 respondents fell in the Entrepreneurial Family group and 29 fell into the Non-Entrepreneurial Family group.

5.2.1. Employee in Business

Figure 8: Employment status of Respondents from Entrepreneurial Families and Non Entrepreneurial Families

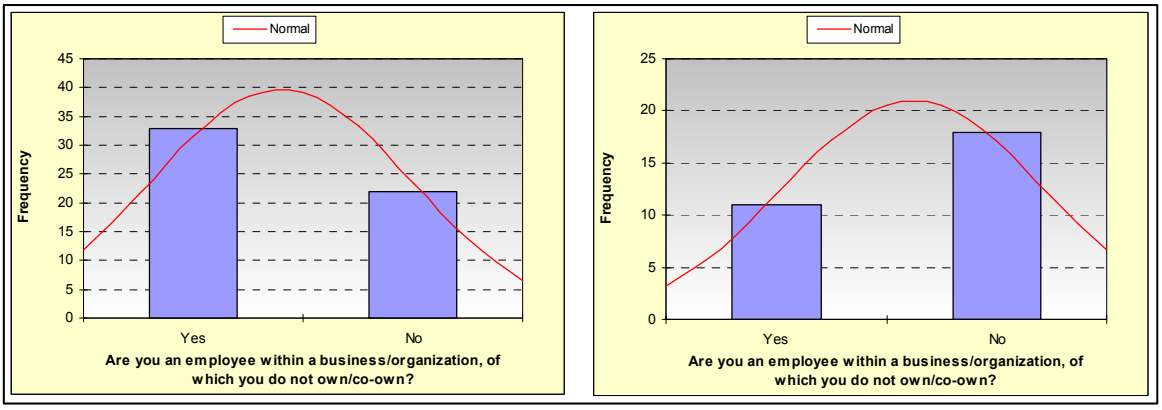


Table 7: Employment status of Respondents from Entrepreneurial Families and Non-Entrepreneurial Families

	Entrepreneurial Family			Non-Entrepreneurial Family	
Employee within a business	Frequency	Percent (%)		Frequency	Percent (%)
Yes	33	60.00		11	37.93
No	22	40.00		18	62.07

An interesting statistic of the sample population is that 60% of the respondents who came from an entrepreneurial family were employed within a business that they did not own or co-own. This is a significant finding in itself and goes against the proposition that an entrepreneurial family context will influence one becoming an entrepreneur. This did not, however, mean that they did not also own a business as well. This fact was determined by the following questions.

Another interesting statistic of the sample population is that 62% of the respondents who came from a non-entrepreneurial family were not employed within a business they did not own or co-own. This means that the majority of the respondents in this group were self-employed or owners/co-owners of businesses. This is a significant finding in itself and goes against the proposition

that a non-entrepreneurial family context will influence one becoming an employee as apposed to an entrepreneur.

5.2.2. Role

Figure 9: Employee's Role in Business of Respondents from Entrepreneurial Families and Non-Entrepreneurial Families

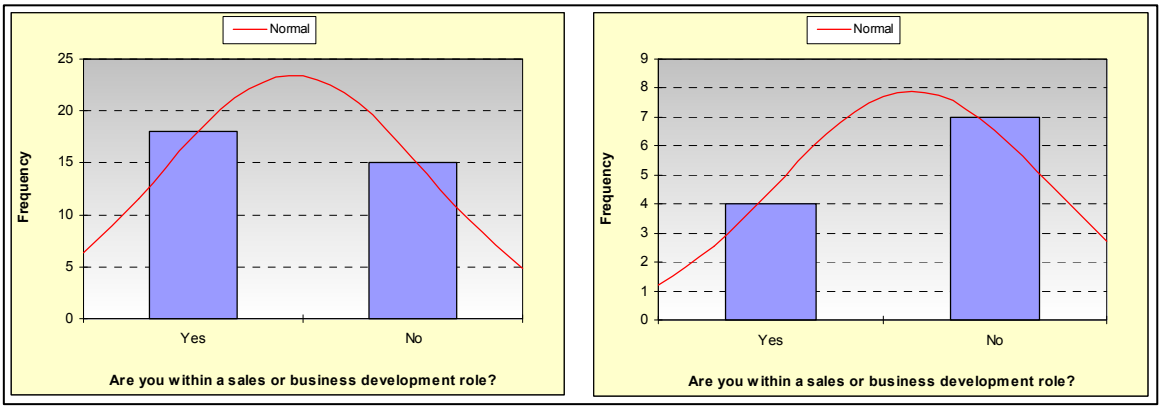


Table 8: Employee's Role in Business of Respondents from Entrepreneurial Families and Non-Entrepreneurial Families

	Entrepreneurial Family			Non-Entrepreneurial Family	
Sales/Business Development Role?	Frequency	Percent (%)		Frequency	Percent (%)
Yes	18	54.55		4	36.36
No	15	45.45		7	63.64

The purpose of ascertaining if the respondent fulfilled a sales or business development role, was to determine if they were employed into an entrepreneurial role within the company they did not own or co-own. Another significant finding is an almost even split between the two roles in the entrepreneurial family, while in the non-entrepreneurial family, more than 60% of the respondents in this group did not fulfil a sales or business development role.

5.2.3. Business Owner

Figure 10: Business Ownership Status of Respondents from Entrepreneurial Families and Non-Entrepreneurial Families

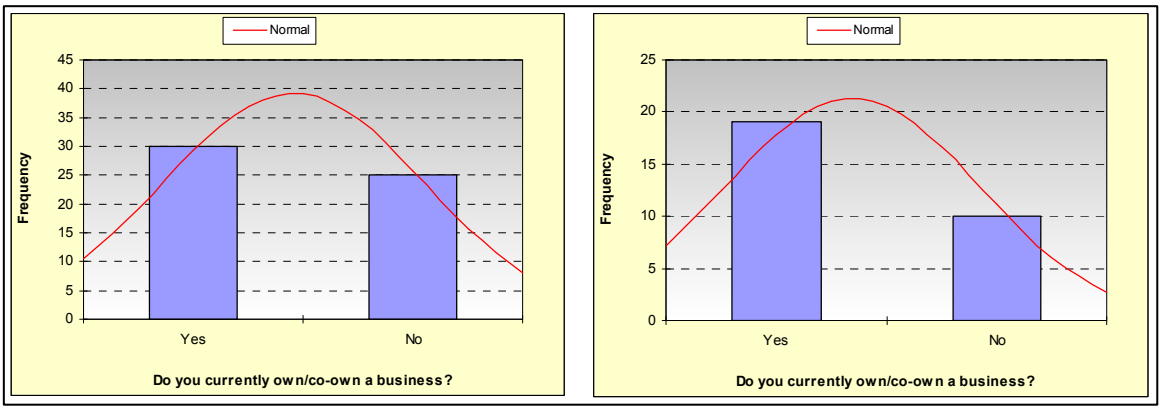


Table 9: Business Ownership Status of Respondents from Entrepreneurial Families and Non-Entrepreneurial Families

	Entrepreneurial Family			Non-Entrepreneurial Family	
Business Ownership	**Frequency**	**Percent (%)**		**Frequency**	**Percent (%)**
Yes	30	54.55		19	65.52
No	25	45.45		10	34.48

Of the respondents who came from an entrepreneurial family, 55% owned or co-owned a business while 45% did not. This provides an interesting result as one would have expected to have a higher skew to business ownership (Yes) in this population based on the literature reviewed on the influence of the entrepreneurial family on the individual becoming an entrepreneur.

The second interesting result in these descriptive statistics is that a much higher percentage of respondents in the non-entrepreneurial family (i.e. 66%) own or co-own a business. This a far higher proportion of business owners compared to the entrepreneurial family population where the proportion of business owners is 55%. Although purely descriptive in their nature, these statistics of the selected population seem to indicate an inverse relationship between the

entrepreneurial nature of the individual's family context and their choice to become an entrepreneur.

This could be an interesting finding to be used to develop questions for future research that explore the relationship between family context and business ownership.

5.2.4. Ownership stake

Figure 11: Business Ownership Stake of Respondents from Entrepreneurial Families and Non-Entrepreneurial Families

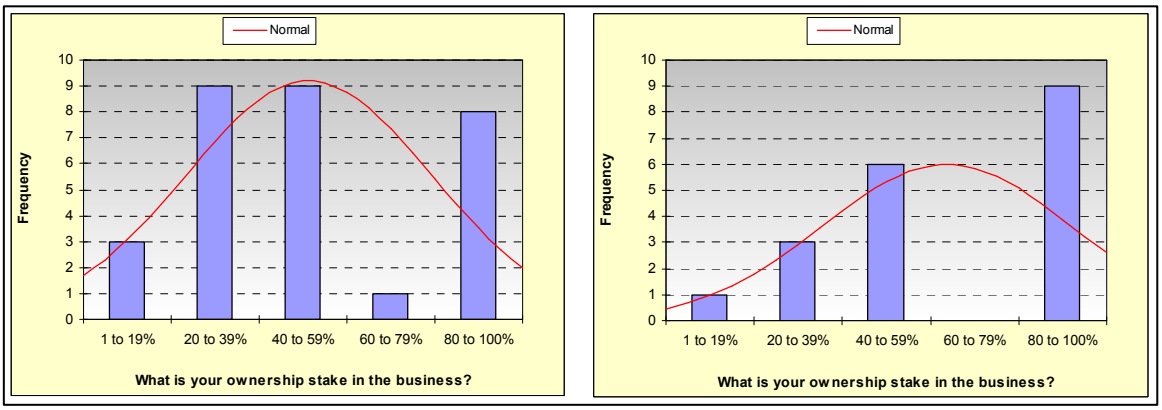


Table 10: Business Ownership Stake of Respondents from Entrepreneurial Families and Non-Entrepreneurial Families

	Entrepreneurial Family			Non-Entrepreneurial Family	
Ownership stake in the business	**Frequency**	**Percent (%)**		**Frequency**	**Percent (%)**
1 to 19%	3	10.00		1	5.26
20 to 39%	9	30.00		3	15.79
40 to 59%	9	30.00		6	31.58
60 to 79%	1	3.33		0	0.00
80 to 100%	8	26.67		9	47.37

A majority (60%) of the respondents from the entrepreneurial family group who owned or co-owned a business had an ownership stake of between 20 and 59% of the business.

A majority (47%) of the respondents from the non-entrepreneurial family group who owned or co-owned a business had an ownership stake of between 80 and 100% of the business. This indicates that the there is a stronger inclination of majority stake ownership of the business within the non-entrepreneurial family group.

This could be an interesting phenomenon to be used to develop questions for future research that explore the relationship between family context and ownership stake.

5.2.5. Involvement

Figure 12: Level of Involvement of Respondents from Entrepreneurial Families and Non-Entrepreneurial Families

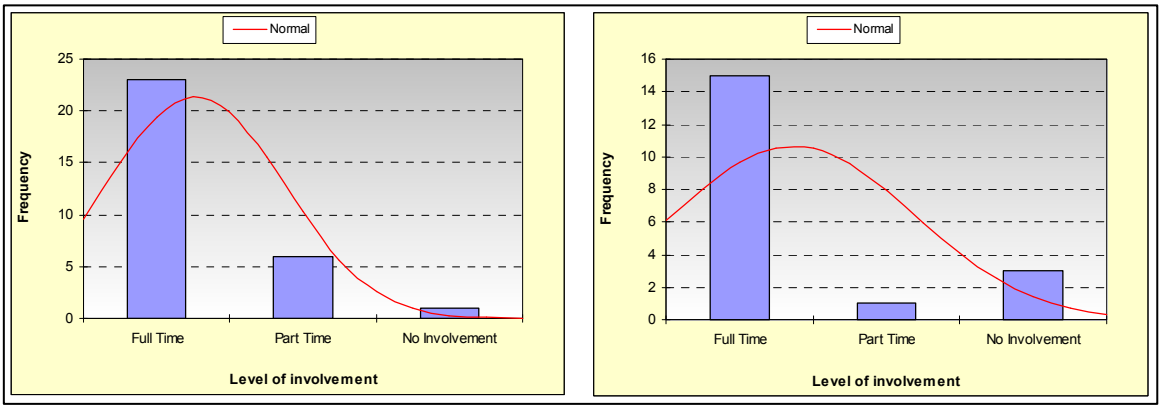


Table 11: Level of Involvement of Respondents from Entrepreneurial Families and Non-Entrepreneurial Families

	Entrepreneurial Family			Non-Entrepreneurial Family	
Level of involvement	Frequency	Percent (%)		Frequency	Percent (%)
Full Time	23	76.67		15	78.95
Part Time	6	20.00		1	5.26
No Involvement	1	3.33		3	15.79

Of the total respondents within the entrepreneurial family group, 77% of the respondents have a full time involvement in the business. A very similar amount

(79%) of the respondents in the non-entrepreneurial family group also had a full time involvement.

A total of only 4 respondents of the entire sample population had no involvement in the business which they owned or co-owned, with 1 being in the entrepreneurial family group and 3 in the non-entrepreneurial family group.

5.3. Entrepreneurial Characteristics

In the survey, respondents were asked to answer 36 questions that pertained to their level of entrepreneurial characteristics. Each question belonged to one of the 6 entrepreneurial characteristics discussed in the literature review. A 5 point Likert scale was used where 1 equalled Strongly Disagree, 3 was Neutral and 5 was Strongly Agree. The respondent was required to select the degree of agreement or disagreement to each of the 36 statements. The answers were then aggregated to the characteristic it belonged to in order to determine an overall score for each of the 6 characteristics (See Appendix B). The overall score for each characteristic was then used in the correlation and regression tests. The table below shows the overall mean scores for the characterises of both groups, Entrepreneurial Family and Non-Entrepreneurial Family

Table 12: Entrepreneurial Characteristic Strengths of Respondents from Entrepreneurial Families and Non-Entrepreneurial Families

Entrepreneurial Family					Entrepreneurial Characteristic	Non-Entrepreneurial Family				
Mean Percentage (%)						Mean Percentage (%)				
1	2	3	4	5		1	2	3	4	5
Low				High		Low				High
4	19	16	**45**	20	**Locus of Control**	5	15	14	**46**	21
3	8	6	**52**	34	**Need for Achievement**	4	8	7	**47**	34
4	13	11	**45**	13	**Propensity to Take Risks**	6	25	12	**42**	15
10	28	18	**35**	10	**Tolerance for Ambiguity**	8	24	18	**33**	16
3	12	11	**45**	30	**Self Confidence**	2	5	8	**48**	37
1	6	11	**53**	29	**Innovation**	0	3	11	**56**	30

Although a very basic form of statistical analysis, these descriptive statistics show a strong similarity in the mean values for each characteristic of both the population groups. This will indicate on the surface, that there is no significant difference in the strength of entrepreneurial characteristics between the two groups. Both groups seem to have the highest concentration of respondent's answers in category 4 ("Agree" with the statements) which shows strength in the entrepreneurial characteristic. This appears to be the case for all of the 6 characteristics being tested.

6. Chapter 6: Discussion of Results

6.1. Correlation Test Results

In order to test the hypotheses that have been laid out in this research, the data accumulated from the 84 respondents to the survey was further analysed. Both correlation and regression tests were performed on this data and used to test the hypotheses that have been proposed.

6.1.1. Correlation

A correlation is a single number that describes the degree of relationship between two variables. This research aims at understanding the relationship between the two variables – entrepreneurial family context (entrepreneurial or non-entrepreneurial) and entrepreneurial characteristics.

Respondents were asked to indicate the extent to which they agree with a number of statements that relate to Entrepreneurial Characteristics using a five point Likert scale. Scores were then grouped into the six entrepreneurial characteristics with a calculated mean. In terms of the entrepreneurial family context, respondents were asked whether they had any members in the family who were entrepreneurs. There were 84 cases (55 Entrepreneurial Family and 29 Non-Entrepreneurial Family) that met the criteria and were included in the dataset.

When carrying out a hypothesis test, the result will depend on whether or not the test statistic falls into the critical region or regions. The critical regions are

determined by critical values, which are themselves determined by the level of test or significance level. A significance test was conducted to test whether the probability that the observed correlation occurred by chance. This test shows whether the probability that the correlation is a real one and not a chance occurrence. In this instance the common significance level of alpha = .05 was used. This means the odds that the correlation is a chance occurrence is no more than 5 out of 100. The degrees of freedom which is computed as df = N-2 (i.e. 84 –2 = 82) is also a necessary test when doing hypotheses testing.

In addition, because there was no strong prior theory to suggest whether the relationship between Entrepreneurial Characteristics and the Entrepreneurial Family Context was positive or negative, a two-tailed test was performed. The two tailed tests means that the left and right tails of the normal distribution line should be 5% of the total area under the normal curve. The critical value for this dataset is ±1.96.

Table 13: Descriptive Statistics of Entrepreneurial Characteristics

Descriptive Statistics			
Variable	Mean	Std Dev.	N
Entrepreneurial Family	1.345	0.478	84
Locus of control	3.631	0.510	84
Need for achievement	4.167	0.556	84
Propensity to take risk	3.440	0.628	84
Tolerance for ambiguity	3.274	0.717	84
Self-confidence	4.048	0.638	84
Innovation	4.024	0.620	84

Table 14: Pearson Correlation Test Results

Pearson Correlations							
	Entrepreneur	LOC	NFA	PTR	TFA	SC	Inn
Entrepreneurial Family	**1.000**	0.134	-0.083	0.009	0.107	**0.222**	0.094
Locus of control	0.134	**1.000**	-0.035	-0.013	0.115	0.092	0.181
Need for achievement	-0.083	-0.035	**1.000**	0.270	0.186	0.351	0.233
Propensity to take risk	0.009	-0.013	0.270	**1.000**	0.371	0.278	0.437
Tolerance for ambiguity	0.107	0.115	0.186	0.371	**1.000**	0.155	0.337
Self-confidence	0.222	0.092	0.351	0.278	0.155	**1.000**	0.484
Innovation	0.094	0.181	0.233	0.437	0.337	0.484	**1.000**

The table above shows the simple Pearson Correlation for each possible pair of variables (dependent and independent). These values can vary from -1 to 1. A value of -1 indicates a perfect negative linear correlation (i.e. as one variable increases the other decreases in a consistent linear way). A value of (+) 1 indicates a perfect positive linear correlation (i.e. as one variable increases the other increases in a consistent linear way). The first part of the linear regression test is the test for any relationships between the dependent and independent variables. These variables show not only the correlation between dependent and independent variables but also the relationship that exists within each of the Entrepreneurial Characteristic constructs.

The correlation matrix lists the variable names (from Entrepreneurial Family to Innovation) down the first column and across the first row. The results of the correlation test yield only one characteristic, **Self Confidence** which has a

positive and significant correlation with the Family Context of an Entrepreneurial Family. The correlation matrix yields a figure of 0.222. This is the highest correlation level found and the only significant positive correlation. This suggests that if there is an increase in the construct of Entrepreneurial Family Context an increase in Self Confidence will be the resulting effect.

The remaining characteristics have derived very low correlation values with the Entrepreneurial Family Context.

- Locus of Control = 0.134
- Need for Achievement = -0.083
- Propensity to Take Risks = 0.009
- Tolerance for Ambiguity 0.107
- Innovation = 0.094

These correlations are, however, not significant enough to infer a relationship exists between these variables.

Therefore, it can only be inferred that a positive and significant relationship exists only between the Self Confidence characteristic and Family Context. None of the other entrepreneurial characteristics share this correlation.

6.1.2. Correlations Significance Test

Table 15: Correlation Significance Test Results

Significance for Pearson Correlations							
	Entrepreneur	LOC	NFA	PTT	TFA	SC	Inn
Entrepreneur in family	-	0.226	0.453	0.935	0.331	**0.043**	0.396
Locus of control	0.226	-	0.749	0.907	0.298	0.407	0.100
Need for achievement	0.453	0.749	-	0.013	0.090	0.001	0.033
Propensity to take risk	0.935	0.907	0.013	-	0.001	0.011	0.000
Tolerance for ambiguity	0.331	0.298	0.090	0.001	-	0.158	0.002
Self-confidence	0.043	0.407	0.001	0.011	0.158	-	0.000
Innovation	0.396	0.100	0.033	0.000	0.002	0.000	-

The table above indicates the significance for the preceding Pearson Correlations that have been discussed. The values which are calculated and displayed depict the significance of the correlation values in the Correlation matrix discussed. The common significance level of alpha = 0.05 was used in this test. This means that the odds that the correlation is a chance occurrence are no more than 5 out of 100. In this significance table, values less than 0.05 suggest that the relationship observed between the 2 variables is unlikely to be due to chance. Values more than 0.05 suggest that the relationship observed between the 2 variables could likely be due to chance, i.e. there are other factors (outside the ones being tested) that could have an influence on the relationship identified in the Pearson Correlations.

Based on the Significance for Pearson Correlations table above the following characteristics, if found to be correlated to the Entrepreneurial Family construct, have occurred by chance as there could be other factors that have an influence on the relationship being tested:

- Locus of Control = 0.226
- Need for achievement = 0.453

- Propensity to take risks = 0.935
- Tolerance for ambiguity = 0.331
- Innovation = 0.396

Therefore, it can be said that any relationship identified between these variables and the Entrepreneurial Construct need to be examined closely, as there could be other factors that influence this relationship and they need to be considered.

Self Confidence is the only relationship that did not occur by chance, i.e. has a significance level of 0.043 which is below 0.05. This means that a correlation found between this variable and the Entrepreneurial Family Construct is a true correlation and other factors (outside that which is being tested) have not played an influencing role.

6.1.3. Regression Coefficients

For the purposes of testing the causal relationship between Entrepreneurial Family context and Entrepreneurial Characteristics, we refer to the Standardized coefficients that makes use of beta coefficients (expressed as b) to illustrate the effect that one variable will have on another.

The standardised coefficient shows the effect that an increase or decrease in one variable will have on another variable, i.e. this coefficient indicates how much the dependent variable (Entrepreneurial Family Context) will change for a unit change in the independent variable (Entrepreneurial Characteristic). For the purposes of this research, the increase would be an answer of “Yes” to the

question “Is there an entrepreneur in your family?” and the decrease would be the answer “No” to the same question.

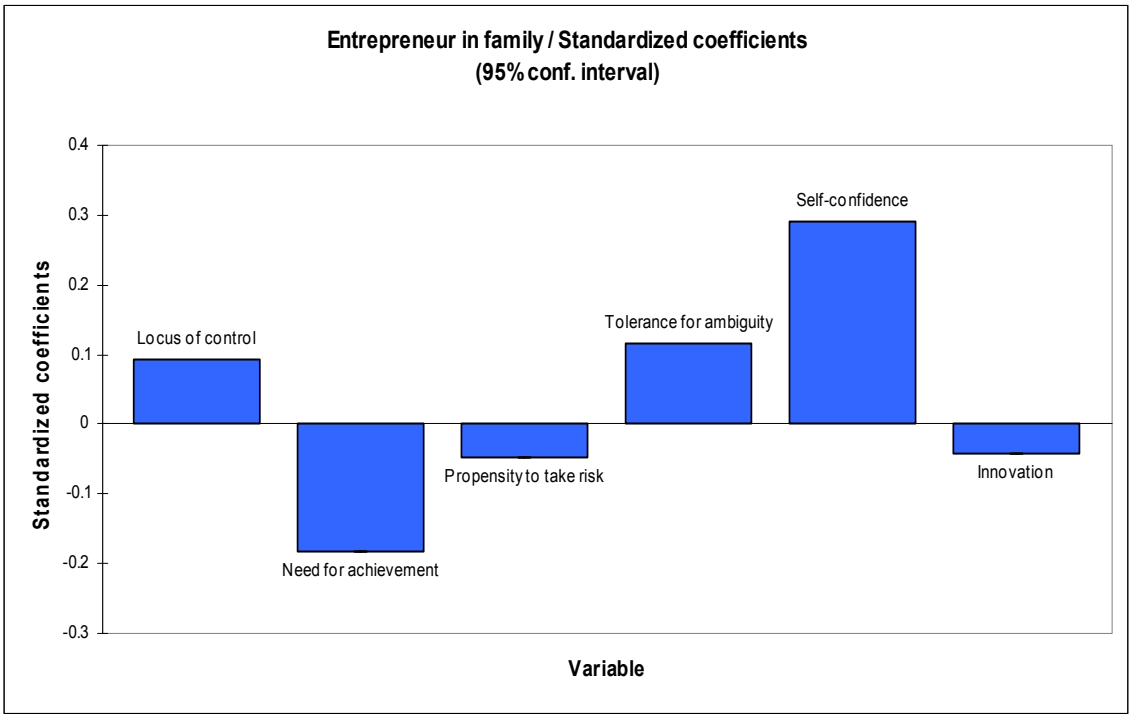
Table 16: The Standardised Regression Coefficient Test Results

Regression Coefficients					
Source	Coefficient	Std Error	**Std Beta**	-95% C.I.	+95% C.I.
Intercept	0.787	0.598		-0.403	1.977
Locus of control	0.088	0.104	**0.094**	-0.120	0.296
Need for achievement	-0.156	0.102	**-0.181**	-0.359	0.047
Propensity to take risk	-0.036	0.097	**-0.047**	-0.229	0.157
Tolerance for ambiguity	0.078	0.080	**0.116**	-0.082	0.237
Self-confidence	0.218	0.097	**0.291**	0.026	0.411
Innovation	-0.031	0.106	**-0.041**	-0.242	0.179

The coefficients in the table above indicate how much the dependent variable will change for a unit change in the independent variable. In multiple regressions, there will be a single beta associated with each independent variable in the model. These betas are called Partial Regression Coefficients and indicate how much the dependent variable will change per unit change in the corresponding independent variable if all other independent variables are held constant, i.e. if the dependent variable increase by 0.6 standard deviations there will be an increase in the standard deviation in the independent variable that the coefficient is associated with.

The standard beta coefficients are used to show which independent variable has the greatest effect on the dependable variable.

Figure 13: The Standardised Regression Coefficient Test Results



Negative relationships or decreasing causal effects

A decrease (Answer = "No") in the dependant variable Entrepreneurial Family Context has a decreasing effect on entrepreneurial characteristics of:

- Need for achievement (b = -0.181)
- Propensity to take risks (b = -0.047)
- Innovation (b = -0.041)

Need for achievement: The beta co-efficient for this variable (construct) is shown in the graph above as a negative value. This means that where there is a decrease (answer of "No" to the question "Do you have an entrepreneur in your family?"), there is a decreasing effect on the variable Need for Achievement. This would suggest that if the individual did not have an entrepreneur in the family, it is likely that that person would not possess a strength in the entrepreneurial characteristic of Need for Achievement.

Propensity to take risks: the data suggests that the Entrepreneurial Family Context has a decreasing effect on the Entrepreneurial Characteristic of Propensity to Take Risks. This would suggest that if the individual did not have an entrepreneur in the family, it is likely that that person would not possess a strength in the entrepreneurial characteristic of Propensity to Take Risks.

Innovation: the data suggests that the Entrepreneurial Family Context has a decreasing effect on the Entrepreneurial Characteristic of Innovation. This would suggest that if the individual did not have an entrepreneur in the family, it is likely that that person would not possess a strength in the entrepreneurial characteristic of Innovativeness.

These are all possible areas for additional research to determine what factors would influence the embodiment of these entrepreneurial characteristics in an individual.

Positive relationships and increasing causal effects

The standardised coefficients for the three remaining characteristics show that an increase (Answer = “Yes”) in the construct Entrepreneurial Family Context has an increasing effect on the entrepreneurial characteristics of:

- Self confidence (b = 0.291)
- Tolerance for ambiguity (b = 0.116)
- Locus of control (b = 0.094)

Self-confidence: the data suggests that the Entrepreneurial Family Context has an increasing effect on the Entrepreneurial Characteristic of Self Confidence. This would suggest that if the individual had an entrepreneur in the family, it is likely that that person would possess a strength in the entrepreneurial characteristic of Self-confidence. This characteristic also has the highest positive Beta value (0.291) of all the six entrepreneurial characteristics.

Tolerance of Ambiguity: the data suggests that the Entrepreneurial Family Context has an increasing effect on the Entrepreneurial Characteristic of Tolerance for Ambiguity. This would suggest that if the individual had an entrepreneur in the family, it is likely that that person would possess a strength in the entrepreneurial characteristic of Tolerance for Ambiguity.

Locus of Control: the data suggests that the Entrepreneurial Family Context has an increasing effect on the Entrepreneurial Characteristic of Locus of Control. This would suggest that if the individual had an entrepreneur in the family, it is likely that that person would possess a strength in the entrepreneurial characteristic of Locus of Control.

6.2. Hypothesis Discussion

6.2.1. Locus of Control

Hypothesis: the relevant null and alternative hypotheses are stated as

H^{1o}: There is no significant relationship between an entrepreneur's level of Locus of Control and them growing up within an entrepreneurial or non-entrepreneurial family.

H^{1a}: There is a significant relationship between an entrepreneur's level of Locus of Control and them growing up within an entrepreneurial or non-entrepreneurial family.

Discussion:

Based on the correlation and regression tests conducted, the following could be derived about the Locus of Control characteristic:

- Correlation Test = 0.134 indicates that there is **no significant correlation** between the family context and entrepreneurial characteristics.
- Correlation Significance = 0.226 indicates that there could be **other factors** that may have an influence on the Locus of Control characteristic other than family context.
- Standardised Regression Coefficients b = 0.094 indicates that there is a **positive** causal relationship that the family context has with the entrepreneurial characteristic.

Decision:

Fail to reject the null hypothesis "There is no significant relationship between an entrepreneur's level of Locus of Control and them growing up within an entrepreneurial or non-entrepreneurial family".

Conclusion:

Since the null hypothesis cannot be rejected, it can be inferred that there is insufficient evidence to suggest that there is a positive relationship between the Family Context and the entrepreneurial characteristic Locus of Control.

Along with many other authors, Mueller and Thomas (2000) have found that a relationship existed between entrepreneurial behaviour and an internal locus of control. Although well established and empirically tested as a characteristic of an entrepreneur, Locus of Control does not appear to be a characteristic that is influenced and developed by an entrepreneurial family context.

6.2.2. Need for Achievement

Hypothesis: the relevant null and alternative hypotheses are stated as

H^{2o}: There is a no significant relationship between an entrepreneur's level of Need for Achievement and them growing up within an entrepreneurial or non-entrepreneurial family.

H^{2a}: There is a significant relationship between an entrepreneur's level of Need for Achievement and them growing up within an entrepreneurial or non-entrepreneurial family.

Discussion:

Based on the correlation and regression tests conducted, the following could be derived about the Need for Achievement characteristic:

- Correlation Test = -0.083 indicates that there is **no significant correlation** between the family context and entrepreneurial characteristics.
- Correlation Significance = 0.453 indicates that there could be **other factors** that may have an influence on the Need for Achievement characteristic other than family context.
- Standardised Regression Coefficients b = -0.181 indicates that there is a **negative** causal relationship that the family context has with the entrepreneurial characteristic.

Decision:

Fail to reject the null hypothesis "There is a no significant relationship between an entrepreneur's level of Need for Achievement and them growing up within an entrepreneurial or non-entrepreneurial family".

Conclusion:

Since the null hypothesis cannot be rejected, it can be inferred that there is insufficient evidence to suggest that there is a positive relationship between the Family Context and the entrepreneurial characteristic Need for Achievement.

McClelland's (1961) extensive research into the characteristic of Need for Achievement and its relationship with entrepreneurial actions has firmly established that a relationship does exist and an entrepreneur is more inclined to have a high Need for Achievement. The influencing factors of the entrepreneur developing this characteristic have, however, not been clearly determined. This research shows that Family Context has not been proven to be a significant influencing factor in the development of the characteristic of Need for Achievement.

6.2.3. Propensity to Take Risks

Hypothesis: the relevant null and alternative hypotheses are stated as

H^{3o}: There is no significant relationship between an entrepreneur's level of Propensity to Take Risks and them growing up within an entrepreneurial or non-entrepreneurial family.

H^{3a}: There is a significant relationship between an entrepreneur's level of Propensity to Take Risks and them growing up within an entrepreneurial or non-entrepreneurial family.

Discussion:

Based on the correlation and regression tests conducted, the following could be derived about the Propensity to Take Risks characteristic:

- Correlation Test = 0.009 indicates that there is **no significant correlation** between the family context and entrepreneurial characteristics.
- Correlation Significance = 0.935 indicates that there are **other factors** that may have an influence on the Propensity to Take Risks characteristic other than family context.
- Standardised Regression Coefficients b = -0.047 indicates that there is a **negative** causal relationship that the family context has with the entrepreneurial characteristic.

Decision:

Fail to reject the null hypothesis "There is a no significant relationship between an entrepreneur's level of Propensity to Take Risks and them growing up within an entrepreneurial or non-entrepreneurial family".

Conclusion:

Since the null hypothesis cannot be rejected, it can be inferred that there is insufficient evidence to suggest that there is a positive relationship between the Family Context and the entrepreneurial characteristic of Propensity to Take Risks.

Both risk propensity and risk perception are fundamental components of an entrepreneur's psychology. The ability to accept taking on risks and the relative perception of the degree of the risk have been extensively researched, along with the relationship between this characteristic and entrepreneurial actions (Simon *et al.*, 1999). However, what influences the entrepreneur's development of the risk taking propensity characteristic does not appear to be related to the entrepreneur's family context.

6.2.4. Tolerance of Ambiguity

Hypothesis: the relevant null and alternative hypotheses are stated as

H^{4o}: There is no significant relationship between an entrepreneur's level of Tolerance of Ambiguity and them growing up within an entrepreneurial or non-entrepreneurial family.

H^{4a}: There is a significant relationship between an entrepreneur's level of Tolerance of Ambiguity and them growing up within an entrepreneurial or non-entrepreneurial family.

Discussion:

Based on the correlation and regression tests conducted, the following could be derived about the Tolerance of Ambiguity characteristic:

- Correlation Test = 0.107 indicates that there is **no significant correlation** between the family context and entrepreneurial characteristics.
- Correlation Significance = 0.331 indicates that there could be **other factors** that may have an influence on the Tolerance for Ambiguity characteristic other than family context.
- Standardised Regression Coefficients b = 0.116 indicates that there is a **positive** causal relationship that the family context has with the entrepreneurial characteristic.

Decision:

Fail to reject the null hypothesis "There is no significant relationship between an entrepreneur's level of Tolerance of Ambiguity and them growing up within an entrepreneurial or non-entrepreneurial family".

Conclusion:

Since the null hypothesis cannot be rejected, it can be inferred that there is insufficient evidence to suggest that there is a positive relationship between the Family Context and the entrepreneurial characteristic of Tolerance of Ambiguity.

Due to the unpredictable nature of entrepreneurship, it has been found that Tolerance for Ambiguity is an important personality characteristic that an entrepreneur must possess (Schere, 1982). The ability to deal within ambiguous and uncertain environments and making decisions in these contexts requires a significant Tolerance for Ambiguity. Although an important characteristic for an entrepreneur, it does not appear that an entrepreneurial family context significantly influences the individual in developing this characteristic.

6.2.5. Self Confidence

Hypothesis: the relevant null and alternative hypotheses are stated as

H^{5o}: There is no significant relationship between an entrepreneur's level of Self Confidence and them growing up within an entrepreneurial or non-entrepreneurial family.

H^{5a}: There is a significant relationship between an entrepreneur's level of Self Confidence and them growing up within an entrepreneurial or non-entrepreneurial family.

Discussion:

Based on the correlation and regression tests conducted, the following could be derived about the Self Confidence characteristic:

- Correlation Test = 0.222 indicates that there is a **significant correlation** between the family context and entrepreneurial characteristics. This correlation was the highest that was recorded of the six characteristics.
- Correlation Significance = 0.043 indicates that the family context is a **significant influencing factor** on the Self-confidence characteristic and the correlation is not a chance correlation. This is the only characteristic to achieve a significant scoring.
- Standardised Regression Coefficients b = 0.291 indicates that there is a **positive** causal relationship that the family context has with the entrepreneurial characteristic.

Decision:

Reject the null hypothesis and accept the alternative hypothesis "There is a significant relationship between an entrepreneur's level of Self Confidence and them growing up within an entrepreneurial or non-entrepreneurial family".

Conclusion:

Since the null hypothesis has been rejected and the alternative hypothesis accepted, it can be inferred that there is sufficient evidence to suggest that there is a positive relationship between the Family Context and the entrepreneurial characteristic of Self Confidence.

Self-confidence was found to have a significant relationship with the entrepreneurial family context and the relationship was also found not to have occurred by chance. Therefore the family context has played a significant role in developing the characteristic. It is also the only one of the six entrepreneurial characteristics that has a significant relationship with the family context.

Boyd and Vozikis (1994) explain that the way the entrepreneur perceives his abilities plays a significant role in his intentions and actions. Bandura (1982) explains that self-confidence is acquired through the development of cognitive, linguistic, social and physical skills. These developments of an individual are largely influenced by the environment in which they grow and learn. It has been inferred that Self-confidence is a socially learned characteristic and behaviour (McClelland, 1990). The family context has proven to be an environmental factor that influences the learning of the characteristic and behaviour.

6.2.6. Innovativeness

Hypothesis: the relevant null and alternative hypotheses are stated as

H^{6o}: There is no significant relationship between an entrepreneur's level of Innovativeness and them growing up within an entrepreneurial or non-entrepreneurial family.

H^{6a}: There is a significant relationship between an entrepreneur's level of Innovativeness and them growing up within an entrepreneurial or non-entrepreneurial family.

Discussion:

Based on the correlation and regression tests conducted, the following could be derived about the Innovativeness characteristic:

- Correlation Test = 0.094 indicates that there is **no significant correlation** between the family context and entrepreneurial characteristics, although a very low correlation.
- Correlation Significance = 0.396 indicates that there could be **other factors** that may have an influence on the Innovativeness characteristic other than family context.
- Standardised Regression Coefficients b = -0.041 indicates that there is a **negative** causal relationship that the family context has with the entrepreneurial characteristic.

Decision:

Fail to reject the null hypothesis "There is no significant relationship between an entrepreneur's level of Innovativeness and them growing up within an entrepreneurial or non-entrepreneurial family".

Conclusion:

Since the null hypothesis cannot be rejected, it can be inferred that there is insufficient evidence to suggest that there is a positive relationship between the Family Context and the entrepreneurial characteristic of Innovativeness.

Utsch and Rauch (2000) found that a strong link existed between the entrepreneur's innovativeness and their venture performance. Mueller and Thomas (2000) also indicate that entrepreneurs are found to be more innovative than non-entrepreneurs. Although well researched and founded as one of the six key characteristics of an entrepreneur, this characteristic of Innovativeness was not found to be influenced by the family context of the individual.

6.3. Other Correlations Identified

Table 17: Correlation Test Results – Further Correlations Identified

Pearson Correlations							
	Entrepreneur	LOC	NFA	PTR	TFA	SC	Inn
Entrepreneur in family	1.000	0.134	-0.083	0.009	0.107	0.222	0.094
Locus of control	0.134	1.000	-0.035	-0.013	0.115	0.092	0.181
Need for achievement	-0.083	-0.035	1.000	0.270	0.186	0.351	0.233
Propensity to take risk	0.009	-0.013	0.270	1.000	0.371	0.278	0.437
Tolerance for ambiguity	0.107	0.115	0.186	**0.371**	1.000	0.155	0.337
Self-confidence	0.222	0.092	**0.351**	**0.278**	0.155	1.000	0.484
Innovation	0.094	0.181	**0.233**	**0.437**	**0.337**	**0.484**	1.000

Apart from the hypothesis being tested in this research, the correlation tests reveal some interesting correlations between the Entrepreneurial Characteristics variables.

The variable which has the strongest correlations with other characteristics is Innovativeness. This characteristic is strongly correlated to:

- Self Confidence = 0.484
- Propensity to Take Risks = 0.437
- Tolerance for Ambiguity = 0.337
- Need for Achievement = 0.233

This finding of a positive relationship between Innovativeness and four of the other variables is a significant finding and reveal interesting findings if researched further. This finding could be used to develop research questions that aim to understand the correlations that may exist between the entrepreneurial characteristic themselves.

With Self-Confidence being the highest correlated variable to Innovativeness the questions could be posed, “Are self confident people more likely to innovate” or *vice versa*. Another question which can be posed “Is Innovativeness fuelled by the characteristics of Propensity to Take Risks, Tolerance for Ambiguity, Need for Achievement and Self-confidence”.

Other significant correlations that have been identified are the correlation between Self Confidence and the characteristics of Need for Achievement (0.351) and Propensity to Take Risks (0.278).

The last significant correlation identified is between the Tolerance for Ambiguity and Propensity to Take Risks (0.371).

All of these relationships identified, particularly the link between Self-confidence and Innovation could be used to develop research questions in future research and relationship between these variable could be investigated further.

7. Chapter 7: Conclusion

7.1. Conclusion

Table 18: Synopsis of Hypotheses Test Results

#	Construct	Hypothesis	Result
H^{1o}	Locus of Control	There is no significant relationship between an entrepreneur's level of Locus of Control and them growing up within an entrepreneurial or non-entrepreneurial family	Fail to Reject
H^{2o}	Need for Achievement	There is no significant relationship between an entrepreneur's level of Need for Achievement and them growing up within an entrepreneurial or non-entrepreneurial family	Fail to Reject
H^{3o}	Propensity to Take Risks	There is no significant relationship between an entrepreneur's level of Propensity to Take Risks and them growing up within an entrepreneurial or non-entrepreneurial family	Fail to Reject
H^{4o}	Tolerance for Ambiguity	There is no significant relationship between an entrepreneur's level of Tolerance of Ambiguity and them growing up within an entrepreneurial or non-entrepreneurial family	Fail to Reject
H^{5o}	**Self-confidence**	**There is no significant relationship between an entrepreneur's level of Self-confidence and them growing up within an entrepreneurial or non-entrepreneurial family**	**Reject**
H^{6o}	Innovation	There is no significant relationship between an entrepreneur's level of Innovativeness and them growing up within an entrepreneurial or non-entrepreneurial family.	Fail to Reject

The objective of this research was to understand the influence of an individual's family context, viz. entrepreneurial or non-entrepreneurial family, on the strength or weakness of the individual's entrepreneurial characteristics.

From the literature that has been reviewed within the field of entrepreneurship, it was established that:

- There is no universal definition for an entrepreneur.
- Six personality characteristics were identified as key traits that an entrepreneur should embody in order to be successful.
- There is extensive criticism of the traits theory being isolated from environmental variables.
- Process orientated, Cognitive and Modelling theories have evolved to take into account the entrepreneurs environment when understanding traits.
- Within the frameworks of these theories, the family context, amongst many other environmental factors, plays a significant role in developing the entrepreneur's psychological characteristics.
- Academics have for long attempted to find the single magic ingredient that fuels the entrepreneurial fire, but have failed.
- Entrepreneurship is a complex construct, which has many relationships and dependencies and cannot be boxed within a single theory.

It is within this context that this research paper attempts to explore the family context variable and understand its influence in the development of entrepreneurial characteristics (traits).

The research set out to test each of the six entrepreneurial characteristics against the family context of the individual in order to determine if there were any relationships. From the data collected and the analysis performed, it was found that only one of the six characteristics has a significant relationship with the family context.

The Self-confidence personality characteristic showed a significant and relevant relationship to the individual's family context. The analysis also showed the self-confidence characteristic was largely established by the family context and not any other external variables. None of the remaining characteristics showed any significant relationship to the family context.

This finding is significant to the understanding of the environmental factors that influence the development of entrepreneurial characteristics. If family context does not play a significant role in the development of the other five entrepreneurial characteristics, what other environmental factors could do so?

Within the process, cognitive and modelling theories, the environment will significantly influence the development of an entrepreneur. Further research in understanding and testing environmental factors other than family context, may bring us closer to understanding what factors significantly influence the development of the entrepreneurial characteristics. The results of this research suggest that family context is not one of those significant environmental factors.

7.2. Recommendations

- This research provides a general basis for future research in the areas of environmental variables that influence the development of entrepreneurial characteristics.
- This research, although testing the relationship between entrepreneurial characteristics and family context, has identified significant relationships between the six entrepreneurial characteristics. This could be used as the basis for future research aiming to understand the causal relationship between the characteristics.
- Entrepreneurial characteristics are largely not developed by family context variables, i.e. an entrepreneurial family. Therefore, individuals who aspire to become entrepreneurs and have not grown up in an entrepreneurial family as not necessarily at a disadvantage. Other external factors influence the development of most entrepreneurial characteristics.
- In the light of self-confidence being found to be influenced by an entrepreneurial family context and the theories of modelling discussed in this research, individuals wanting to develop the self-confidence characteristics may require role models to effectively facilitate this development.
- Current organisations focussed on developing entrepreneurs in South Africa may need to further research the environmental factors that influence the development of the other five characteristics. This understanding may aid in the effective education and development of entrepreneurs that this country's economy desperately requires.

7.3. Future Research

The research, survey and data analysis have provided some insights which could feed into other areas of research within the entrepreneurial field. Research questions could be developed on the following findings:

- A larger proportion of individuals from non-entrepreneurial families had chosen to become entrepreneurs. Future research could explore the relationship between family context and business ownership.
- A larger proportion of individuals from non-entrepreneurial families had chosen to have 80% to 100% ownership stake in their business, far more than the entrepreneurial family group. Future research could explore the relationship between family context and business ownership stake.
- Self-confidence was found to be the only characteristic to have a positive relationship with the family context. What exactly has caused the relationship to exit, was not investigated. Future research could explore the specific relationship between these two variables in greater detail.
- Innovativeness was found to be strongly correlated to Self-confidence. This could be used to derive a number of research questions regarding this relationship. Further research could explore the causal relationship between these two characteristics.
- Innovativeness was also found to be correlated to 3 other characteristics, viz. Propensity to Take Risks, Tolerance for Ambiguity and Need for Achievement. Further research could explore the causal relationship between these 3 characteristics and Innovativeness.
- A significant correlation was identified between Self Confidence and the characteristics of Need for Achievement and Propensity to Take Risks.

Further research could explore the causal relationship between these characteristics.

- A significant correlation was identified between Tolerance for Ambiguity and Propensity to Take Risks. Further research could explore the causal relationship between these two characteristics.

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Appendix A: Research Survey Questionnaire

Welcome

Thank you for taking the time to participate in this survey.

The survey is being used for a research report that I am completing as part of my MBA studies at the Gordon Institute of Business Science (GIBS)

I am researching the relationship between family context variables of individuals during their formative years and their entrepreneurial characteristics. The survey is designed for both entrepreneurs and business/corporate employees.

This survey is entirely anonymous with no record of your name or any of your particulars. It is important for this study that you provide an accurate assessment to the questions, as they will form the foundation upon which the hypotheses will be tested.

Descriptive Information

1. Age

- ◯ Below 25
- ◯ 25 to 29
- ◯ 30 to 34
- ◯ 35 to 40
- ◯ 40 to 44
- ◯ 45 to 50
- ◯ Above 50

2. Gender

- ◯ Male
- ◯ Female

3. Race/Ethnic group

- ◯ Black
- ◯ White
- ◯ Indian
- ◯ Coloured
- ◯ Asian
- ◯ Other
- ◯ Prefer not to answer question

Other (please specify)

4. Are you an employee within a business/organization, of which you do not own/co-own?

- ◯ Yes
- ◯ No

Employed in a business/corporate

1. What is the size of the business within which you are employed?

- ◯ A large corporate/multi-national (> 1000 employees)
- ◯ A large business (between 500 and 1000 employees)
- ◯ A medium business (between 100 and 500 employees)
- ◯ A small business (<100 employees)

2. Are you within a sales or business development role?

- ◯ Yes
- ◯ No

Business ownership

1. Do you currently own/co-own a business?

- ◯ Yes
- ◯ No

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Business owner

1. What is the nature of the business you own/co-own?

- ◯ A professional practice (eg. doctor, lawyer, architect)
- ◯ A small business (<100 employees)
- ◯ A medium business (between 100 and 500 employees)
- ◯ A large business (>500 employees)

2. What is your ownership stake in the business?

- ◯ 1 to 19%
- ◯ 20 to 39%
- ◯ 40 to 59%
- ◯ 60 to 79%
- ◯ 80 to 100%

3. What is the nature of your involvement in the management of the business?

- ◯ Full time involvement
- ◯ Part time involvement
- ◯ No involvement

4. How long have you owned/co-owned the business?

- ◯ Less than 1 year
- ◯ 1 to 3 years
- ◯ 3 to 5 years
- ◯ 5 to 10 years
- ◯ More than 10 years

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Family Context

1. Select the number of years you have lived (in the same house) with each of these family members

	0	0 to 2	3 to 5	6 to 10	More than 10
Grandfather	◯	◯	◯	◯	◯
Grandmother	◯	◯	◯	◯	◯
Father	◯	◯	◯	◯	◯
Mother	◯	◯	◯	◯	◯
Brother	◯	◯	◯	◯	◯
Sister	◯	◯	◯	◯	◯
Uncle	◯	◯	◯	◯	◯
Aunt	◯	◯	◯	◯	◯
Cousin	◯	◯	◯	◯	◯

2. During the period of your life from birth to 21 years of age, have any of the family members above been entrepreneurs (i.e. owned or co-owned a business and were actively involved in the management of the business)

◯ Yes
◯ No

Entrepreneurs in family

1. During the period of your life from birth to 21 years of age, which family members were entrepreneurs (ie. owned or co-owned a business and were actively involved in the management of the business)?

☐ Grandfather
☐ Grandmother
☐ Father
☐ Mother
☐ Brother
☐ Sister
☐ Uncle
☐ Aunt
☐ Cousin

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Entrepreneurial Characteristics

1. This section contains some statements intended to provide an insight into your personality characteristics. It is important for this study that you give an honest assessment of each of the statements. Please note that all responses to this survey are kept entirely anonymous.

Please indicate the extent to which you agree or disagree with each of the following statements by selecting the appropriate level

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1. People's misfortunes result from the mistakes they make	◯	◯	◯	◯	◯
2. I take pleasure in responding to challenges, so competition makes me work harder	◯	◯	◯	◯	◯
3. I do not care if the profit is small so long as it is assured and constant	◯	◯	◯	◯	◯
4. Job security is extremely important to me	◯	◯	◯	◯	◯
5. I accomplish most when I am alone, under no direct supervision of anyone	◯	◯	◯	◯	◯
6. I avoid changing the way things are done	◯	◯	◯	◯	◯
7. Many of the unhappy things in people's lives are partly due to bad luck.	◯	◯	◯	◯	◯
8. I do not like a well-paid job if I cannot derive a sense of achievement and satisfaction from it.	◯	◯	◯	◯	◯
9. I am willing to take high risks for high returns	◯	◯	◯	◯	◯
10. A good job is one with clear instructions as to what is to be done and how it is to be done	◯	◯	◯	◯	◯
11. I have confidence in my ability to achieve	◯	◯	◯	◯	◯
12. While others see nothing unusual in the surroundings, I am able to perceive in it opportunities for business	◯	◯	◯	◯	◯

Entrepreneurial Characteristics 2

1. Continued...

Please indicate the extent to which you agree or disagree with each of the following statements by selecting the appropriate level

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
13. I do not enjoy outcomes, no matter how favourable, if they do not stem from my own efforts	◯	◯	◯	◯	◯
14. I want to earn only as much as possible to attain a comfortable way of life	◯	◯	◯	◯	◯
15. I do not mind working under conditions of uncertainty as long as there is a reasonable probability of gains from it for me	◯	◯	◯	◯	◯
16. I enjoy working in unstructured situations	◯	◯	◯	◯	◯
17. I have weaknesses and fears that are far from being resolved	◯	◯	◯	◯	◯
18. I am able to beat around difficulties through strokes of ingenuity and resourcefulness	◯	◯	◯	◯	◯
19. I am willing to accept both positive and negative consequences of my decisions and actions	◯	◯	◯	◯	◯
20. I do not mind routine, unchallenging work if the pay is good	◯	◯	◯	◯	◯
21. I do not fear investing my money on a venture whose dividends I have calculated	◯	◯	◯	◯	◯
22. I have a work schedule which I try to follow very carefully	◯	◯	◯	◯	◯
23. I doubt my ability to cope under new, untested conditions	◯	◯	◯	◯	◯
24. I believe there are always new and better ways of doing things	◯	◯	◯	◯	◯

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Entrepreneurial Characteristics 3

1. Continued...

Please indicate the extent to which you agree or disagree with each of the following statements by selecting the appropriate level

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
25. It is I, not luck nor fate, which influence the outcome of events in my life	◯	◯	◯	◯	◯
26. When I do something, I see to it that it does not only get done but is done with excellence	◯	◯	◯	◯	◯
27. I will consider a risk worth taking only if the probability for success is 60% or more	◯	◯	◯	◯	◯
28. It bothers me when several people have over- lapping responsibilities	◯	◯	◯	◯	◯
29. I find difficulty in asserting myself against the opinion of majority	◯	◯	◯	◯	◯
30. I find it difficult to come up with new, wild or even crazy ideas	◯	◯	◯	◯	◯
31. I cannot wait and watch things happen; I prefer to make things happen	◯	◯	◯	◯	◯
32. I hire people on the basis of friendship and other relations (for their loyalty) rather than on the basis of competence	◯	◯	◯	◯	◯
33. I fear moving into a new undertaking I know nothing about	◯	◯	◯	◯	◯
34. Even if I am capable, hardworking and ambitious, if I do not have the money, I cannot start a business	◯	◯	◯	◯	◯
35. In unclear situations, I like to make decisions and take the "lead"	◯	◯	◯	◯	◯
36. I believe success is a product of luck and fate rather than personal effort	◯	◯	◯	◯	◯

Thank You

You have reached the end of the survey!

Thank you for taking the time to complete the survey. Your contribution to my research is greatly appreciated.

If you would like a synopsis of my research findings please let me know by sending me an email to kamal.patel@accenture.com . I will gladly email you a copy once I have completed the research report towards the end of November.

Have a fabulous day!

Thanks

Kamal

Appendix B: Descriptive Statistics

Descriptive Statistics of Survey Results: All Respondents

	Age	Gender	Race	Are you an employee within a business/ organization, of which you do not own/co-own?	What is the size of the business within which you are employed?	Are you within a sales or business development role?	Do you currently own/ co-own a business?	What is the nature of the business you own/co-own?	What is your ownership stake in the business?	Level of involvement	Age of business	Entrepreneur in family
Valid cases	84.00	84.00	84.00	84.00	44.00	44.00	84.00	49.00	49.00	49.00	49.00	84.00
Mean	3.42	1.37	2.60	1.48	1.61	1.50	1.42	1.76	3.31	1.31	2.78	1.35
Std. error of mean	0.16	0.05	0.11	0.05	0.16	0.08	0.05	0.09	0.20	0.09	0.18	0.05
Variance	2.10	0.24	1.09	0.25	1.08	0.26	0.25	0.40	1.93	0.38	1.51	0.23
Std. Deviation	1.45	0.49	1.04	0.50	1.04	0.51	0.50	0.63	1.39	0.62	1.23	0.48
Variation Coefficient	0.42	0.35	0.40	0.34	0.64	0.34	0.35	0.36	0.42	0.47	0.44	0.36
rel. V.coefficient(%)	4.63	3.87	4.38	3.71	9.71	5.08	3.82	5.13	6.00	6.77	6.33	3.88
Skew	0.96	0.55	1.67	0.10	1.37	0.00	0.34	0.76	0.05	1.89	0.24	0.66
Kurtosis	0.82	-1.67	6.10	-1.97	0.34	-1.95	-1.86	1.99	-1.28	2.26	-0.79	-1.54
Minimum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Maximum	7.00	2.00	7.00	2.00	4.00	2.00	2.00	4.00	5.00	3.00	5.00	2.00
Range	6.00	1.00	6.00	1.00	3.00	1.00	1.00	3.00	4.00	2.00	4.00	1.00
Sum	287.00	115.00	218.00	124.00	71.00	66.00	119.00	86.00	162.00	64.00	136.00	113.00
1st percentile	----	----	----	----	----	----	----	----	----	----	----	----
5th percentile	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10th percentile	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00
25th percentile	3.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00	1.00
Median	3.00	1.00	3.00	1.00	1.00	1.50	1.00	2.00	3.00	1.00	3.00	1.00
75th percentile	4.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	5.00	1.00	4.00	2.00
90th percentile	5.50	2.00	3.00	2.00	3.50	2.00	2.00	2.00	5.00	2.00	5.00	2.00
95th percentile	7.00	2.00	4.00	2.00	4.00	2.00	2.00	3.00	5.00	3.00	5.00	2.00
99th percentile	----	----	----	----	----	----	----	----	----	----	----	----
Geom. mean	3.12	1.29	2.40	1.39	1.38	1.41	1.33	1.64	2.98	1.21	2.48	1.27

Descriptive Statistics of Survey Results: Entrepreneurial Family Respondents

	Age	Gender	Race	Are you an employee within a business/ organization, of which you do not own/co-own?	What is the size of the business within which you are employed?	Are you within a sales or business development role?	Do you currently own/ co-own a business?	What is the nature of the business you own/co-own?	What is your ownership stake in the business?	Level of involvement	Age of business
Valid cases	55.00	55.00	55.00	55.00	33.00	33.00	55.00	30.00	30.00	30.00	30.00
Mean	3.18	1.31	2.75	1.40	1.64	1.45	1.45	1.83	3.07	1.27	2.80
Std. error of mean	0.17	0.06	0.12	0.07	0.18	0.09	0.07	0.12	0.25	0.10	0.25
Variance	1.63	0.22	0.79	0.24	1.11	0.26	0.25	0.42	1.86	0.27	1.82
Std. Deviation	1.28	0.47	0.89	0.49	1.06	0.51	0.50	0.65	1.36	0.52	1.35
Variation Coefficient	0.40	0.36	0.32	0.35	0.64	0.35	0.35	0.35	0.44	0.41	0.48
rel. V.coefficient(%)	5.42	4.80	4.35	4.76	11.23	6.05	4.66	6.45	8.11	7.51	8.80
Skew	1.08	0.85	2.02	0.42	1.31	0.19	0.19	0.98	0.31	1.86	0.21
Kurtosis	2.01	-1.25	9.04	-1.79	0.17	-1.90	-1.93	3.02	-1.02	2.64	-1.01
Minimum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Maximum	7.00	2.00	7.00	2.00	4.00	2.00	2.00	4.00	5.00	3.00	5.00
Range	6.00	1.00	6.00	1.00	3.00	1.00	1.00	3.00	4.00	2.00	4.00
Sum	175.00	72.00	151.00	77.00	54.00	48.00	80.00	55.00	92.00	38.00	84.00
1st percentile	----	----	----	----	----	----	----	----	----	----	----
5th percentile	1.00	1.00	1.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10th percentile	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.10	1.00	1.00
25th percentile	3.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00
Median	3.00	1.00	3.00	1.00	1.00	1.00	1.00	2.00	3.00	1.00	3.00
75th percentile	4.00	2.00	3.00	2.00	2.50	2.00	2.00	2.00	5.00	1.25	4.00
90th percentile	5.00	2.00	3.00	2.00	3.60	2.00	2.00	2.00	5.00	2.00	5.00
95th percentile	6.20	2.00	4.20	2.00	4.00	2.00	2.00	3.45	5.00	2.45	5.00
99th percentile	----	----	----	----	----	----	----	----	----	----	----
Geom. mean	2.93	1.24	2.62	1.32	1.40	1.37	1.37	1.72	2.75	1.19	2.45

Descriptive Statistics of Survey Results: Non-Entrepreneurial Family Respondents

	Age	Gender	Race	Are you an employee within a business/ organization, of which you do not own/co-own?	What is the size of the business within which you are employed?	Are you within a sales or business development role?	Do you currently own/ co-own a business?	What is the nature of the business you own/ co-own?	What is your ownership stake in the business?	Level of involvement	Age of business
Valid cases	29.00	29.00	29.00	29.00	11.00	11.00	29.00	19.00	19.00	19.00	19.00
Mean	3.86	1.48	2.31	1.62	1.55	1.64	1.34	1.63	3.68	1.37	2.74
Std. error of mean	0.31	0.09	0.23	0.09	0.31	0.15	0.09	0.14	0.32	0.17	0.24
Variance	2.77	0.26	1.58	0.24	1.07	0.25	0.23	0.36	1.89	0.58	1.09
Std. Deviation	1.66	0.51	1.26	0.49	1.04	0.50	0.48	0.60	1.38	0.76	1.05
Variation Coefficient	0.43	0.34	0.54	0.30	0.67	0.31	0.36	0.37	0.37	0.56	0.38
rel. V.coefficient(%)	8.00	6.37	10.10	5.66	20.21	9.30	6.68	8.40	8.57	12.76	8.77
Skew	0.63	0.07	1.91	-0.52	1.81	-0.65	0.69	0.30	-0.36	1.76	0.26
Kurtosis	-0.31	-1.92	5.31	-1.66	1.80	-1.40	-1.47	-0.45	-1.10	1.23	-0.06
Minimum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Maximum	7.00	2.00	7.00	2.00	4.00	2.00	2.00	3.00	5.00	3.00	5.00
Range	6.00	1.00	6.00	1.00	3.00	1.00	1.00	2.00	4.00	2.00	4.00
Sum	112.00	43.00	67.00	47.00	17.00	18.00	39.00	31.00	70.00	26.00	52.00
1st percentile	----	----	----	----	----	----	----	----	----	----	----
5th percentile	1.50	1.00	1.00	1.00	----	----	1.00	1.00	1.00	1.00	1.00
10th percentile	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00
25th percentile	3.00	1.00	1.50	1.00	1.00	1.00	1.00	1.00	3.00	1.00	2.00
Median	3.00	1.00	2.00	2.00	1.00	2.00	1.00	2.00	3.00	1.00	3.00
75th percentile	5.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	5.00	1.00	3.00
90th percentile	7.00	2.00	4.00	2.00	3.80	2.00	2.00	2.00	5.00	3.00	4.00
95th percentile	7.00	2.00	5.50	2.00	----	----	2.00	3.00	5.00	3.00	5.00
99th percentile	----	----	----	----	----	----	----	----	----	----	----
Geom. mean	3.52	1.40	2.04	1.54	1.33	1.55	1.27	1.53	3.38	1.23	2.53

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Descriptive Statistics of Survey Results: Entrepreneurial Characteristics

Locus of Control:

Entrepreneurial Family							Non-Entrepreneurial Family					
	Percentage						Percentage					
Total	1	2	3	4	5	Statement	1	2	3	4	5	Total
100	4	42	18	27	9	1. People's misfortunes result from the mistakes they make	7	38	17	28	10	**100**
100	0	13	20	47	20	7. Many of the unhappy things in people's lives are partly due to bad luck *(R)*	4	4	21	41	31	**100**
100	20	55	5	20	0	13. I do not enjoy outcomes, no matter how favourable, if they do not stem from my own efforts	21	59	4	14	4	**100**
100	0	2	0	56	42	19. I am willing to accept both positive and negative consequences of my decisions and actions	0	0	4	69	28	**100**
100	2	13	15	47	24	25. It is I, not luck nor fate, which influence the outcome of events in my life	0	4	14	48	34	**100**
100	0	7	11	58	24	36. I believe success is a product of luck and fate rather than personal effort *(R)*	0	0	7	55	38	**100**
	0	0	42	58	0	**Frequency**	0	0	31	66	4	
	4	19	16	45	20	**Mean**	5	15	14	46	21	
	0	13	15	47	24	**Median**	0	4	14	48	28	
	7	21	14	16	13	**Standard Deviation**	8	24	10	20	15	

Need for Achievement:

Entrepreneurial Family							Non Entrepreneurial Family					
	Percentage						Percentage					
Total	1	2	3	4	5	Statement	1	2	3	4	5	Total
100	0	2	0	46	54	*2. I take pleasure in responding to challenges, so competition makes me work harder*	0	4	7	38	52	**100**
100	2	7	11	47	33	*8. I do not like a well-paid job if I cannot derive a sense of achievement and satisfaction from it.*	4	7	7	41	41	**100**
100	9	20	4	42	25	*14. I want to earn only as much as possible to attain a comfortable way of life (R)*	17	14	4	38	28	**100**
100	2	15	15	46	24	*20. I do not mind routine, unchallenging work if the pay is good (R)*	4	14	10	55	17	**100**
100	0	0	5	55	40	*26. When I do something, I see to it that it does not only get done but is done with excellence*	0	7	7	48	38	**100**
100	2	2	4	56	36	*32. I hire people on the basis of friendship and other relations (for their loyalty) rather than on the basis of competence (R)*	0	4	10	41	41	**100**
	0	0	4	73	24	**Frequency**	0	4	7	67	24	
	3	8	6	52	34	**Mean**	4	8	7	47	34	
	2	5	4	47	33	**Median**	0	7	7	41	38	
	3	8	5	11	11	**Standard Deviation**	6	4	2	11	12	

Propensity to Take Risks:

Entrepreneurial Family							Non Entrepreneurial Family					
	Percentage						Percentage					
Total	1	2	3	4	5	Statement	1	2	3	4	5	Total
100	13	29	15	36	7	3. I do not care if the profit is small so long as it is assured and constant *(R)*	4	55	4	24	14	**100**
100	2	13	20	45	20	9. I am willing to take high risks for high returns	10	17	10	35	28	**100**
100	6	7	7	69	11	15. I do not mind working under conditions of uncertainty as long as there is a reasonable probability of gains from it for me	10	17	4	48	21	**100**
100	2	6	6	75	13	21. I do not fear investing my money on a venture whose dividends I have calculated	10	7	0	62	21	**100**
100	9	51	24	15	2	27. I will consider a risk worth taking only if the probability for success is 60% or more *(R)*	7	55	21	17	0	**100**
100	4	18	11	44	24	33. I fear moving into a new undertaking I know nothing about *(R)*	4	14	7	55	21	**100**
	5	18	12	51	14	**Frequency**	0	10	35	55	0	
	4	13	11	45	13	**Mean**	6	25	12	42	15	
	3	17	8	22	9	**Median**	7	17	7	48	21	
	5	18	12	51	14	**Standard Deviation**	4	21	12	17	11	

Tolerance for Ambiguity:

Entrepreneurial Family							Non Entrepreneurial Family					
	Percentage						Percentage					
Total	1	2	3	4	5	Statement	1	2	3	4	5	Total
100	20	46	7	24	4	*4. Job security is extremely important to me (R)*	14	45	4	10	28	100
100	20	31	9	25	15	*10. A good job is one with clear instructions as to what is to be done and how it is to be done (R)*	21	14	14	35	17	100
100	11	24	22	33	11	*16. I enjoy working in unstructured situations*	17	17	28	24	14	100
100	3	38	11	35	13	*22. I have a work schedule which I try to follow very carefully (R)*	3	28	7	52	10	100
100	9	36	16	31	7	*28. It bothers me when several people have over-lapping responsibilities (R)*	4	48	14	28	7	100
100	4	5	7	66	18	*35. In unclear situations, I like to make decisions and take the "lead"*	0	7	14	48	31	100
	0	13	55	31	2	**Frequency**	0	10	48	34	7	
	10	28	18	35	10	**Mean**	8	24	18	33	16	
	9	31	11	31	11	**Median**	4	17	14	34	14	
	8	15	17	14	6	**Standard Deviation**	9	17	15	14	10	

Self Confidence:

Entrepreneurial Family							Non Entrepreneurial Family					
	Percentage						Percentage					
Total	1	2	3	4	5	Statement	1	2	3	4	5	Total
100	4	15	7	38	36	*5. I accomplish most when I am alone, under no direct supervision of anyone*	4	7	21	35	35	**100**
100	2	0	4	33	62	*11. I have confidence in my ability to achieve*	0	0	0	38	62	**100**
100	4	29	15	38	15	*17. I have weaknesses and fears that are far from being resolved (R)*	0	14	10	55	21	**100**
100	4	2	0	62	33	*23. I doubt my ability to cope under new, untested conditions (R)*	4	0	7	48	41	**10**
100	2	13	11	47	28	*29. I find difficulty in asserting myself against the opinion of majority (R)*	4	7	7	45	38	**100**
100	4	22	15	42	18	*34. Even if I am capable, hardworking and ambitious, if I do not have the money, I cannot start a business (R)*	0	7	7	55	31	**100**
	0	0	24	58	18	**Frequency**	0	0	7	62	31	
	3	12	11	45	30	**Mean**	2	5	8	48	37	
	4	13	11	42	28	**Median**	0	7	7	48	35	
	2	11	8	11	16	**Standard Deviation**	2	5	6	10	13	

Innovativeness:

Entrepreneurial Family							Non Entrepreneurial Family					
	Percentage						Percentage					
Total	1	2	3	4	5	Statement	1	2	3	4	5	Total
100	4	12	9	47	27	*6. I avoid changing the way things are done (R)*	0	10	4	52	35	**100**
100	2	2	15	51	31	*12. While others see nothing unusual in the surroundings, I am able to perceive in it opportunities for business*	0	7	17	55	21	**100**
100	0	7	4	69	20	*18. I am able to beat around difficulties through strokes of ingenuity and resourcefulness*	0	0	17	55	28	**100**
100	2	0	4	35	60	*24. I believe there are always new and better ways of doing things*	0	0	7	48	45	**100**
100	2	16	4	47	31	*30. I find it difficult to come up with new, wild or even crazy ideas (R)*	0	7	14	48	31	**100**
100	0	2	16	64	18	**Frequency**	0	0	10	69	21	**100**
	1	6	11	53	29	**Mean**	0	3	11	56	30	
	2	2	9	51	27	**Median**	0	0	10	55	31	
	2	6	8	12	15	**Standard Deviation**	0	4	5	8	8	

Appendix C: Research Paper Design - Mind Map