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Opportunity recognition levels among IT entrepreneurs in South Africa.

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OPPORTUNITY RECOGNITION LEVELS AMONG IT ENTREPRENEURS IN SOUTH AFRICA

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A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master Of Management in Entrepreneurship and New Venture Creation

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ABSTRACT

The following study seeks to find out the importance of opportunity recognition and look at three factors which affect opportunity recognition. These factors lead to opportunity recognition. The three factors are alertness, prior knowledge and active search of opportunities. The study is conducted in the South African context and will focus on entrepreneurs operating in this environment. The study overall sets to address the problem of entrepreneur orientation in South Africa (GEM Report, 2009) by looking at an increase in opportunity recognition as a means of increasing entrepreneurial activity in the economy. The review of literature of various articles on all the four variables was conducted and showed the importance and of studies of this kind. The literature also reviewed studies which were done which are like this study and the results of that study where be compared to the results of this study.

The study is a purely quantitative study and made use of an online survey questionnaire to collect the data. The responses of the data where then run through various tests including regression, reliability and validity test. The study found that opportunity recognition is essential for the individual and business to lead to growth and new opportunities. The alertness, knowledge and search variables where measured and analysed against opportunity recognition. The results revealed that these variables are connected to opportunity recognition, with weak support in some tests. The descriptive statistics showed high agreement with the questions. The responses of the questions also revealed the demographic information of the entrepreneurs and their ventures on the South African environment. The dependent and independent variables are interconnected with a causal relationship which is to be expected.

DECLARATION

I, Miriam Gunda, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in Entrepreneurship and New Venture Creation, at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Miriam Gunda

Signed at ……

On the …….. Day of …… 2013

DEDICATION

This research is dedicated to my family.

To my husband Oliver Kimathi for being understanding during the time I had to be away to be in school and providing a lot of encouragement and telling me to keep believing in myself.

To my parents Isaac and Sophie Gunda for encouraging me to do this course and for their unwavering support.

To my children Wayne and Walter Kimathi for keeping me grounded and putting a smile on my face when it was hard.

To my family and friends I can't mention you all, but I always am grateful and thank you for showing me that family can get you through anything.

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I would like to acknowledge my supervisor Dr Jose Barreira for his guidance and encouragement. I would like to also thank Merle Werbaloff for her help in the number crunching and analysis. I would like to also the participants of my research survey questionnaire for their time. I would like to thank my friends who kept encouraging me and being a sounding board of my thoughts.

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LIST OF ABBREVIATIONS

GEM	Global Entrepreneurship Monitor
OR	Opportunity Recognition
IT	Information and Technology

1. CHAPTER 1: INTRODUCTION

One of the driving forces in entrepreneurship is the ability to recognise and exploit opportunities. According to Baron “opportunity recognition is the process through which ideas for potentially profitable new business ventures are identified” (Baron & Ensley 2006). The authors continue to state that the opportunity recognition process also entails pattern recognition which is important in the discovery of opportunities. Entrepreneurial opportunity recognition relies on the ability to notice patterns in the environment and various arrays of situations. These patterns can be identified by being alert, searching for opportunities and prior knowledge. The three elements are central in the recognition of opportunities. Recognition of entrepreneurial opportunities leads to the formation of new businesses, which is mostly the function of entrepreneurship. This makes the identification of opportunities a cornerstone of entrepreneurship. The research will adapt a model by Baron which illustrates that alertness, search and prior knowledge are significant in opportunity recognition and they are elements in pattern recognition (Baron, 2006). The model will be applied to the South African context and is the base of this research. Baron (2006) also reiterates that opportunity recognition is the base which entrepreneurial ventures are commenced. According to Shane (2000) discovery opportunities by individuals is due to their ability to process information, search techniques and scanning behaviour make them more likely to notice opportunities.

Alertness, knowledge and search have to be understood by the active entrepreneur and potential entrepreneurs in the identification of opportunities. In entrepreneurship when an individual identifies an opportunity this is a first step to the formation of a venture.

1.1 Purpose of the study

The purpose of this research is to look at the key elements recognising entrepreneurial opportunities and how these elements lead to identification of opportunities. These elements are search for opportunities, prior knowledge and

alertness are important in the detection of entrepreneurial opportunities. Shane argues that discovering opportunities to exploit new technology happens well before change in technologies lead to new processes, markets, products or ways of organizing (Shane 2000).

Opportunity recognition still remains under researched (Shane & Eckhardt, 2003) and looking at the dynamics of this topic will bring further understanding of it. The research will add to the body of knowledge on entrepreneurship which is low in the South African context. It will give a review of how and which are the dynamics of the entrepreneurial environment in the economy. The discovery of entrepreneurial opportunities is viewed as gradually and systematically pushing back the boundaries of sheer ignorance and increasing the mutual awareness among market participants, therefore driving prices, output and input toward the values consistent with equilibrium (Kirzner, 1997).

1.2 Context of the study

Entrepreneurship in recent years has become a subject for research and has gained its place as a significant subject. Entrepreneurship is a driving force in the growth and development of the economy. South Africa is the largest economy in Africa and also a vibrant emerging economy accommodating many economic activities.

The GEM has been acknowledged as providing new insights in empirical data on entrepreneurship as a process of forming new ventures; it closes the knowledge gaps in entrepreneurship (Wong, Ho & Autio, 2005). The GEM report is based on the whole economy giving an overview of the state of the entrepreneurship in the South African economy.

The South African economy is the largest in Africa and it has various industries contributing to its GDP. South Africa together with Brazil, India and China have been labelled as southern engines of global growth (UNU – WIDER, 2007).

1.3 Problem statement

1.3.1 *Main problem*

To analyse the key factors in the recognition of opportunities. A positive increase in recognition leads to increase in the entrepreneurial orientation mainly start-up of new ventures.

1.3.2 *Sub-problem 1*

The first sub-problem is to explain the importance and role of opportunity recognition in entrepreneurship.

1.3.3 *Sub-problem 2*

The second sub-problem is to assess three key factors in the opportunity recognition process.

1.4 Significance of the study

The study fills a gap of entrepreneurial orientation in South Africa. According to the GEM report 2009 South Africa has tremendously low levels of entrepreneurial activity/orientation and improving the environment and attitudes is crucial in fostering entrepreneurship. This research looks at this problem by focusing on opportunity recognition. Gaglio and Katz (2001, p. 95) stated that the “understanding the opportunity identification process represents one of the core intellectual questions for the domain of entrepreneurship.” The understanding of opportunity recognition and how it comes about leads to the formation of new ventures, which is the core of entrepreneurship.

Studies have been done previously on opportunity recognition and also factors leading to opportunity recognition Gaglio and Katz, 2001; Corbett, 2007; Shane, 2000; Eckhardt and Shane 2003; Venkataraman, 1997; Baron, 2006; Tang, Kacmar and Busentitz 2010, however, these studies have been largely done in developed economies- American and European contexts. The GEM report

(2009) notes that emerging economies like South Africa have various changes in the environment therefore being able to identify opportunities will increase entrepreneurial activities in the economy which lead to economic growth.

There has been a keen interest in the field of entrepreneurship with regards to opportunity recognition with many authors trying to understand it better. An important element of being an entrepreneur is identification of opportunities no matter where they are found and therefore making opportunity recognition an important component of the entrepreneurial process (Nicolaou, Shane, Cherkas & Spector, 2009).

Opportunity identification has been accepted as one of the most important abilities of successful entrepreneurs (Archdivili, Cardozo, and Ray, 2003) and thus has become an important element of the scholarly study of entrepreneurship (Shepherd & DeTienne 2005). Opportunity recognition and evaluation are important phenomena of entrepreneurship, it is important to understand what makes entrepreneurs pursue opportunities and the certain opportunities they choose (Podoynityna, Van der Bij and Song, 2011).

The study will provide guidance to entrepreneurs and potential entrepreneurs in understanding the entrepreneurial environment. As an entrepreneur understanding the factors which enhance opportunity recognition is valuable knowledge and leads to growth of the venture and also reduces risk of failure.

Corporate companies also look at entrepreneurship in their organisations (corporate entrepreneurship. Understanding opportunity recognition is important for corporations in getting a competitive advantage in the industry.

1.5 Delimitations of the study

- The study has a more biased focus on entrepreneurs in the Information and technology sector, however, also looks at entrepreneurs in other industries.

- The study focuses on entrepreneurs from the age of 18 years and above; however, studies have shown people below this have been known to start and maintain their ventures.

1.6 Definition of terms

Alertness - “notice without search opportunities that have hitherto been overlooked” in the environment” (Kirzner 1985, 56).

An entrepreneur is defined as an individual who recognises and exploits new business opportunities by founding new ventures (Baron 2006, Shane & Venkataraman 2000).

Entrepreneurial opportunities ‘‘are those situations in which new goods, services, raw materials, and organizing methods can be introduced and sold at greater than their costs of production’’ (Casson, 1982; Shane and Venkataraman, 2000, p. 220).

1.7 Assumptions

The first key assumption is that alertness, search and prior knowledge leads to opportunity recognition.

The second key assumption is that for the purposes of this research, opportunity recognition, opportunity identification and opportunity discover are used interchangeably, all having the same meaning.

The third key assumption is that for purposes of this research knowledge, prior knowledge, information and data are used interchangeably all having the same meaning.

2. CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

This chapter provides a theoretical framework that discusses the core constructs of the research.

The first section focuses on the entrepreneurship concept as a whole; the importance of entrepreneurship and also at the entrepreneur as an individual.

The second section will look at opportunity recognition concept, definitions, importance and role in the entrepreneurial process.

The third section looks at the key factors in opportunity recognition namely alertness, prior knowledge and active search of opportunities.

This will lead to the hypothesis and research questions raised after the literature review.

2.2 Entrepreneurship

Entrepreneurship is a subject of intense discussion and is a recognised field of importance to the growth and development of an economy. An entrepreneur has been identified as an economic agent and the driving force of the economy (Klein 2008). This has followed a wide spread interest in this subject matter and the components and processes that entail it. It is a topic of research and has established many scholars who are experts in this field. It has also become a subject taught in many institutions as a way of instilling discipline in the minds of students, that it is a viable option of employment.

Entrepreneurship is grounded in creativity and innovation which are what entrepreneurs are known for and as well as pushing forward ideas which can drastically change the environment. Innovation is of core importance in entrepreneurship (Marvel & Lumpkin 2007). Entrepreneurship should by no means be undermined but be noted to be a field which has seen the

advancement of innovation for instance Bill Gates, the late Steven Jobs who have built huge empires by tapping on innovation and creativity and also advancing changes to the market. Entrepreneurs try to bridge the gap by continuous radical ideas and bringing to the consumer a product that fulfils their need. Entrepreneurship has been termed as a linchpin between innovation, invention and introduction of new products and services in the market place as well as acting as an engine of growth in the economy (Dutta & Crossan 2005).

Entrepreneurs bring forth 'creative destruction' a theory introduced early on by Schumpeter. This theory stresses that the opportunities require new information and are innovative (Vaghley & Julien 2010). The theory puts across that the innovativeness and creativity of entrepreneurs puts the environment in disarray thereby forcing re adjustment of the market and the consumers. In these innovation and creativity is where the opportunity is found.

The Schumpeterian paradigm which bases itself on the disequilibrium generating activities of entrepreneurs who are capable of 'breaking ground', pioneering new fields, promotion of radical diversification efforts and partially or completely transforming the organisation its products, its technology and its markets in the process (Schumpeter 1934). The Kirznerian entrepreneurship focuses on the discovery of the existence of profitable discrepancies, gaps, mismatches of knowledge and information which others have not yet perceived and exploited (Hoskinson, Covin, Volberda & Johnson, 2011).

The importance of opportunities has led scholars to state that opportunity identification is an important component of the entrepreneurial process (Baron 2006). Various scholars agree and maintain that opportunity identification is a typical and fundamental entrepreneurial behaviour (Gaglio & Katz 2001; Kirzner 1979, Vekataraman 1997). Hence research into opportunity recognition provides more understanding into entrepreneurial process (Tang et al, 2010).

The function of an entrepreneur involves the recognition and realisation of new economic opportunities (Schumpeter, 1928). Venkataraman (1997) states that at the core of entrepreneurship lies opportunity recognition and entrepreneurship sets out to bring understanding of how opportunities which

bring about existence of new goods and services are identified, created and exploited, by whom and under which circumstances, with what consequences.

2.3 Opportunity Recognition

The dreaming of things that do not yet exist (vision), opportunity discovery, bringing them into creation (opportunity exploitation) and the gaining of market acceptance are perhaps the most mesmerising of all entrepreneurial behaviours (Gaglio, 2004). The identification of opportunities that initiate entrepreneurial ventures is the key to the engine that starts new businesses; opportunity recognition is the progenitor of both personal and societal wealth (Venkataraman, 1997).

2.3.1 Background and definitions

In this rapidly changing world firms and individuals need to continually identify new opportunities beyond the existing competencies if they are to survive in the business environment (Shepherd & DeTienne 2005). Hansen, Shrader & Monillor (2011) state that opportunities are significant in entrepreneurship and if an opportunity is to take meaning it must be recognised, discovered or created; these are the opportunity processes. Baron and Ozgen (2007) further state that opportunity recognition is long accepted as the key of the entrepreneurial process. When opportunity identification takes place it leads to the formation of new ventures. It is widely acknowledged that the opportunity construct is central to the field of entrepreneurship, yet the origins of remain largely opaque (Wood & McKinley 2010). There is still much research to be done on opportunities so as to get better understanding which will boost entrepreneurship.

Shane and Venkataraman defined entrepreneurship as the study of “how, by whom and with what effect do opportunities to create future goods and services are discovered and evaluated and exploited” (2000, 218). Opportunities are put as an identifier of entrepreneurship and are skills with which entrepreneurs need to possess for the success of their businesses and for the entrepreneurial process to continue.

Timmons (1994) described certain qualities of an opportunity, in which it should be attractive, durable and timely and importantly has its foundation in a product and service which must create or add value for the consumer. An opportunity is not only discovered but must be meeting a need or bridging a gap in the market for it to have significant effects. Entrepreneurial opportunities are discovered or created using the entrepreneurial ideas and innovations (Timmons 1994); hence the entrepreneur is important in this process. The entrepreneur must be able to see and not limit themselves in looking at all angles no matter how 'absurd' the end result might be projected to look. Opportunities do not present themselves in an orderly straight forward manner but always have to be discovered and packaged (Venkataraman 1997).

Market imperfections also contribute to the discovery of opportunities. Cohen and Winn (2007) detailed four such imperfections.

- Firms are not perfectly efficient
- Externalities exist
- Pricing mechanisms work imperfectly
- Information is not properly distributed. The imperfect information is what creates opportunities and the poorer the information, leads to the greater number and scope of entrepreneurial opportunities. (Kirzner, 2000).

The image borne by the entrepreneur is essential; however, the reality is akin to the spawning of hurricanes over the ocean. The ideas are subjected to real world conditions and entrepreneurial activity creativity at a certain point in time. This interaction is the opportunity by which a new venture is built (Cohen & Winn, 2007).

2.3.2 Importance

The recognition and development of new opportunities are components at the heart of entrepreneurship; given the role and growth of entrepreneurship in becoming significant in today's world it is imperative to have an understanding

how new entrepreneurial opportunities get developed (Tang, Kacmar & Busenitz, 2010). There is an important need for people to identify opportunities; a skill in opportunity recognition increases the chances of one becoming an entrepreneur (Galglio & Katz, 2001; Shane, 2003; Shane & Venkataraman 2000). Several authors agree that materialization of new ideas and how they lead to opportunities which can be commercialized are central to the field of entrepreneurship (Baron 2006; Shane and Venkataraman 2000; Tang et al 2010).

Once opportunity ideas have been born it is the reaction to the ideas that eventually provides the final contours of the opportunities, there has to be action for there to be insight (Dimov, 2007). For entrepreneurial opportunities to exist there must a disagreement among the people on the value of resources at any given point in time (Eckhardt & Shane 2003). These variations in the environment lead to recognition of opportunities as those who are able to take note and pursue these differences will realise the opportunity. In the IT sector the opportunity recognition skill is very relevant, in this sector product innovations have consisted transfer of low value technology to another sector where it becomes high value (Park, 2005).

2.3.3 Types of opportunities and theories

Authors look at types of opportunities differently however both alluding to certain characteristics of opportunities. Kaish and Gilead (1991) note there are two types of opportunities

- Problem solving opportunities which entail collecting information ‘pieces’ and turning them into an anticipated whole.
- Disequilibrium opportunities refer to associative search which links unrelated information cues into a picture of opportunity.

Both types are based on correcting a problem or founded on disequilibrium in the market. Most opportunities are like this as entrepreneurs normally identify opportunities while trying to find a solution to a problem they have seen or

disequilibrium in the market which allows for them to forward and idea in trying to create equilibrium.

Other views on entrepreneurial opportunities were discussed by Dutta and Crossan (2005):

- The first is the realist/ positivist view which states that opportunities actually exist in the environment and await discovery.
- The second view is alternate interpretive/ social constructionist which states that opportunities actually emerge; meaning they are enacted on the basis of the entrepreneur's perception and the understanding of all environmental forces.

Wood and McKinley (2010) take note of the objective perspective view with regards to opportunities which argues that opportunities are created independent of the entrepreneur and therefore available to all (Shane & Venkataraman 200; Kirzner 1979; Shane 2003). The constructivist view argues that knowledge is not passively received but built up over time and through experience.

Five different loci of changes in entrepreneurship suggested by Schumpeter (1934), they are:

- Those that stem from creation of new products and services;
- THOSE that come from discovery of new geographical markets;
- THOSE that emerge for the creation or discovery of new raw materials;
- THOSE that emerge from new methods of production and
- THOSE that are generated from new ways from new ways of organizing.

Category by source based opportunities suggested by Eckhardt and Shane (2003):

- First involves consideration of opportunities from asymmetries in existing information between market participants and opportunities that result from exogenous shocks of new information.

- Second comparison lies between supply and demand side opportunities.

- Third are the differences between productivity-enhancing and rent seeking opportunities.

- The fourth lies in identifying the catalysts of change that generate the opportunities.

Cohen and Winn (2007) put forward what they termed three non-mutually exclusive views of entrepreneurial opportunity:

- The first is the allocative view which states that opportunities exist when there is a potential to redistribute resources for the betterment of some but not making others worse off.

- The second is the discovery view which states that opportunities arise out of information asymmetries with respect to the true value of resources and the resulting value of the combination of the resources into the outputs.

- The third is the creative view states that entrepreneurs seek to maximize the utility functions of multiple stakeholders and that opportunities can only truly be identified ex-post.

Successful entrepreneurs who have achieved notable success are opportunity-focused; meaning they focus on what is needed by the consumer and in the market place (Timmons 1994). This is reiterated; Identifying and selecting right opportunities for new businesses are among the most important abilities of a successful entrepreneur (Stevenson, Roberts & Grousbeck 1985).

All people are not equally skilled in identifying opportunities. One of the core questions leading to this research is why some people and not others recognise opportunities. This is a mostly asked question as to how and why some

individuals are able to discover and exploit opportunities and some are not (Venkataraman 1997, Baron & Ensley, 2006). This has been attributed to differences in individuals in several aspects, for instance prior knowledge, human capital base, networks, alertness (Hayek, 1945; Venkataraman, 1997). If the significance of opportunities is important then researchers must explain the differences people in with recognising opportunities so as to explain new business formation (Nicolau et al 2009).

The factors leading to opportunity recognition explored in this research are alertness, search and knowledge as give the bearers of these 3 having an added advantage in the entrepreneurial environment. The three variables are used to enhance the recognition of opportunities. Opportunity identification is a chance to combine resources in which might generate profits and important aspect of entrepreneurship (Nicolau, Shane & Cherkas).

Recognition of opportunities is essential for entrepreneurs so as to sustain their ventures and increase profitability. Entrepreneurs can identify wrong opportunities or completely fail to recognise any opportunities therefore making the recognition of opportunities an important part of entrepreneurship as a whole and an explanation on the detection of opportunities very important (Shane 2000).

2.3.4 Cognition

The recognition of new opportunities involves pattern recognition- a cognitive process which people identify meaningful patterns in an array of complex of event and situations (Baron & Ensley, 2006; Archdivili, Cardozo & Ray 2003). Shane and Venkataraman (2000) stated that the ability for opportunity identification is a cognitive task and allows some individuals and not others to identify opportunities. It is these patterns which forces identification of opportunities. Baron introduced a model which reflects the opportunity recognition process and showing the components involved (Baron & Ensley, 2006). Prototype theory gives insight in the nature of opportunities; and suggests that through experience persons attain prototypes, cognitive

frameworks, which represent the most typical member of a category (the instance case for the category best captures the essential meaning or nature. The application of the prototype theory to OR suggests that entrepreneurs engage in an analogous process in regards to identifying new opportunities. They specifically compare ideas for new products and services, means of production, or markets with their existing prototype for "business opportunity" (Baron and Ensley 2006). Some of the factors that are in the core of opportunity identification include entrepreneurial alertness and information asymmetries and prior knowledge (Archdivili, Cardozo & Ray 2003)

The figure below summarises the aspects of opportunity recognition:

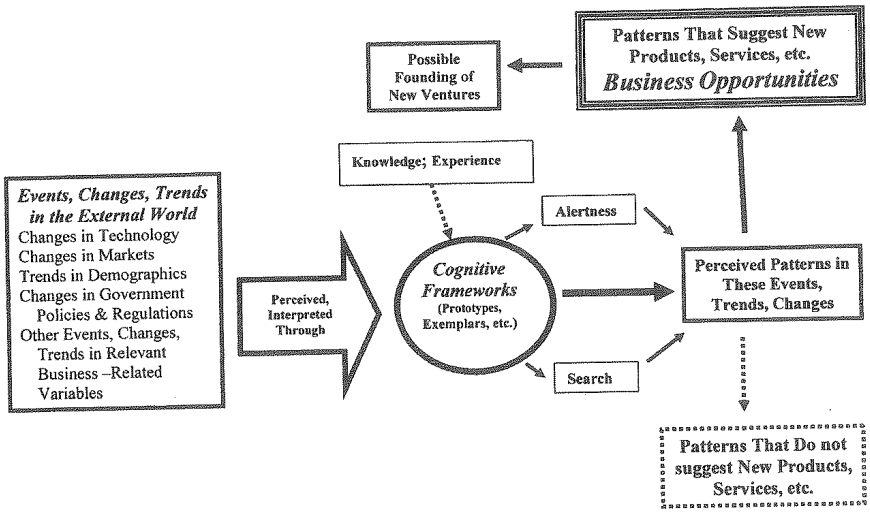


Figure 1
The Potential Role of Pattern Recognition in Opportunity Recognition

Figure 1: Source Baron & Ensley (2006).

Research found that these basic cognitive processes of pattern recognition play a role in discovering new opportunities. A considerable amount of time has gone in the opportunity recognition research and the following have received

much attention: Alertness to opportunities (the capacity to recognise them when they immediately appear), Active search and Prior knowledge (of an industry, customers, market). Prior research has reflected that these three are important and play a significant role in opportunity identification (Baron & Ensley 2006, Kaish and Gilad (1991); Tang et al. 2010; Shane and Venkataraman 2000)

People discover opportunities because their superior information processing ability, search techniques, or scanning behaviour make them more likely than other people to discover opportunities (Shaver and Scott 1991). Prior information (Shane, 2000) psychological alertness (Gaglio and Katz, 2000) pattern recognition skills (Baron and Ensley, 2006) are correlated with opportunity recognition. Creativity is also an important part of opportunity recognition; social ties enhance opportunity recognition because of useful information passed to entrepreneurs (Nicolau, Shane, Cherkas and Spector 2009)

The research into the opportunity recognition topic has increased and looks at the various angles, focusing on the antecedents of opportunity recognition (e.g. Baron and Ensley, 2006; Casson and Wadeson, 2007; Gaglio and Katz, 2001; Shane, 2000, Nicolau et al. 2009). Opportunities rise up from the changes in the environment in which the entrepreneur is operating; the disequilibrium created is what is exploited by the entrepreneur (Casson, 2005).

2.4 Alertness

Alertness is one of the cognitive engines which drive the opportunity discovery process (Tang et al 2010). Alertness is skill that an entrepreneur should possess regardless of whether they are a novice or experienced entrepreneur. Recognition of opportunities is not limited to would be entrepreneurs or novice entrepreneur but also experienced entrepreneurs as they have to grow the business and as well start other ventures. Alertness is believed to rest on the foundations of cognitive capacities possessed by individuals (capacities such as high intelligence and creativity) (Baron and Ensley 2006). The Austrian school has viewed alertness as playing a key role in the recognition and evaluation of entrepreneurial opportunities, by the individual or the firm (Simsek, Lubatkin, Veiga & Dino, 2009).

Several scholars agree that entrepreneurs are individuals who are alert to identification and discovery of opportunities more than others (L'vesque & Minute, 2006; Kirznerian, 1973; Schumpeter, 1934; Shane & Venkataraman, 2000) In an environment where opportunities frequently arise, remaining alert is profitable, which gives people an incentive to search for and be alert to entrepreneurial opportunities, and creates more entrepreneurial alertness (Eckhardt & Shane 2006).

Kirzner pioneered entrepreneurial alertness and gave two definitions "a motivated propensity of man to formulate an image of the future" (1979, 48). And also referred to alertness as the ability to "notice without search opportunities that have hitherto been overlooked" in the environment (1985, 56). Kirzner (1979) continues to assert that mental representations and interpretations of entrepreneurs do indeed differ because they are driven by entrepreneurial alertness a distinctive set of perceptual and cognitive processing skills that direct the opportunity identification process. Kirzner is a core scholar in alertness, as a key developer of the concept. He characterised individuals who were more alert as apt to having an antenna that allows recognition of gaps with limited cues (Kirzner 1973, 1979). These aforementioned alert individuals possess a "unique preparedness" in

consistently scanning the environment and ready to discover opportunities (Tang et al. 2010).

The alert entrepreneur is the one who will notice an opportunity first and seize it while the less alert will take much longer to fulfil the same – Not all entrepreneurs are created equal (Kirzner, 1979; Helbert & Link 1989). Kirzner further illustrates alertness as an individual who discovers an opportunity and buys at a low price and goes on to sell the same product at a higher price due to the intertemporal and interspatial demand differences.

Much of the empirical investigations on alertness have focused on the means by which an entrepreneur can be able to “notice without search” (Gaglio & Katz 2001). In the alertness view entrepreneurship occurs when an individual is alert to the misallocation of resources where they are not being put to maximum usage and obtains the resources, recombines and sells them at more than they cost to obtain and recombine them (Shane 2000).

Alertness is an important process and perspective that helps some individuals to be more aware of changes, shifts, opportunities and overlooked possibilities. (Tang et al, 2010). Shane (2003) stated that alertness rests, in part on cognitive capacities such as high intelligence and creativity. These capacities enable certain people to identify gaps in market, with consumers and find solutions for these and as such play a significant role in discovery of new business opportunities. At the peak of alertness entrepreneurs engage in a "passive search," in this state in which they are receptive to opportunities but not aggressively searching for them in a formal systematic manner (Baron and Ensley 2006). Entrepreneurial alertness, in its turn, is a necessary condition for the success of the opportunity identification triad: recognition, development, and evaluation (Archdivili et al. 2003)

Entrepreneurs also respond to the availability of entrepreneurial opportunities. The more opportunities available, the more alert entrepreneurs will be toward finding them (Eckhardt & Shane, 2003). Entrepreneurs find opportunities unseen by anyone else and this is due to be alert to the environment for upcoming opportunities and successful opportunities must always be alert

(Eckhardt & Shane, 2003). Alertness requires constant monitoring of the environment and is dependent on being lucky (Demsettz 1983). Luck plays a role in alertness because the outcomes of such efforts are more risky; they are uncertain (Fiet, Piskounov & Patel 2005).

In Kirznerian fashion the entrepreneur stumbles upon a previously unnoticed profit opportunity, but as Harper (1996) notes, successful entrepreneurs are often trying to be alert to opportunities (Eckhardt & Shane, 2003). Entrepreneurs must be keen in and maintaining information asymmetries which enable them to notice new opportunities that are unseen or disregarded by everyone else (Dutta & Crossan 2005). Kirzner (1973, 142) mentions that “a great volume of one awareness of one’s environment and of one’s expectations concerning the future is the result of learning experiences that occurred entirely without having been planned”.

2.5 Knowledge

Knowledge is a high value form of information which can be used to make applied decisions; this knowledge can take many forms—work experience, training, knowledge of markets, knowledge of customer problems (Corbett, 2005).

2.5.1 Definitions

It can be defined as information combined with experience, content, interpretation and reflection and involves more human input than data (Vaghley & Julien 2010). Information is a requirement in the discovery and exploitation of opportunities. Prior knowledge has also been termed to refer to an individual's distinctive information about a particular subject matter which provides the entrepreneur the ability to identify certain opportunities (Shepherd & DeTienne; Venkataraman 1997; Shane 2000). Knowledge is also referred to as the stock of meaningful data or information. An individual becomes more knowledgeable at a task through experience they become increasingly efficient (Shepherd & DeTienne 2005). Knowledge is an important aspect under human capital for the entrepreneur and makes more seemingly possible to recognize opportunities (Venter, Urban & Rwigema, 2008)

The possession of useful knowledge differs among individuals and these differences are significant (DeTienne& Chandler, 2007). The entrepreneur strives to exploit the presently available knowledge and the existing opportunities, thereby increasing the knowledge about the situation and reducing the general level of uncertainty over time. The knowledge acquired by an entrepreneur is not universally effective in discovery of and exploitation of opportunities but can possibly be detrimental in others. Therefore what is important what the one knows but what one does with this knowledge (Dimov, 2007). The conversion process of an entrepreneur's insight experience to knowledge is a critical part of the individual opportunity nexus (Venkataraman, 1997). The likelihood of entrepreneurs acting on their opportunity insights

depends on prior knowledge and on whether the learning styles match the situation at hand (Dimov, 2007).

Shane (2000) also stated that opportunities do not come in pre-packaged form, but rather people need to combine information in novel ways so as to identify opportunities. Prior knowledge increases the probability of finding opportunities; a way to reduce uncertainty is to match their search efforts to markets were they possess prior knowledge (Fiet et al. 2005).

Human capital has been closely lined with human capital variables (DeTienne & Chandler, 2007) like education, work and entrepreneurial experience, prior knowledge (Shane, 2000), experiential knowledge (Dimov, 2003) and previous entrepreneurial knowledge (Ucbasaran, Westhead, Wright & Binks, 2003)

Shane posited three types of human capital he found to impact the ability to identify opportunities;

- Prior knowledge of markets
- Prior knowledge of ways to serve markets
- Prior knowledge of consumer problems. This is reiterated by Shane and DeTienne (2004) that having prior knowledge of customer problems leads discovery of more innovative opportunities.

Similar knowledge types for recognising opportunities (Archdivili et al. 2008):

- Special interest knowledge and general industry knowledge
- Prior knowledge of markets
- Prior knowledge of customer problems
- Prior knowledge of ways to serve markets will all increase the likelihood of successful entrepreneurial opportunity recognition.

New ventures are viewed as vehicles of knowledge diffusion, the more knowledge available the more entrepreneurial opportunities available leading to

economic growth (Mueller, 2007). An individual's educational background positively affects the likelihood of discovering opportunities, because the highly educated individuals have a broader knowledge base to draw from hence a higher likelihood that they can relate this knowledge to the entrepreneurial opportunities (Cohen & Levinthal, 1990)

Austrian economics is based on the argument that entrepreneurship exists because of information asymmetry between different actors (Hayek, 1945). Shane (1999) maintains that any given entrepreneur will discover only those opportunities related to his or her prior knowledge. Any given entrepreneurial opportunity is not obvious to all potential entrepreneurs (the rationale being that all people do not possess the same information at the same time; Kirzner, 1997). Each person's idiosyncratic prior knowledge creates a ''knowledge corridor'' that allows him/her to recognize certain opportunities, but not others (Hayek, 1945; Ronstadt, 1988).

For the identification of opportunities entrepreneurs must somehow perceive, gather, interpret, and apply information about specific industries, technologies, markets, government policies and other factors (Ozgen& Baron 2007).

The possession of idiosyncratic information allows people to see particular opportunities that others cannot see, even if they are not actively searching for such opportunities (Shane, 2000). Knowledge heightens the antenna and in turn heightens the possibility of individual being able to recognise opportunities. People who are highly educated are most likely to venture into entrepreneurship and with better chances of success; due to the importance of years spent in formal education and the acquisition of specific business skills (Casson, 2005).

The different stock of information humans possess influences the ability to recognize opportunities, an individual has to have prior information which complements current information (Shane & Venkataraman 2000). The individuals' differences in access to information differences inferring that people will discover opportunities through the recognition of the value of new information they are exposed. Research suggests that differences in our knowledge stocks and the various manners in which each might process

information are related to opportunity identification (Shane, 2000). Therefore individuals do not possess the same knowledge and will differ in their ability the potential of opportunities (Arenus & De Cleq, 2005). Bandura also states a similar argument, that highly educated individuals will have more self-confidence to come up with ideas of forming a new venture (Bandura, 1978).

Entrepreneurs are agents who are alert to disequilibrium profit opportunities (McMullen, Plummer & Acs 2007). Entrepreneurs are advised to avoid defining subjective probabilities for problems they do not already possess prior knowledge (Fiet ET al.2005). Shane and Venkataraman (2000) reaffirm this position by stating that the reason some people will discover opportunities while others may not hinges on two issues: "(1) the possession of the prior information necessary to identify an opportunity and (2) the cognitive properties necessary to value it" (2000, p. 222). Variance in behaviour and knowledge has an impact on discovery of opportunities (Corbett 2005).

Essentially, while we all possess different pieces of information (Hayek, 1945), we also all reason with it differently. Ward (2004) explains that all knowledge are not created equal and that depending on how knowledge is processed and used (cognition), knowledge will either provide a bridge to a new opportunity (creativity) or construct a fence that will block its path.

Experience is highly associated with opportunities and gives richer images of opportunities and these deal with the venture founding process than those with less experience (Mitchell & Shepherd). The work status and experience of an individual positively affects the likelihood of opportunity recognition because it exposes the individual to a wider set of knowledge for new venture creation (Arenus & De Clerq 2005). Differences in prior knowledge explain the variance in entrepreneurs on which opportunities to pursue. Knowledge is known to be an important antecedent of opportunity recognition and individuals will normally follow opportunities which are related to their prior knowledge (Patzelt & Shepherd 2010).

2.5.2 Knowledge types/ scopes

Three major dimensions of prior knowledge are important to the process of entrepreneurial discovery: prior knowledge of markets, prior knowledge of ways to serve markets, and prior knowledge of customer problems.

Opportunity recognition ties to distribution -or lack thereof - of knowledge. The investigation into an opportunity revolves around the information the entrepreneur possesses and how they process it, therefore information is relied upon to reduce market in efficiencies (Fiet et al. 2005)

Other people will discover opportunities whilst others will not due to the prior knowledge necessary to identify an opportunity and the cognitive properties required to value it (Shane and Venkataraman 2000). Information has the ability to change the understanding of an entrepreneur – information richness (Fiet et al. 2005). The trust an entrepreneur has in his or her peers who are knowledgeable about entrepreneurship helps in reducing uncertainty as the entrepreneur ascertains the impression formed corresponds to a real opportunity (Wood & McKinley 2010).

There are three types of procedural knowledge which are important in a start-up *i.e.* the industry which the venture is operating in; the type of business approach the venture is using and knowledge of on creation, exploiting and harvesting new business. Research is highly dependent on the knowledge of the founders (Westhead & and Noel 2009)

Research in the past has revealed that increased knowledge in a particular field leads to individuals acquiring important advantages. The facilitation of opportunities by prior information leads individuals to increase their access to information (Ucbasaran et al., 2008). Prior knowledge has also been attributed to the differences why some people recognise opportunities and other do not. They may have better quality information and they are able to put the information they have to better use (Casson, 2005).

2.5.3 Heuristics

These are referred to as decision rules, cognitive mechanisms and subjective opinions people use to make decisions (DeTienne & Chandler 2004). Cognitive mechanisms and heuristics are two ways in which we put our knowledge into action (Corbett 2005). When people make everyday decisions under uncertainty they rarely use exhaustive analyses. They rather rely on the simplifying strategies termed heuristics; these are decision rules which simplify judgemental tasks to relatively simple cognitive operations (Kahneman, Slovicm & Tversky, 1982). Some scholars use the understanding of heuristics for the understanding of entrepreneurial action (Busentitz & Barney, 1997; Gaglio, 2004) while others argue that heuristics generate the behaviour to act entrepreneurially (Simon, Houghton & Aquino 2000). Entrepreneurial learning is the process by which people acquire, assimilate and organise the newly found knowledge with pre-existing structures. Heuristics are consequential in explaining the variations in learning as it affects decision making, entrepreneurs depend on heuristics when there is uncertainty about the price nature or the conditions that enable or hinder certain outcomes (Holcomb, Ireland, Holcombe & Hitt). The authors state three ways in which knowledge is accumulated:

- Explicit direct experience
- Observing actions and consequences of others
- Explicit codified sources (book, books, papers etc.)

Taking an opportunity idea decision without sufficient knowledge is detrimental and can often lead to failure. This is because there will be a misdirection and waste of resources. This is seen evidently with the dotcom start-ups of late 90s to early 2000s. The knowledge was possessed by the founders through their own idiosyncratic experiences and processes. The knowledge gives the founder a unique view of the opportunity in the environment (West & Noel, 2009). Heuristics are also associated will innovativeness (Busenitz & Barney 1997). Entrepreneurs are more likely to use heuristics than individuals in organisations (Busenitz & Barney 1997).

People tend to notice information that is related to information they already know (Von Hippel, 1994). Therefore, Shane (1999) postulated that entrepreneurs will discover opportunities because prior knowledge triggers recognition of the value of the new information.

2.6 Active Search

Though active search of entrepreneurial opportunities has been highlighted in several articles there is still however not much literature on it. The issue of search of entrepreneurial search of opportunities has received little direct attention in academic literature (Wright, Robbie & Ennew, 1997). Drucker (1998) noted that the identification of opportunities is done through a purposeful, rational and systematic search process also in or in response to a particular problem.

Ozgen and Baron state that an active search of opportunities is essential in the opportunity identification process. Searching for opportunities is what many are familiar with and looking at all aspects of the environment and opportunity discovery will take place after a systematic search (Hansen, Shrader & Monillor 2011). Potential entrepreneurs engage in search activities so as to increase their probability to come upon an entrepreneurial opportunity (Holcombe, 2003).

Opportunities remain unknown until discovered yet it is difficult to conduct a search of something not yet in existence (Kirzner, 1997). For entrepreneurs to commit to search and exploit an opportunity they must be confident that they will be gaining more that which they are giving up (Casson, 2005). Research also implicitly assumes that recognition of opportunities by a systematic search for available opportunities increases the chances of entrepreneurial opportunities (Archdivili et al., 2003).

Searching for the imbalances in the market leads to the discovery of opportunities. Seeking out these imbalances and proper allocation of resources leads to equilibrium in the environment (Kirzner, 1973). Seeking information, investing in human capital, and systematically searching through promising ideas are not entrepreneurial acts in themselves, as Kirzner defines entrepreneurship, but they can create an environment where entrepreneurial insights are more likely to be generated (Holcombe, 2003).

Individuals with specialist scanning will concentrate on searching within a more specific domain of venture ideas (Westhead et al. 2005). Search of

opportunities within already known information channels is most likely to be a success due to the previously acquired prior knowledge, which helps in guiding the search (Fiet et al. 2005). Through an active search, then an entrepreneur is able to investigate and refine an idea (West & Noel 2009).

Kirzner (1973) states that alertness is not an active search at all; however alertness can be exhibited in a continuous search of information through the broad and undirected scanning that takes place at unconventional times as opposed to the direct, rational and active search, which takes place in the appropriate times (for instance during working hours) and expected place like the work of business, where managerial search is also likely to occur. Opportunities are normally discovered by an entrepreneur, unless the individual has a unique preparedness to identify them (alertness). An entrepreneur's search behaviour changes with time; and during their initial stages they are mostly searching for new ideas (Kaish and Gilad, 1991)

The amount of the knowledge, beliefs, opinions and expectations are a result of relentless deliberate search (Kirzner 1973). In the pursuit of opportunities, entrepreneurs will rely less on the predictable sources and rather focus on active scanning of the environment (Kaish and Gilad 1991)

2.7 Hypothesis

The hypotheses were derived from the above literature review.

2.7.1 Hypothesis 1

A positive relationship exists between entrepreneur alertness and opportunity recognition.

2.7.2 Hypothesis 2

A positive relationship exists between entrepreneurial search and opportunity recognition.

2.7.3 Hypothesis 3

A positive relationship exists between prior knowledge of an entrepreneur and opportunity recognition.

2.8 Conclusion of Literature Review

A study conducted showed that the respondents discovered opportunities in various ways; through active deliberate searches, the experiential knowledge, alertness and others stated it was two or more of these at the same time. Hence there are no criteria of using the above factors on identification of opportunities (Hulbert, Gilmore & Carson 2010). Shane and Venkataraman 2000 note that opportunities may not always be visible to everyone all the time; they are however, an “objective phenomena”. They await those who are alert or knowledgeable or search to recognise them (Kirzner, 1973). L’vesque and Minniti (2006) state that the entrepreneurial process is a multi-layered and complex phenomenon.

2.9 Research questions

2.9.1 Research Question 1:

How alert are you in recognising opportunities?

2.9.2 Research Question 2:

What search mechanisms have you employed when searching for opportunities?

2.9.3 Research Question 3:

To what extent has been the knowledge you have, been key in recognising opportunities?

3 CHAPTER 3: RESEARCH METHODOLOGY

This section outlines the methodology used in conducting this research. The methodology will be used to test for the above mentioned hypotheses as well as answer the research question at the end of chapter 2. This section looks at the method of research used and the research design. The research design shows the population sampling methods, research instrument used and also the types of analysis to test for the hypotheses of the study.

3.1 Research methodology /paradigm

This research is a cross-sectional quantitative research. Quantitative research is a positivist method and is based on numerical data which is what the researcher relied on (Charles & Mertler, 2002). In Quantitative methods the data is presented by numbers and hence several statistical analysis can be applied which are quantitative in nature (Greenstein, 2003). Quantitative is ideal for this research because it is a statistical based study and the data is analysed in numerical form and this research will measure opportunity recognition against knowledge, search and alertness.

A quantitative research methodology brings out the relationship of the variables of this research making use of numeric data. It is a multivariate study; consists of more two or more variables (Evans, 2010) in this case four variables. The dependent variable is opportunity recognitions; whilst the independent variables are alertness, search and knowledge of the entrepreneur. The independent variables are used as elements in the search for opportunities.

Quantitative methodology allows for a large sample size and the researcher's involvement is limited therefore preventing bias (Cooper & Schindler, 2009).

3.2 Research Design

This study makes use of a survey questionnaire as the instrument of the research. A questionnaire is quite easy in conducting research which requires

multiple respondents and it also acquires a significant amount of information as well. It also offers anonymity and safeguards the respondent's privacy, which is essential with various privacy concerns.

A survey questionnaire however, is limiting in the fact that:

- There is no contact with the respondent hence no chance of further explanation of a question or requirements.
- Responding and finishing the survey is absolutely at the discretion of the respondent.
- There is a chance of the research being disregarded as spam due to many surveys circling the web.

3.3 Population and sample

3.3.1 Population

The population is referred to as the total target group which attention is focused on –the full set. This is where the sample is drawn from. The population for this study are entrepreneurs already conducting business. This is regardless of duration they have been conducting business.

3.3.2 Sample and sampling method

According to Cooper and Schindler (2009) there are various reasons for sampling, which the cost is lower, greater accuracy of results, speed in data collection and availability of population elements.

The study uses probability/random sampling and it is ideal because it does not discriminate, every element has a known and equal chance of being selected. The sampling frame is highly experienced and novice entrepreneurs. The sample did however have a bias in that it identified the IT sector respondents

and the survey was sent to the more of the IT respondents than any other sector.

The researcher used databases of company entrepreneur registration organisations and entrepreneurs support groups to narrow down the respondents of the study. The researcher made use of networks to have the research distributed, which became very important in getting cooperating participants to the survey. The colleagues where requested to forward the questionnaire to other recipients mainly using the web link for the survey.

The research aims at getting a minimum of a 100 respondents so the results can give meaningful findings and maximum 190 respondents as the research will be sent to over 200 respondents.

Table 1: Example Profile of respondents (by industry)

Description of respondent type, egg Manager, Union representative, student	Number to be sampled
Entrepreneurs in IT industry	80
Entrepreneurs in financial industry	50
Entrepreneurs in other industries	50

3.4 The research instrument

The tool used to collect data for the study, the research instrument used was a questionnaire. The study made use of an online survey questionnaire, which was distributed to recipients and also the link distributed by other colleagues. The questionnaire had a five point likert scale for measurement. The survey has 39 questions and divided in 4 parts (demographics, alertness, search and knowledge).

The instrument measures the alertness, knowledge and entrepreneur's search for opportunities and how they are important in recognizing opportunities

The survey first asked the demographic questions and background of entrepreneur and the venture. The survey also asks the entrepreneur's view on entrepreneurial opportunities.

The next phase of the questionnaire asks the entrepreneur on the variables alertness, search and prior knowledge of the entrepreneur.

The questionnaire has a mixture of questions formulated by the researcher and also adapted from a journal article – Entrepreneurial alertness in the pursuit of new opportunities (Tang et al., 2010) –specifically the alertness questions.

3.5 Procedure for data collection

The instrument an online questionnaire and was sent out to various entrepreneurs with a request to participate in the survey. Detailing the benefits of participation and assuring them of complete confidentiality. It also offers the option to opt out of the survey at any time should they so wish. Upon completion of responding to the questionnaire, their responses will automatically be entered into the database and will be integrated for analysis.

3.6 Data analysis and interpretation

The data collected will need to be analysed and below is a discussion of the methods to be used for the analysis.

3.6.1 Descriptive statistics

Descriptive statistics is termed to a collection of quantitative measure and ways of describing data. They include measures of central tendency (mean, median and mode), measures of dispersion (standard deviation, variance) and frequency distribution (Evans, 2010). Descriptive statistics will be the first analysis conducted.

3.6.2 Correlation

This will measure the degree of relationship between variables in the study. It will look at the relationships of the dependent variable (opportunity recognition) and each of the independent variables (alertness, search and knowledge) and also the independent variables against each other. This is done so as to look out for cases of multicollinearity. The correlation coefficient is used and is abbreviated r.

3.6.3 Regression

This will be a noteworthy analysis in this research, specifically Multiple Linear Regression. It is a technique used to predict the dependent variable using the independent variables (Cooper & Schindler, 2009). Mainly this technique seeks to explain the statistical variance of the dependent variable based on the given levels of the independent variables.

The regression analysis will be run using the STATISTICA software and the results will show a number of values which are crucial in the analysis of the data and making inferences. These include the R squared statistic, standard error, p values and the regression coefficient values of the independent variables.

The first step is to run the initial regression. Regression follows a certain assumptions (below) which are to be met, if not met the results may be considered not trustworthy. Hence it is necessary to check the following from the results:

i. **Model structure**

Multiple regression assumes that the model has a single dependent variable and is predicted by a collection of independent variables which do not affect or have a relationship with each other. Discrepancies of this may lead endogeneity were there is a causal relationship between the independent variables. Another problem is feedback loops where the dependent variable causes the independent variables (predictors).

ii. Linearity

In regression analysis the IV's are explaining the DV's. After the data has been run, regression seeks to see if a straight line can be drawn through the middle of the data and if it adequately represents the shape of the data. If this assumption is met then an inference can be made that the line sufficiently represents the relationship and proceed determine what the line is telling us.

iii. Multicollinearity

This refers to the situation whereby the is a strong relationship between the independent variables in their causing the dependent variable which more than just the regular expected relationship high correlation between independent variables. It is identified by checking

- The correlation matrix for the IV's, if correlated above approximately 0.9 and above there is multicollinearity.
- The Variance Inflation Factors (VIF's), High VIF's -10and above- indicate multicollinearity.
- Condition indices, looking at the condition number if above 100 there is probably multicollinearity and can be confirmed by the VIF numbers.

The solution to a problem of multicollinearity below:

- Removal of one of the unimportant collinear predictors *i.e.* removing one of the independent variables and only use one for analysis.
- Combining the similar predictors into aggregate variables. When they are two or more collinear variables then they are highly similar in construct hence can be aggregated into a single construct.

iv. Non-Linearity

This is where the relationship between a DV and IV is not Linear in shape. Therefore a straight line will not fit the data or will not provide a good explanation of the results as another shape would.

v. **Influential Outliers**

Outliers are data points which lie far from the regression line and most of the data. In some instances they can dramatically change the outlook of the data. A comprehensive look of the data set figures can reveal the outlier. Deleting the outliers is the most used solution.

vi. **Heteroskedasticity**

This is a situation whereby the straight line does not properly explain the data on all the ranges. It is not acceptable for the line to only explain parts of the data and not all. The reverse is called homoscedasticity.

vii. **Normality of Residuals**

The residual should have normal residuals. When residuals are normal this is an indication that the residuals are closer to zero (which is ideal), there are fewer big residuals and if there are large residuals they are below and above the regression line- prevents bias.

viii. **Autocorrelation**

This is where the residuals are significantly correlated or there are waves in residuals.

Once the above has been checked for and solved, it is now possible to make inferences from the results.

3.6.4 Factor Analysis

This explores the relationships in the data, which variables in the data are more related to each other (Cooper and Schindler 2009). Principal Components and Varimax Rotation is the test run to give the factors and their loadings.

3.7 Limitations of the study

- The study though is more biased to entrepreneurs in the IT sector.

- The use of an online questionnaire limits the contact with the respondent and they can choose not to participate in the survey. However more importantly if the respondent fails to understand the question there is no way of clarifying thereby altering the final results.

3.8 Validity and reliability

Validity focuses on whether the research accomplishes to accurately explain the concept the researcher is measuring- the extent to which the conclusions of the study are supported by its design. It has two facets internal and external validity.

Reliability unlike in validity reliability focuses on the quality of the measurement rather than the conclusions. When a measure is reliable it can utilised over and over again and still yield the same results.

3.8.1 External validity

External validity is the degree to which the results are generalisable, and can be assumed valid for other cases and situations (Greenstein, 2003). This study is based on literature on previous and similar studies and also the instrument makes use of some questions asked in some of the studies.

3.8.2 Internal validity

Internal reliability simply put questions whether the instrument actually measures what it purports to measure. For the research design to be termed internally valid it must isolate the effects of the variables used in the research such that they can be measured separately (Greenstein, 2003).

3.8.3 Reliability

Reliability is the consistency of the measuring instrument that it yields a certain results when the object being measured is the same (Leedy & Omrod 2005).

Factors affecting reliability and Steps taken to increase reliability:

- The lack of understanding of the research questions can affect the reliability of the research.
- The researcher made the survey questions quite simple and clear to understand and answer.
- The researcher also gave a brief background explanation of the main points of the study at the beginning of the questionnaire.
- The study has tried to follow some of the steps from a previous study by Tang et al (2010).

4 CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

In this chapter the results from the research instrument sent out are analysed.

4.2 Demographic profile of respondents

The survey had been sent out to 200 respondents via email and also using a web link distributed around. The survey garnered 134 respondents and 5 where inadmissible and invalid. The results which were analysed were from 129 respondents. The response rate for the survey was 67% of the total sent out to respondents. The results in table 1 show the owner's personal details looking at gender, age educational back ground and years of work experience in the current field/ industry. Table 2 shows the profile of the business of the respondents and looks at the age of the business, the industry sector the business in, the way in which the venture was started, whether it is the first venture or not, the number of employees and the base of the venture.

Table 2: Owner specific related variables

Variable	Category	Count	Percent
Gender	Male	83	64.3
	Female	46	35.7
Age	21-29	35	27.1
	18-20	4	3.1
	30-39	46	35.7
	50-59	13	10.1
	40-49	25	19.4
	60 or older	6	4.7
Highest level of education	Secondary school	3	2.3
	Matriculation Certificate	5	3.9
	Diploma	16	12.4
	Bachelor's Degree	66	51.2
	Master's Degree	32	24.8
	Doctorate (PhD)	7	5.4
Years of work	0-1	3	2.3

experience in current field	1-5	44	34.1
	6-10	37	28.7
	11-15	23	17.8
	15+	22	17.1

The table above reflects the demographic details of the respondents.

Table 3: Business specific Variables

Variable	Category	Count	Percent
Age of your business (years)	1-3	38	29.5
	4-6	32	24.8
	6-10	28	21.7
	11-15	9	7.0
	Missing	22	17.1
Sector of your business	IT	49	38.0
	Financial Services	20	15.5
	Retail	6	4.7
	Agriculture	9	7.0
	Environment	5	3.9
	Industry Consultant	5	3.9
	Education	3	2.3
	IT Industry Consultant	3	2.3
	Industry Consultant Financial Services	1	0.8
	Manufacturing	1	0.8
	IT Education	1	0.8
	ITFinancial Services	1	0.8
	ITFinancial ServicesAgricultureManufacturing	1	0.8
	Missing	24	18.6
Started business	Purchase of an existing business	9	7.0
	New Venture	110	85.3
	Handed down to you	8	6.2
	Share holding	1	0.8
	Other (please specify)	1	0.8
First venture	YES	97	75.2
	NO	32	24.8
Ventures involved in forming	3-5	9	7.0
	over 5	32	24.8
	Missing	88	68.2
Number of employees currently	1-10	41	31.8
	11-25	27	20.9
	26-50	27	20.9

employed	51-100	21	16.3
	over 100	13	10.1
Base of venture	Similar Process	69	53.5
	Entirely New Concept	60	46.5

The table above shows the results of the business related details of the respondents.

4.2 Descriptive statistics

Table 4: Descriptive statistics table

n=129	Mean	95% Confidence interval for mean		Median	Minimum	Maximum	Std. Dev.	Skewness	Kurtosis
Entrepreneurial Alertness	3.77	3.69	3.84	3.88	2.38	4.75	0.42	-0.57	0.20
Knowledge	4.24	4.17	4.31	4.25	2.63	5.00	0.40	-0.91	1.72
Entrepreneurial Search	4.25	4.16	4.34	4.38	2.50	5.00	0.51	-0.86	0.75
Opportunity Recognition	4.70	4.61	4.79	5.00	2.00	5.00	0.50	-2.15	6.37

The table above reflects the descriptive statistics of the study. The table shows the descriptive statistics of the variables showing the means confidence intervals, medians, skewness, and kurtosis.

4.3 RELIABILITY AND VALIDITY

4.3.1 Reliability

Table 5: Reliability measure

	Original scale			Revised scale		
	Number of items	**Cronbach alpha**	**Average inter-item correlation**	**Number of items**	**Cronbach alpha**	**Average inter-item correlation**
Entrepreneurial Alertness	8	0.49	0.12	7	0.75	0.28
Knowledge	8	0.67	0.22			
Entrepreneurial Search	8	0.80	0.34			

Opportunity Recognition	2	0.76	0.62	

The table above shows the measure of reliability of the study questionnaire.

Reliability is a measure of consistency, the level to which it can produce same results. The measure of reliability is shown by the Cronbach's alpha. To measure the internal consistency the Cronbach's alpha and the inter-item scales where analysed.

4.3.2 Construct validity

Table 6: Factor analysis

	Absolute values of factor loadings			
Variable	**Factor 1**	**Factor 2**	**Factor 3**	**Factor 4**
Actively seeking to identify new opportunities crucial for any business?	0.07	0.05	0.12	0.83
Opportunity recognition is key to an entrepreneur to be successful	0.09	0.04	0.02	0.80
I am highly attentive to entrepreneurial opportunities?	0.08	0.44	0.06	0.42
R I do not actively seek opportunities	0.15	0.69	0.15	0.17
I recognize opportunities while going about other tasks?	0.25	0.65	0.07	0.22
I am aware of the possibility to identify opportunities at any given point?	0.13	0.38	0.10	0.03
I have an extraordinary ability to 'smell' profitable opportunities?	0.02	0.75	0.13	0.14
I am highly observant to any changes in the industry?	0.07	0.03	0.76	0.03
I have a gut feeling for potential opportunities?	0.06	0.73	0.01	0.07
Seeing new opportunities comes naturally to me?	0.10	0.76	0.05	0.06
My present venture is highly based on my previous work experience?	0.36	0.02	0.33	0.01
My education plays a huge factor in recognizing opportunities?	0.20	0.14	0.58	0.19
I collect information related to the venture I manage?	0.12	0.02	0.69	0.06
I make connections with information which seems unrelated?	0.06	0.69	0.01	0.09
I keep an eye out for new opportunities	0.17	0.29	0.00	0.32

when looking through information?				
I am confident with the knowledge base of my colleagues?	0.53	0.19	0.43	0.02
When faced with multiple opportunities I am able to select good ones?	0.43	0.47	0.25	0.03
I draw much insight from my previous experience?	0.30	0.28	0.35	0.33
I actively seek opportunities?	0.24	0.31	0.19	0.46
I browse the internet every day in search of opportunities?	0.71	0.09	0.15	0.16
I have frequent interactions with others to acquire new information?	0.73	0.06	0.21	0.04
I am an avid information seeker?	0.64	0.28	0.04	0.15
I talk to clients and colleagues to see any areas in need of change?	0.39	0.03	0.26	0.24
I subscribe to professional bodies and research centers to keep abreast of new innovations	0.60	0.16	0.01	0.24
I am a part of an entrepreneurial support group so as to share ideas?	0.74	0.02	0.08	0.07
I read newspapers, journals etc., in search of opportunities?	0.62	0.22	0.13	0.27
Expl.Var	3.86	4.12	2.15	2.32
Prp.Totl	0.15	0.16	0.08	0.09

The above table is an exploratory factor analysis using the extraction method of Principal components and varimax rotation. Below the figure 1 is the scree plot and it suggested four factors

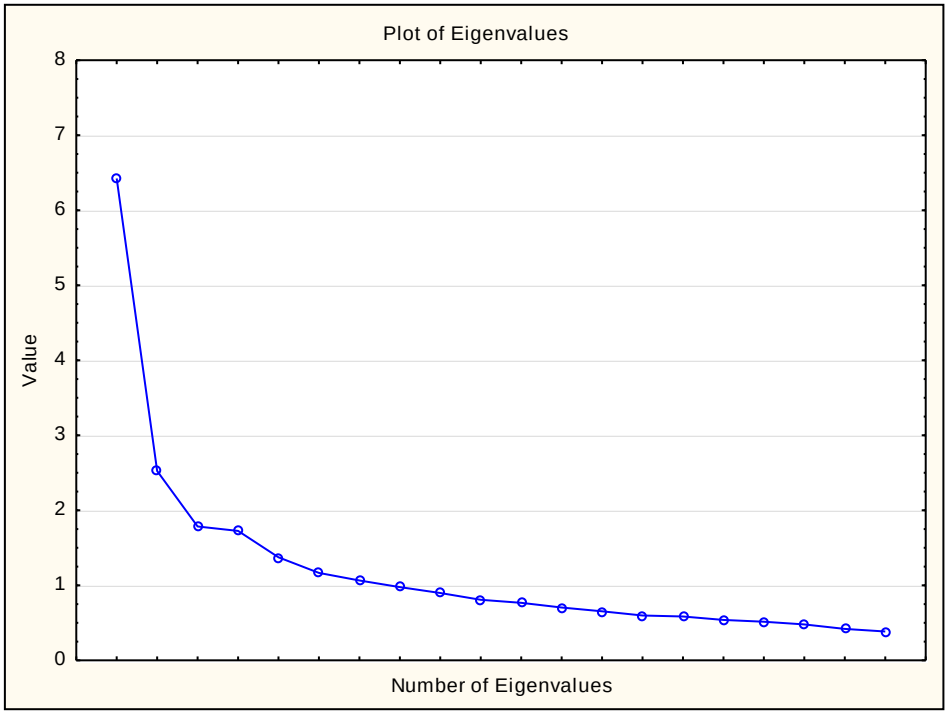


Figure 2: Plot of eigenvalues.

4.4 Correlation and tests of hypothesis

The researcher examined the linear relation between each of the predictors and the regression lines are plotted for each relation including the revised scales.

4.4.1 Results pertaining to Research Question 1

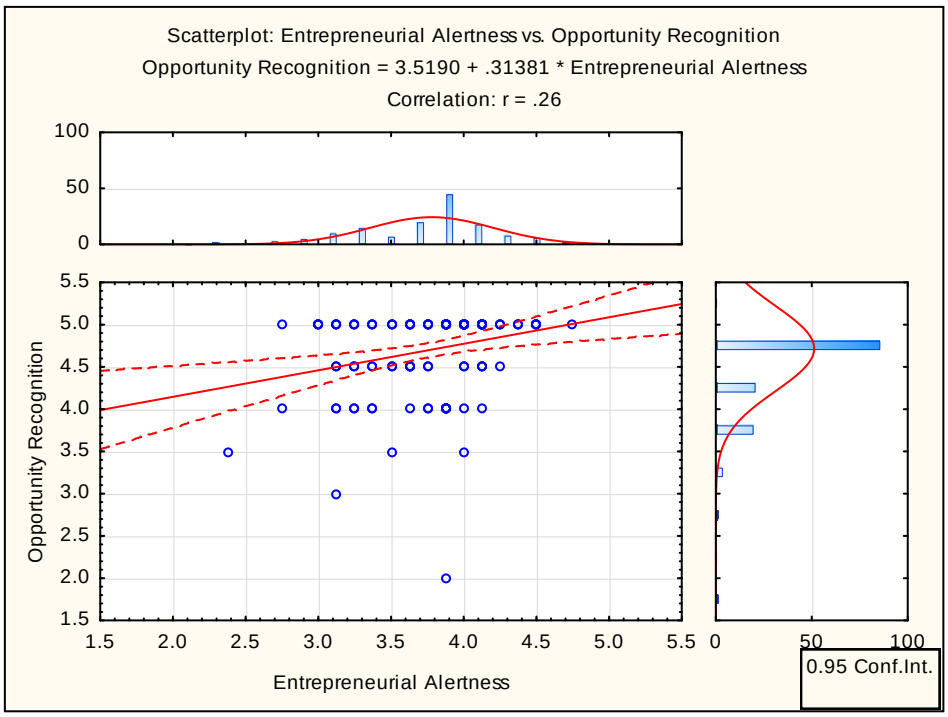


Figure 3: Scatter plot for entrepreneurial alertness.

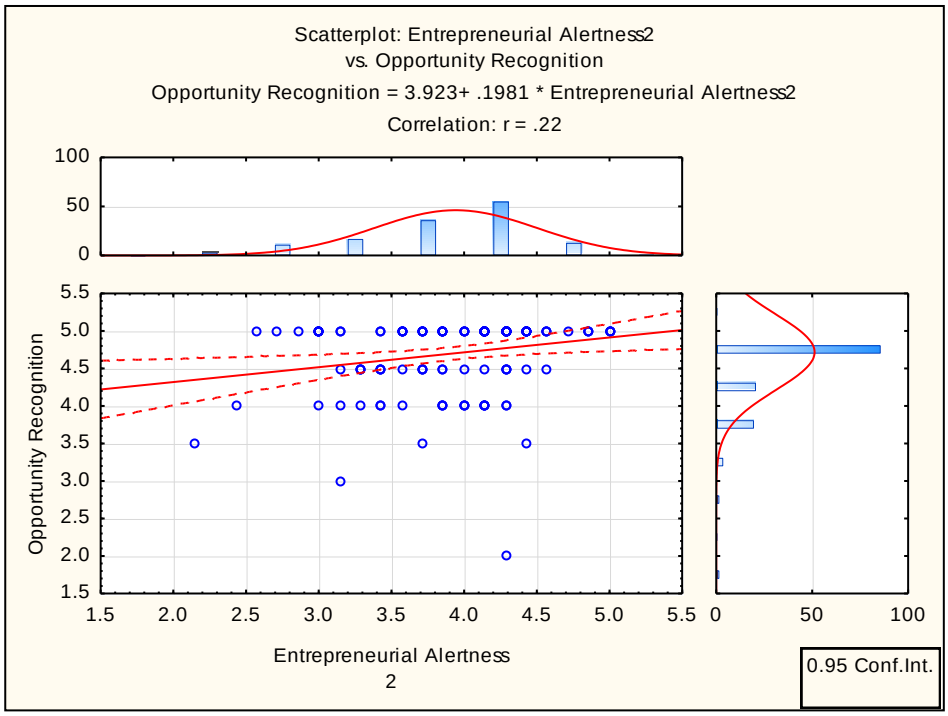


Figure 4: scatter plots for Entrepreneurial Alertness 2

The above figures show the correlation and results pertaining to the first hypothesis and research question. The second table is the revised table for the entrepreneurial alertness variable.

4.4.2 Results pertaining to Research Question 2

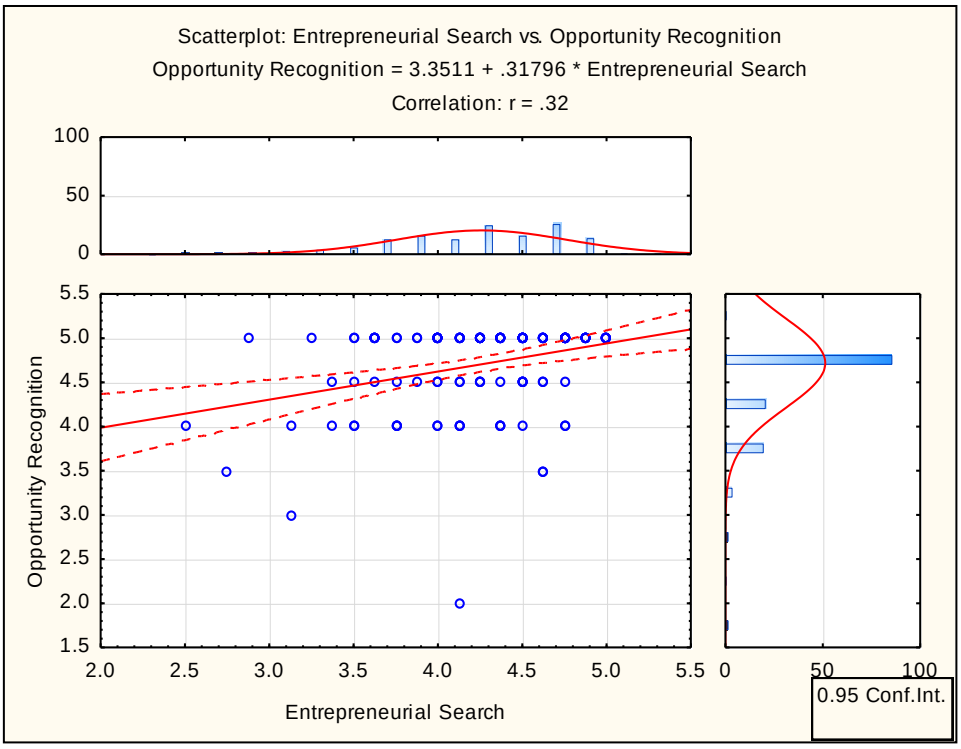


Figure 5: Scatter plots for entrepreneurial search

The above figure 5 shows the correlation results, scatter plots and distribution results of the results of hypothesis and research question 2.

4.4.3 Results pertaining to Research Question 3

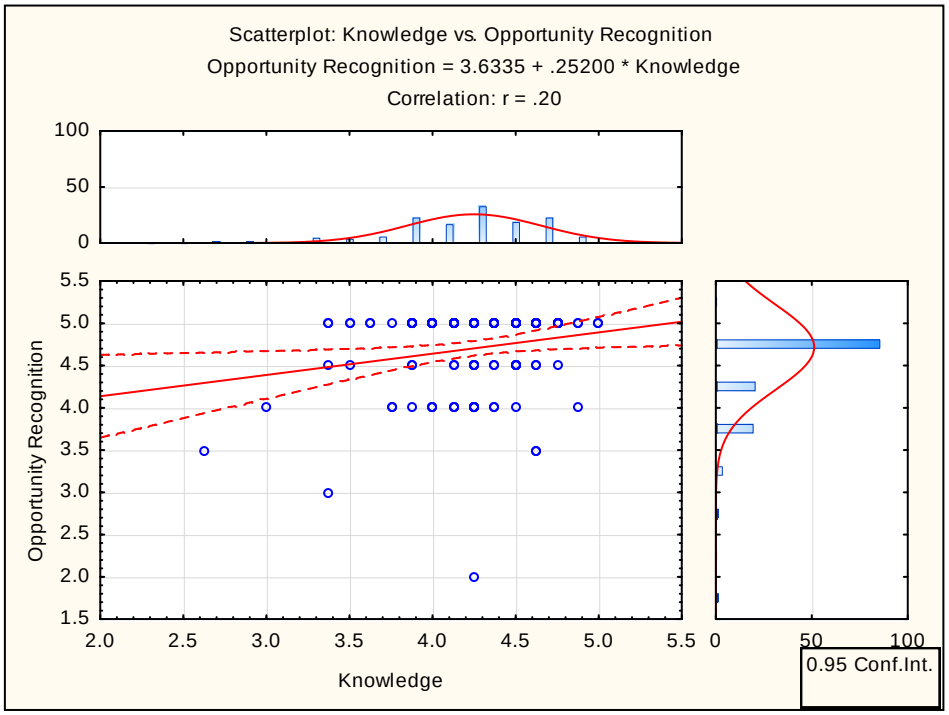


Figure 6 scatter plots for knowledge

The above figure 6 shows the correlation results and regression results pertaining to hypothesis and research question 3.

4.8 Summary

Table 7: Correlation results

	Opportunity Recognition	Entrepreneurial Alertness	Knowledge	Entrepreneurial Search	Entrepreneurial Alertness 2
Opportunity Recognition	1.00				
Entrepreneurial Alertness	0.26	1.00			
Knowledge	0.20	0.48	1.00		
Entrepreneurial Search	0.32	0.39	0.54	1.00	
Entrepreneurial Alertness 2	0.22	0.97	0.52	0.40	1.00

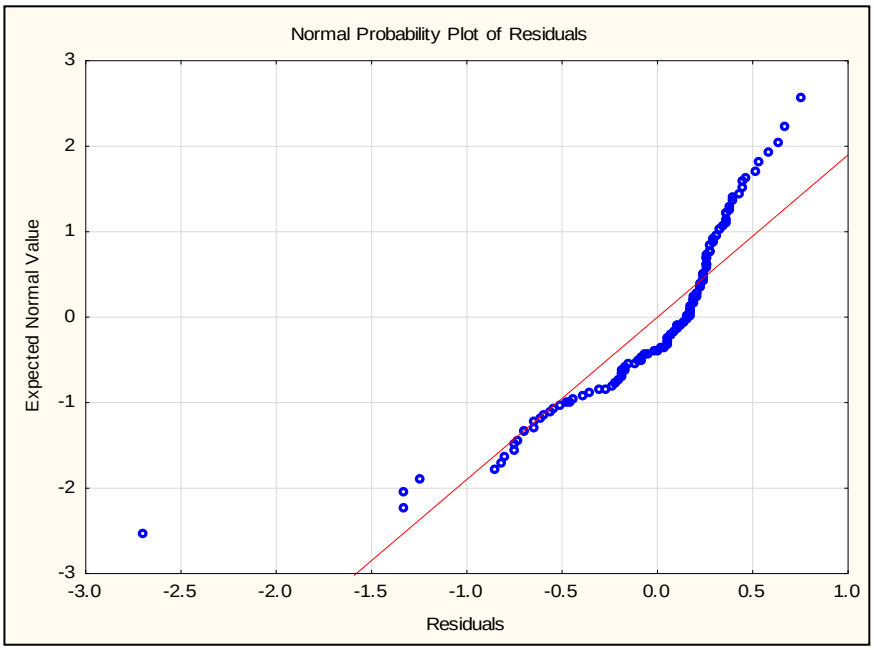


Figure 7:Plot-Residuals

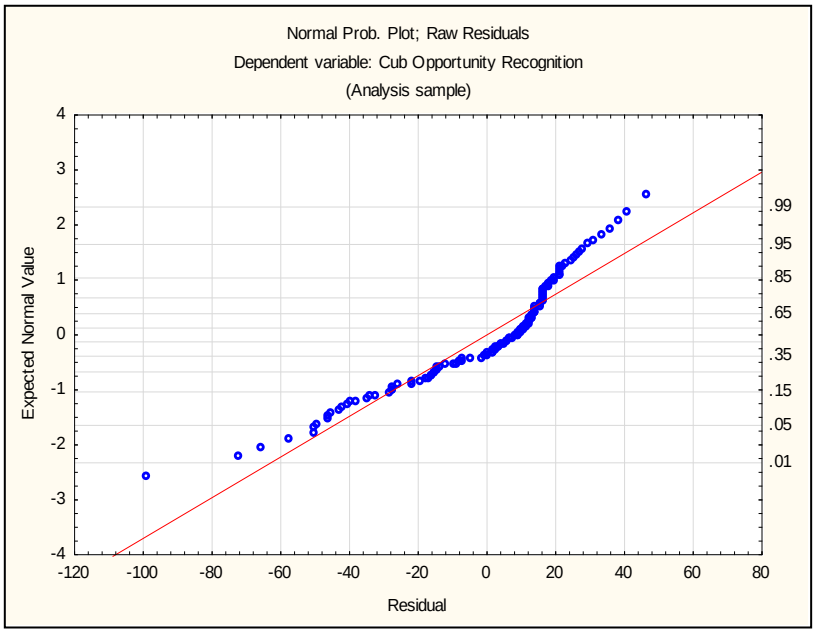


Figure 8: plot of residuals 2

Figure 7 is the plot of residuals after regression. Figure 8 the same after a transformation and shows improvement.

4.9 Summary of the results

A look at the results shows that the independent variables to positively affect the dependent variable. The alertness, knowledge and search lead to the opportunity recognition and are utilised by entrepreneurs in this regard.

Table: 8 R-square statistics

Subset No.	R square	No. of - Effects	Entrepreneurial Alertness	Knowledge	Entrepreneurial Search
1	0.142778	3	0.19728	-0.04589	0.284392
2	0.141476	2	0.182654		0.265145
3	0.113822	2		0.029783	0.320251
4	0.113197	1			0.336448

5	0.087546	2	0.244729	0.085877	
6	0.081887	1	0.286159		
7	0.041593	1		0.203943	

Table 9: Summary of research results

Research Question	**Question**	**Outcome**
Opportunity recognition	Risk and significance	Majority high scores that risk is a hindrance to OR. Majority high scores that OR is critical for the business and entrepreneur.
Research Question 1	Level of alertness	Majority of High score on alertness scale that most of the entrepreneurs are alert to changes in environment.
Research Question 2	Search mechanisms	Majority high scores entrepreneurs highly active in searching for opportunities using over half or all of search mechanisms asked.

Research Question 3	Significance of prior knowledge	Previous knowledge and experience scored highly as important to entrepreneurs in identifying opportunities. Knowledge background of colleagues also seen as important.

5 CHAPTER 5: DISCUSSION OF THE RESULTS

5.1 Introduction

This chapter discusses the results acquired in this research. The chapter will link the results to the literature review. It will offer comparisons with regards to some of the literature and previous similar studies done.

The survey instrument had a five-point likert scale. The scales where strongly agree, agree, neutral, disagree and strongly disagree.

The chapter will start with analysis of the demographic results and then followed by a discussion of the data relating to the hypotheses and research questions. It will also discuss at the regression results and the reliability and validity findings. Lastly a summary of the findings will conclude the chapter.

5.2 Demographic profile of respondents

The demographic profile of the respondents was split into two to show firstly the profile of the owner and secondly the profile of the business.

5.2.1 Owner specific variables

Table 2 provides a summary of the demographic profile of the respondents. The large portion of the respondents study shows they were male constituting 64.3% of all the respondents, the remaining 35.7% being female. This shows the wider spectrum of gender in the field of entrepreneurs, the larger base of entrepreneurs being male.

The age aspect was divided in six groups and is shown in table 2. The larger portions of respondents were in the 30-39 age bracket constituting 35.7 % of the respondents. This was followed closely by the 21-29 age bracket constituting 27.1% of the respondents. The age bracket with the least respondents was 18-20 with 301%, this however had been expected.

In regards to educational background the respondents had six options shown in table 2. And the respondent was showing the course for which is completed and not currently enrolled. The majority of the respondents had a bachelor's degree constituting over half with 51.2%. Master's degree holders were 24.8% of the respondents and 12.4% diploma holder. PhD holders were 5.4% of the respondents. This leads to an assumption that the higher level of education namely tertiary education increases the likelihood of becoming an entrepreneur.

The years of work experience shown in table 1 had 5 options.

5.2.2 Business specific variables

The business specific variables are the information of the respondents' businesses and these are displayed in table 3. The age of the business of had four categories with the bracket 1-3 having 29.5% the indicating that they were recent start-ups. The brackets 4-6, 6-10 and 11-15 had 24.8% 21.7% and 1% respectively. However 17.1% of the respondents were missing results hence they can be no definite conclusion on where the larger portion of the business lies with regards to their age.

The economic sector of the business is also reflected in table 3. The largest group was the IT sector with 38% belonging to this sector. This was followed by 15.5% belonging to the financial services sector. These two are the leading sectors were entrepreneurs likely begun their ventures. This might be because these skill based industries and entrepreneurs often start at the consulting level. 18.6% of the results were missing also providing a bias in the results.

The way which the venture was formed is displayed in table 3. A significant number 85.3% of the businesses were new venture formed by the entrepreneurs. 75.2% of the respondents also indicated that this was their first venture. This might depict it takes an entrepreneur sometime to decide and act on establishing a new venture.

The number of employees in the business is in table 2. 31.8% of the ventures had 1-10 employees, showing they are maybe still growing and also quite small

in size. Those with over 100 employees were 10.1% which is in itself impressive, depicting entrepreneurs as contributing to economic development and creating employment.

5.3 Descriptive statistics

The results of the descriptive statistics are shown in table 4. The total valid responses from the survey were 129 (n=129). The scale had 5 points. The descriptive summaries of the 4 variables are in the figures below followed by the summary of the same.

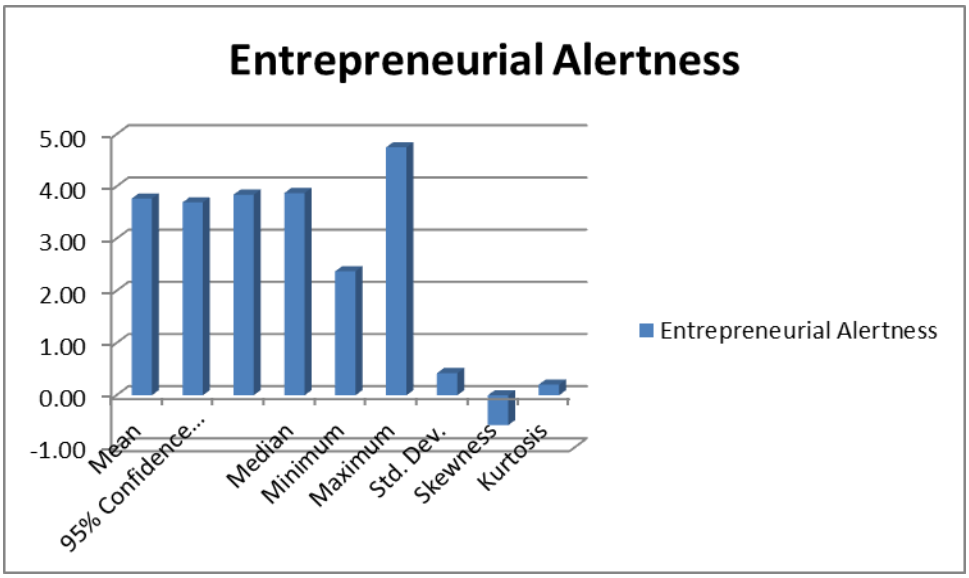


Figure 9: Entrepreneurial alertness descriptive statistics summary

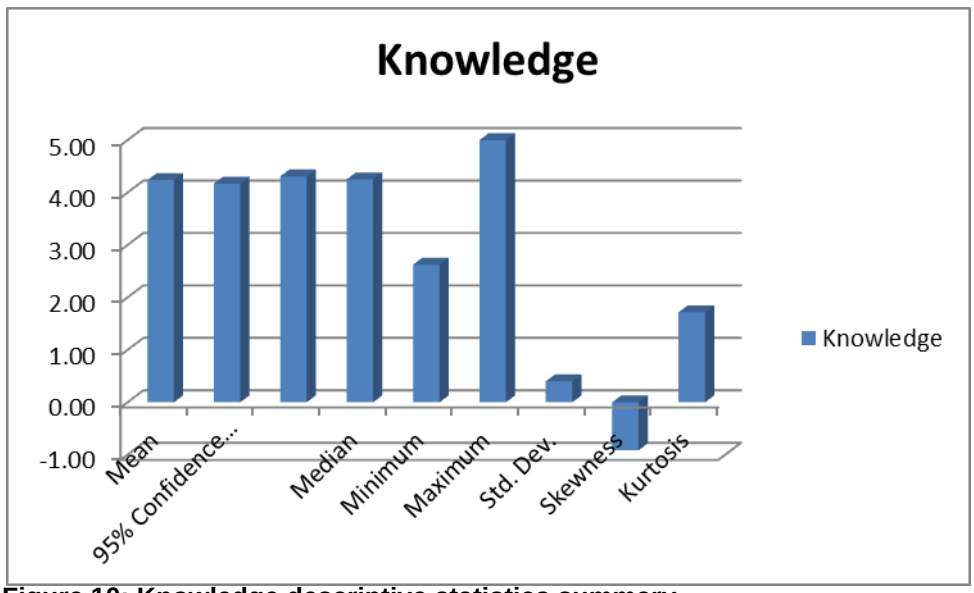


Figure 10: Knowledge descriptive statistics summary

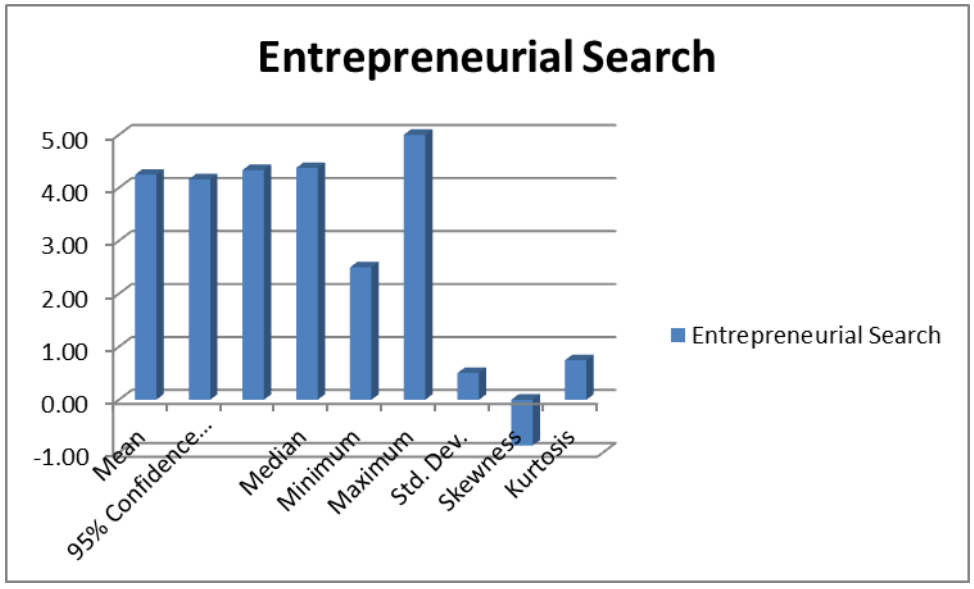


figure 11: Entrepreneurial search descriptive statistics summary

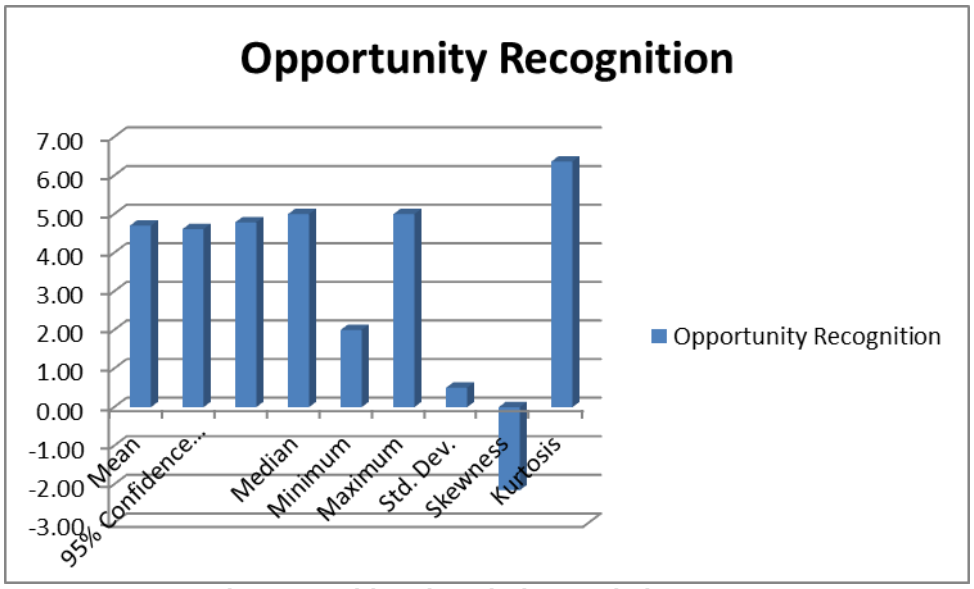


Figure 12: Opportunity recognition descriptive statistics summary

The means and medians of all the variables are above the midpoint 3. The skewness is always negative in all the variables, indicating that the majority of the respondents scored relatively high on each scale.

5.4 Reliability and Validity

5.4.1 Reliability

Reliability measure the consistency of the scales and the degree to which it can yield the same results. Reliability uses the Cronbach's alpha and the inter-item correlation. The results of these are in table. The general rule is that the Cronbach's alpha must be greater than 0.70 and the lower limit of 0.60 is still acceptable. The entrepreneurial alertness scale was revised (table 5) to improve its reliability. The scale had 8 items the second item in the scale was dropped so that the reliability of the scale was reasonably high. The revised scale Cronbach's alpha was 0.75 showing a significant and acceptable measure of reliability for the alertness variable scale. The average inter-item variable was 0.28

The knowledge variable had 8 items in its scale. The Cronbach's alpha was 0.67. It is slightly below the 0.70 mark however above the minimum of 0.60 it shows the scale is fairly reliable. . The inter-item was 0.22

The search alertness scale had 8 items. The Cronbach's alpha was 0.80 showing a significant and acceptable measure of reliability. The scale had an inter-item correlation of 0.34.

The opportunity recognition scale had to items and registered a Cronbach's alpha of 0.76 also showing a significant and acceptable measure of reliability. The inter-item correlation is the highest in the study of 0.62

5.4.2 Construct validity

The researcher did an exploratory factor analysis using the extraction method of Principal Components and varimax rotation. The scree plot (Figure 2) suggested four factors. The table of factors is shown in Table 6. The expectation is to have the pattern of loadings to reflect all high loadings for items designed to measure the same construct. However this is not the case. Even though there are high or low loading even when measuring there is no

strong evidence to support the construct validity. The figures range from .00 or .01 to 76 but mostly low values. This is different from a previous study by Tang et al (2010) which showed high variables up of between .71 and .91 this is worry

5.5 Comment on regression summary of statistics:

This summary focuses on the scatter plots and regression results. The data from the survey shows that all numerical independent variables do not seem to follow a perfectly normal distribution. The data actually has a negatively skewed distribution *i.e.* skewness<0 and mean < median. The merchandise curve appeared closest to zero if the data at the lower end is considered an outlier. The fact the mean in all cases is above the middle point of the scale might also indicate that most of the factors identified could have some relevance in determining opportunity recognition.

Regression assumptions the model was found to have a relatively low R^2 of 0.14 and therefore the model might not be quite as accurate when used to explain opportunity recognition as it has low goodness of fit. A test of α of 5% was used as the outcome of the regression is important but not crucial to justify a lower α.

The model did pass the following regression tests:

- The causal links between the independent variables and dependent variable are logically plausible.
- There was no autocorrelation in the plot of residuals as no pattern can be observed from the plots he there is independence of variable.
- The histogram of residuals was almost a normal distribution curve while the normal probability plot of the residuals was found to be within the confidence intervals of the expected normal.
- The residuals of opportunity recognition against the independent variables were found to be homoscedastic.

There was no multicollinearity. The scatter plots of the distributions show some outliers which are pilling the data from normal distribution.

The R^2 displayed in table 8 were all showing 14% for all variables and even less for the variables individually. This is a problem of fit and does not mean the results become insignificant as the R^2 does not necessarily give the meaning of the data.

5.6 Discussion pertaining to Research Question 1

5.6.1 Introduction

Entrepreneurial alertness is a state of awareness to changes in the environment. Where monitoring of the changes leads to discovery of entrepreneurial opportunities.

The first research question was: How alert are you to recognising opportunities.

5.6.2 Discussion

Previous studies done in regards to opportunity recognition showed value of alertness to identification of opportunities (Tang et al. 2010). Scholars have also done intense research in understanding entrepreneurial alertness (Kirzner, 1979).

The correlation of the dependent variable opportunity recognition and entrepreneurial alertness is 0.26 which is significant and shows there is no multicollinearity. The p value is 0.002. The determination of rejection or acceptance lies in the p-values. If the p value is lower than .05 or 0.1, it can be held that a straight line fits the data sufficiently to continue. Therefore conclusions can be drawn can be drawn from the data in regards to the hypothesis.

When the p value is lower than the alpha there is no evidence found to reject the hypothesis. In this case we accept the hypothesis. There is partial support

of the hypothesis. However this is in line with previous studies which showed that entrepreneurial studies does lead to opportunity recognition.

The alertness scale had low Cronbach's alpha of 0.49 and the scale was adjusted with item 2 being removed from the scale thereby raising the Cronbach's alpha to 0.75 above the 0.70 mark. This increases the internal reliability of the scale. The study by Tang et al (2010) presented high reliability and confirmed the evidence and the items retained the strong figures after 3 rounds of tests showing strong internal reliability.

The mean is higher than the midpoint. This shows the many of the respondents answered highly in the alertness. The sales were looking at the alertness of the entrepreneur and how. The means show that a significant number found value in being alert and some of the alertness methods they used.

5.6.3 Conclusion

The studies done before in entrepreneurial alertness show much stronger relationship between opportunity recognition and entrepreneurial alertness. Showing it is a significant component to opportunity recognition. This study however showing weak results also concludes the same that the two have a positive relationship and entrepreneurial alertness important in opportunity recognition.

5.7 Discussion pertaining Research Question 2

5.7.1 Introduction

Active search of opportunities has limited amount literature on it. There have not been very many studies done on the subject of active search of opportunities. It is seen and cited as an important factor in the recognition and the researcher noted that it is normally briefly mentioned in articles.

It was in some instances mentioned in the way as alertness a notion which was dispelled by scholars like Kirzner and Venkataraman, who maintained that

alertness is to “notice without search”. And active search involves hands on methods of looking for opportunities as well as committing resources to the same.

The second research question was:

What search mechanisms have you employed when searching for opportunities

5.7.2 Discussion

The correlation between opportunity recognition and active search is 0.32 and significant and shows no multicollinearity. The p-value is .000 this is far lower than .05 or .01 as well. Therefore there is significance at the level .01 and adds reason that a straight line fits the data. As mentioned earlier when the p value is lower than the alpha there is no evidence found to reject the hypothesis. In this case as well the hypothesis is accepted. There is also limited or partial support for the hypothesis. Studies and scholars also agree that active search of opportunities leads to increased discovery of opportunities Tang et al.

The Cronbach’s alpha for the search scale was .80 which a good and significant figure in showing reliability. It is above the typical mark which is .70. This show that the scale has sound internal reliability and the study can be generalised. The study by Tang et al. (2010) had a search scale Cronbach’s alpha of .71. The researcher had based some of the questions in the search scale from the same study. This was also after 3 rounds of robust tests and retained the same high Cronbach alphas.

The mean of the search scale is quite high above the mid-point at 4.25, the midpoint is 3. This shows the respondents answered high in the search scale. The methods of search in the survey include browsing the internet daily, frequent interactions with others, discussions with clients, subscription to professional and entrepreneurial bodies, reading newspapers and being part of entrepreneur support groups. The high responses reflect the majority of respondents use these mechanisms in their search of entrepreneurial

opportunities. Searching for opportunities is somewhat of a given for entrepreneurs wanting to identify opportunities.

5.7.3 Conclusion

The second question had strong reliability representing a good scale. This means also showing a strong concurrence to the search methods in the survey. The results showed much support for the second research question.

5.8 Discussion pertaining to Research Question 3

5.8.1 Introduction

Prior knowledge had a lot of literature on it and as well as theories looking at it in various dimensions. Prior knowledge is also important in the aspects of human capital. Prior knowledge from previous literature also cited in this paper is essential in the opportunity discovery process as well in exploitation and maintaining the venture. Prior knowledge also leads to opportunity identification with regards to information asymmetries.

The third research question was:

To what extent has the knowledge you have been key in recognising opportunities?

5.8.2 Discussion

Previous studies by several scholars including Venkataraman (1997), Shane (2000), Baron (2000) and several others highlighted the importance of knowledge in opportunity recognition.

The correlation between opportunity recognition and prior knowledge is .20 showing significance that’s there is a relationship but no multicollinearity. The p

value .02 which is above .01 but below .05, this reflects significance at level .05. For the reasons mentioned earlier there is no evidence to reject the hypothesis, the p value is lower than the alpha .05. This a small support for the hypothesis.

The Cronbach's alpha is just shy from the .70 mark at .67. The difference though is small the scale it does not sufficiently fulfil the internal reliability, leaving from for questions. This in contrast to the study by Tang et al. which had high Cronbach's alpha showing a good internal reliability.

The mean for the knowledge variable is 4.24 which is above the scale mid-point of 3. The knowledge scale was asking various questions on knowledge including role of previous career back ground, venture and work experience, knowledge base of colleagues and selection of opportunities. The majority responds in highly in favour for the knowledge questions.

5.8.3 Conclusion

However there is low support of some results there is still a positive relationship between opportunity recognition and prior knowledge. Other studies show stronger relationships between the 2 variables.

5.9 Conclusion

A weak support was found for all the hypotheses although the R^2 values were all low at most 10% variation in opportunity recognition explained by an single predictor and 14% and explained by all three predictors jointly. If the outcome is transformed to realise more normally distributed, below:

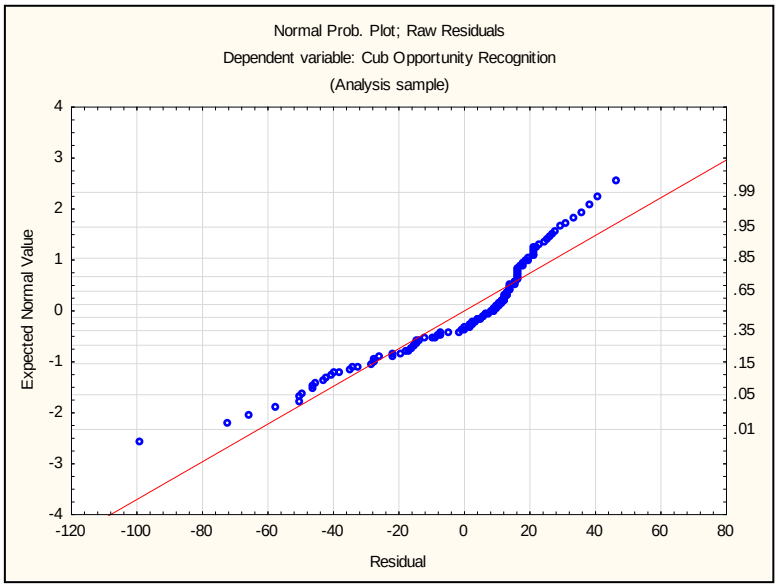


Figure 12: plot of residuals 2

The above figure is after the transformation, fit becomes better.

The low correlations are probably because the scales have low reliability, poor construct validity and skewed distributions and rather than the constructions they represent. They do, however show a relationship between the dependent variable and independent variables at different levels. This illustrates that the independent variables show cause/ lead to the dependent variable. The independent variables alertness, search and knowledge do lead to opportunity recognition.

The descriptive statistics give a summary of the data and also an analysis of the demographic questions.

6 CHAPTER 6: CONCLUSION AND RECCOMENDATIONS

6.1 Introduction

This chapter gives a summary of the study and also will give the conclusions arrived at as a whole and in reference to the literature reviewed. The chapter will also discuss the limitations of this research, highlighting the challenges and weaknesses of the research. Recommendations and suggestions for future research will follow.

6.2 Conclusions of the study

The results of the survey were run through various tests for analysis. The regression revealed a low R^2 of 14% of all the variables. This is quite small; however, it is a show of fit and does measure how well the independent variables explain the independent variable. A transformation was run on the data improving the fit of the data.

Literature reviewed showed that opportunity recognition is significant in the entrepreneurial process and also leads to new venture creation. The study asked the respondents their view on the importance of opportunity recognition and the finding were that the majority of the respondents agreed that it is critical for a business and is also important in entrepreneurial success. This is in support with the literature and studied previously done citing that opportunity recognition is regarded as a key entrepreneurial skill (Westhead, Ucbasaran, Wright & Binks, 2005).

The search mechanisms used in the by the entrepreneurs varied but the study showed that searching for entrepreneurs was important to the entrepreneurs and for their business as well. In South Africa entrepreneurs support groups and organisations also provide assistance to the entrepreneurs, it is these discussions that guide an entrepreneur on steps to take. Talking with clients also a search mechanism used by respondents and this was also highlighted in the literature as being useful to opportunity seeking entrepreneurs. Customers

can highlight their need and shortfalls of the current product or service which can be a basis of the opportunity. An entrepreneur exploits the gap or weakness in the environment.

Knowledge is a much reviewed and studied tool of opportunity recognition. The importance is not only in the knowledge base of the entrepreneur but the differences in the information dispersion in the environment lead to opportunity identification. Venkataraman (1997) that not two individuals can possess the same type of knowledge at a given time and that it is equally diffused in the economy, however, it is not a given that it is equally available to everyone in the environment. The responses to the survey highlighted that knowledge was valued by the entrepreneur and majority of the entrepreneurs had background knowledge of the business, either through the work experience or their educational background. It is important for the entrepreneur to be knowledgeable about the venture so as to note opportunities as they come. The knowledge variable in entrepreneurship is very essential in leading to opportunity recognition. The researcher noted that having knowledge and experience in a certain field can lead to noticing of opportunities as they come and also can allow one to anticipate any changes in the environment leading to recognising opportunities well before other individuals do.

Entrepreneurial alertness is imperative in recognising opportunities. It is enables the entrepreneur to identify an opportunity as immediately it appears (Alvarez and Busenitz, 2001). A look at the responses from the survey, the entrepreneurs try to maintain a state of awareness to the environment and also accepting that opportunities can be identified at any time and in any situation. This is also accepted in the literature that entrepreneurs are present in the environment and await to be discovered. The study findings show that alertness increases the likelihood of discovering opportunities.

The results of the analyses did show some weakness in reliability and weak support in the hypothesis the study did however show that there was a positive relationship between the dependent variables and the independent variables. This indicates that the independent variables cause/ lead to the dependent

variable to take place. The low R^2 might also mean that there are other causes of the opportunity recognition which were not captured on this research.

6.3 Limitations of the study

The study faced a number of weaknesses.

- The Cronbach's alpha for the alertness variable was low at 0.49, however the after the scale was revised the Cronbach rose to a high of 0.75.
- There was missing data in some of the responses in some questions of the survey instruments.
- There was a weak support of the hypothesis.
- The factors analysis showed from the low to high loadings of the factors. Ideally they all were meant to be high.

6.4 Implications of the study

The findings of this research give a minor overview of the entrepreneurial environment in South Africa. The demographic questions give an outlook of the age of entrepreneurs, industry and as well as types of businesses of the entrepreneurs. The research also gives an insight of the search mechanisms used by entrepreneurs and the education background of the entrepreneurs. The use of alertness, knowledge and search methods to identify opportunities is important to potential and active entrepreneurs.

6.6 Recommendations

The significance of the study was established by research in the GEM report in regards to low entrepreneurial orientation in South Africa. The ability to identify opportunities is important in entrepreneurship and an understanding of the

factors that lead to opportunity discovery and how they can be used and if they are significant in recognising opportunities.

Entrepreneurs running their own ventures will need to expand and as well identify innovative ideas to have and maintain a competitive advantage. It also leads to growth of the business, which certainly is a desired effect which trickles down to the communities and people. An understanding of OR and factors leading to OR will certainly achieve this.

To potential entrepreneurs there also needs to be an understanding of the environment and how to look at it as having potential opportunities which are waiting to be found. Establishing how the process of can be accelerated or enhanced leads to OR.

Knowledge is a fundamental function of entrepreneurship. An entrepreneur must have knowledge. Knowledge of several aspects including, the environment, the industry of the business,

6.7 Suggestions for further research

A look at opportunity recognition opens a whole new door in to entrepreneurship. An area of possible research stems from the need to further understanding opportunity and the role of cognitive processes in the mind of the entrepreneur. There is not much literature on the cognitive processes and how they are essential to the entrepreneur and how the aid the entrepreneur in opportunity recognition.

A second area of further study is the reason why some entrepreneurs are able to recognise more entrepreneurs than others. Some entrepreneurs will recognise opportunities sooner than others or some will not completely and rely on following the ideas of others. The ability to recognise opportunities leads to formation of new ventures there is thus a need to understand why some individuals are able to see opportunities and while others do not and perhaps also if the reasons can be adopted by other individuals.

A third area of possible research is the complete opportunity recognition process. Identification of potential profitable opportunities is only a step in new venture formation. Questions do arise of does the entrepreneur pursue the opportunities and if so what steps are to be taken to make sure the opportunity can be realised to its true value and be sustainable.

The study revealed that there is quite a little research and literature done on the variable search/ active search. A note also made by Tang et al (2010) who also did a similar research. Further research in the search variable will bring understanding into the variable as well as search mechanism which ‘work’ or are more effective in opportunity recognition.

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APPENDIX A – LETTER TO RESPONDENTS

Dear respondent

I am WBS (Wits Business School) Student doing a Masters of Management in Entrepreneurship and New Venture Creation, conducting a research for my Thesis. The survey is measuring the significance of opportunity recognition in entrepreneurship and the key elements of recognizing entrepreneurial opportunities (namely Knowledge, Alertness and Search) and how these elements are employed.

Kindly take time out of your busy schedule to respond to the survey. It has short and precise questions.

Please note your privacy will be maintained and the results of the study used strictly for academic purposes. Your anonymity will be maintained as no personal details are required.

Please follow the link below.

Your participation in this survey is greatly appreciated.

Thank you.

Yours Sincerely,

Miriam Gunda.

APPENDIX B – RESEARCH INSTRUMENT

Demographic Questions.

1. Gender: Are You …?

i) Male
ii) Female

2. Age group?

i) 18-35
ii) 36-50
iii) 51-64
iv) 65+

3. Education: What level of education have you completed? If still enrolled please tick the previous grade.

i) Secondary school education
ii) Matriculation certificate
iii) Diploma
iv) Bachelor's degree
v) Master's Degree
vi) Doctors degree (PhD)

4. Level of work experience.

i) 0-1
ii) 1-5
iii) 6-10
iv) 11-15
v) Over 15 years

5. Age of your business? If you have more than one business, please indicate the age of your oldest business?

i) 0-1
ii) 1-3
iii) 4-6
iv) 7-10
v) 11-15
vi) Over 15 years

6. What sector is your business in? (e.g. IT, Consulting, Financial services)

7. How did you start your business? (e.g. New Venture, Handed down to you)

8. This is my first venture?

i) YES
ii) No

9. If No how many business ventures have you been involved in their formation?
   i. 1
   ii. 2
   iii. 3-5
   iv. 6-10
   v. More than 10

10. What is the size of your business?
    i) 1 – 10 employees
    ii) 11 – 25 employees
    iii) 25 - 50 employees
    iv) 50 – 100 employees
    v) Over 100 employees

11. Was your venture based on entirely new concept or it is inspired by a similar process you witnessed?

12. Do you think fear of risk prevents people from going into business?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

13. In your opinion is actively seeking to identify new opportunities crucial for any business?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

14. In your opinion, would you agree that opportunity recognition is key to an entrepreneur to be successful?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

15. Alertness. On a scale of 1-5, In your opinion, would you say:

a) I am highly attentive to entrepreneurial opportunities?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

b) I do not actively seek opportunities?

1	2	3	4	5

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

c) I recognize opportunities while going about other tasks?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

d) I am aware of the possibility to identify opportunities at any given point?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

e) I have an extraordinary ability to smell profitable opportunities?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

f) I am highly observant to any changes in the industry?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

g) I have a gut feeling for potential opportunities?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

h) Seeing new opportunities comes naturally to me?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

16. Search.

On a scale of 1-5, In your opinion, would you say:

a) I actively seek opportunities?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

b) I browse the internet every day in search of opportunities?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

c) I have frequent interactions with others to acquire new information?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

d) I am an avid information seeker?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

e) I talk to clients and colleagues to see any areas in need of change?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

f) I subscribe to professional bodies and research centers to keep abreast of new innovations in the industry?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

g) I am a part of an entrepreneurial support group so as to share ideas?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly

				Disagree

h) I read newspapers, journals in search of opportunities?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

17. Prior knowledge.

On a scale of 1-5; In your opinion would you say:

a) My present venture is highly based on my previous work experience?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

b) My education plays a huge factor in recognizing opportunities?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

c) I collect information related to the venture I manage?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

d) I make connections with information which seems unrelated?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

e) I keep an eye out for new opportunities when looking through information?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

f) I am confident with the knowledge base of my colleagues?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

g) When faced with multiple opportunities I am able to select good ones?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

h) I draw much insight from my previous experience?

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly

				Disagree

APPENDIX B

Consistency matrix

The consistency matrix is shown below:

Research problem stated here					
Sub-problem	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
The first sub-problem is to explain the importance and role of opportunity recognition in entrepreneurship	Baron & Ensley, 2006 Eckhardt & Shane, 2003 Baron,2006 Archdivili, Cardozo & Ray, 2003 Dutta & Crossan, 2005	Research questions 1,2,3	Questionnaire: questions 13 & 14	Categorical Interval	Descriptive statistics, Regression analysis

Research problem stated here					
Sub-problem	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
The second sub-problem is to assess three key factors in the opportunity recognition process.	Corbett , (2007) Venkataraman, (1997) Shane, (2000) Gaglio & Katz, Kirzner (1979, 85, 97)	Research questions 1,2,3	Survey questionnaire: 15, 16, 17	interval	Descriptive statistics Regression analysis Factor analysis