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The influence of work experience on entrepreneurial intentions and opportunity recognition: A focus on postgraduate students 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 specialising in Entrepreneurship and New Venture Creation

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ABSTRACT

The objective of this study was to examine the relationships between the human capital variable work experience with opportunity identification and entrepreneurial intention. The study focused on postgraduate students with work experience and sought to establish the existence of links between their work experience and their opportunity recognition process, as well as their work experience and their entrepreneurial intention.

The study examined previous literature, which highlighted that students with previous work experience had higher levels of entrepreneurial intention, compared with students without previous work experience. Thus, the study set out to examine the relationship between these constructs, including opportunity recognition in the process.

The study was a cross-sectional, quantitative study, which followed a positivist paradigm approach. Primary data was collected from postgraduate students through a self-administered questionnaire. Data analysis included exploratory factor analysis, reliability and validity testing, linear regression and correlational analysis. The study found that work experience was not a significant predictor of opportunity recognition or entrepreneurial intention. The study also highlighted that there were negative relationships between work experience and opportunity recognition, as well as work experience and entrepreneurial intention.

The study's findings are important in that they could help the youth, in particular students, who would like to pursue their own entrepreneurial ventures to understand the knowledge and experience required to successfully develop a new business.

Key words: work experience; opportunity recognition; entrepreneurial intention; postgraduate students; South Africa.

DECLARATION

I, Roderick Volkersz, 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 Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

_____

Roderick Volkersz

Signed at ……

On the …….. day of ……..…… 20 …..

DEDICATION

I would like to dedicate this research paper to all aspiring postgraduate students. The journey to achieve a postgraduate qualification, like a master's degree, is a long and challenging journey, but at the same time a very enriching and rewarding experience.

ACKNOWLEDGEMENTS

First, I would like to thank my family for their support throughout this long and challenging journey, especially my father and mother, who made this opportunity a reality for me. I will always be indebted to you for the love and support you have shown me.

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Finally, I would like to thank all the respondents who took the time to complete my research survey; without data, there is no study.

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CHAPTER 1. INTRODUCTION

This chapter begins with identifying and explaining the relevant theory in relation to the context of the study, from which the problem statement is identified, followed by the identification of the purpose of the research study, the research questions, and the aim of the study. Finally, key terms are defined in the context of the study and motivation provided supporting the contribution of this study.

1.1 Theoretical Background of the Study

This study examined the influence of work experience on opportunity recognition and entrepreneurial intention among postgraduate students. The study incorporated a multi-theoretical background of which the following were applicable: the human capital theory, the theory of planned behaviour, the signal detection theory, and the regulatory focus theory (Urban & Venter, 2015). To understand the process of how individuals identify opportunities, the study examined the signal detection theory and regulatory focus theories.

1.1.1 Human capital theory

The human capital theory suggests that making investments in people will lead to economic and societal benefits (Olaniyanand & Okemakinde, 2008). In previous studies, education has emerged as the prime human capital investment for empirical analysis (Olaniyanand & Okemakinde, 2008). One of the outcomes of their study highlighted the value that previous work experience can have for individuals in adding value to the economy and society through new venture creation.

The human capital theory helped to explain the key assets that individuals possess, like knowledge in the form of work experience or education. The theory was utilised in this study to gain a better understanding of the key

construct (work experience); the theory is examined further in the literature review.

1.1.2 The theory of planned behaviour

Ajzen's theory of planned behaviour (Armitage & Conner, 2001) suggests that an individual's intent to perform a specific behaviour is dependent on how the individual perceives the behaviour. If the individual believes they are capable of performing the behaviour and have access to the various elements to carry out the behaviour (for example, access to finance to start a new venture), then the individual would carry out the behaviour (Armitage & Conner, 2001). Essentially, if the perceived behaviour and actual control over the behaviour are aligned, the intention was the immediate antecedent of the behaviour (Urban & Venter, 2015).

The theory of planned behaviour was useful in this study, to understand how individuals' behaviour was affected by their ability to assess the outcome of that behaviour. The theory explained the potential links that exist between work experience and its influence on behaviour with regard to an individual starting a new venture.

1.1.3 Signal detection theory

The signal detection theory focuses on determining whether an opportunity is present. The theory starts by determining if a stimulus is present, and developed to focus on how individuals respond to this stimulus (Nevin, 1969). To understand how this theory applied to entrepreneurship, Urban and Venter's (2015) suggestion of four possibilities of situations, in which entrepreneurs attempt to determine whether a stimulus is present or absent, were considered:

(1) "The stimulus does indeed exist, and the perceiver concludes (correctly) that it is present (this is known as a hit or correct identification);

(2) The stimulus does exist, but the perceiver fails to recognise it (this is known as a miss);

(3) The stimulus does not exist, and the perceiver concludes erroneously, that it is present (this is a false alarm); and

(4) The stimulus does not exist, and the perceiver correctly concluded that it is not present (a correct rejection, another kind of hit)" (Urban & Venter, 2015:157).

This theory highlights how entrepreneurs go through the process of identifying opportunities.

Literature by Baron and Ensley (2006) highlighted the importance of cognitive theory, like signal detection theory, in providing important insights into the mechanism through which entrepreneurs distinguish between bona fide opportunities and false alarms. Other literature from Baron (2004) showed the importance of signal detection theory and entrepreneurs decisions around a pattern of events or stimuli that they have tentatively identified as "business opportunity", which then leads them to follow the subsequent phases of the process, such as starting a new venture.

The signal detection theory provides an explanation on how entrepreneurs identify potential opportunities. It is vital to understand the process to gain a better understanding of how individuals are believed to identify opportunities. It aided in the development of a scale that was able to capture the process in this study.

1.1.4 Regulatory focus theory

The regulatory focus theory emphasises regulating entrepreneur's behaviour to achieve a desired result. The theory focuses on individuals' engagement in self-regulation and explains the process of alignment with standards and goals (Brockner, Higgins, & Low, 2004). In understanding how the theory applied to entrepreneurship, Urban and Venter's (2015) stipulation that the theory aids in explaining the factors that determine whether entrepreneurs are primarily motivated to attain hits, avoid false alarms, or avoid misses. By regulating their own behaviours, entrepreneurs adopt one of two contrasting perspectives:

(1) “A promotion focus, in which their primary goal is attaining positive outcomes; or

(2) A prevention focus, in which their primary goal is avoiding negative outcomes” (Urban & Venter, 2015:158).

Entrepreneurs who were successful at identifying valuable opportunities adopted a mixture of these two perspectives; while, entrepreneurs who were less successful at identifying valuable opportunities may have adopted a pure promotion focus (Urban & Venter, 2015). The regulatory focus theory offers unique insights into the process of opportunity recognition, which were utilised in the study.

Literature from Hmieleski and Baron (2008) highlighted that it is not wise to view either of the two regulatory focus perspectives (prevention and promotion) as superior or more adaptive across situations and contexts. The most successful application is a combination of these perspectives.

The regulatory focus theory provided further explanation on entrepreneurs’ identification of potential opportunities. The regulatory focus theory, along with the signal detection theory, were vital to understand how individuals are believed to identify opportunities. It aided in developing a scale that would capture the process in this study.

1.2 Context of the Study

This study was conducted in the context of human capital in entrepreneurship with a particular focus on South Africa. According to Urban and Venter (2015), human capital can be defined as knowledge and skills that are acquired by individuals through investment in education, work experience, and other experiential exposure. The study focused on work experience as a variable of human capital and examined the relationship that existed between this construct and opportunity recognition, as well as entrepreneurial intention. To understand the current state of work experience in relation to its effect on opportunity recognition and entrepreneurial intention of students, reference was

made to Fatoki (2014), who showed that students with previous work experience have a higher level of entrepreneurial intention compared with students without previous work experience. Literature from Ucbasaran, Westhead, and Wright (2008), identified that human capital variables, such as work experience, are related to entrepreneurial outputs such as opportunity identification.

When examining previous literature, the focus was on education as a variable of human capital and its impact on students' opportunity recognition processes and their entrepreneurial intentions. Thus, this study sought to understand the influence of work experience on opportunity recognition and entrepreneurial intention. In this study, work experience was defined as any form of experience within the functional areas of business, which included marketing, finance, production, operations, technology (IT), legal, and sales. The reason was that students would try to gain formal business experience in line with their studies, and that this would increase the number of potential participants in the study. By gaining a better understanding of the human capital factors that contribute to individuals' abilities to identify entrepreneurial opportunities and their willingness to pursue them, focus can be directed to developing those factors, which in turn would assist the development and growth of future entrepreneurs in South Africa.

1.3 Problem Statement

South Africa has faced the challenge of elevating poverty ever since the dawn of democracy. The South African government has tried to rectify the wrongs of the past and has put measures in place to address inequality and provide opportunities to previously disadvantaged South Africans. This is evident in the B-BBEE scheme targeted at promoting the participation of black South Africans in the country's economy (DTI, 2019). South Africa's youth unemployment stood at 38.2 per cent in the first quarter of 2018, which indicates that roughly one in every three people between the ages of 18 and 34 years of age did not have a job in the first quarter of 2018 (Stats SA, 2018). This raises the question

of how employment opportunities can be promoted for the South African youth? To create jobs, young entrepreneurs, able to identify opportunities and willing to act on those opportunities, need to be developed. Literature has highlighted the positive impact of education on individuals' ability to identify opportunities and their willingness to act on them.

This study examined individuals' work experience and its impacts on the ability to identify and act on entrepreneurial opportunities. A positive impact could be the promotion of young South Africans to develop this aspect of their human capital, which in turn could increase the chances of becoming effective entrepreneurs who could develop employment opportunities for South Africans and help to address the challenge of reducing youth unemployment in South Africa.

1.4 Purpose, Research Question and Aim of the Study

- *Purpose*: This quantitative study examined the relationship between postgraduate tertiary students' work experience and entrepreneurial intentions, and between work experience and opportunity identification.

- *Research question*: Is there a significant relationship between postgraduate students' work experience and entrepreneurial intentions, and between work experience and opportunity recognition?

- *Aim of the study*: The literature has highlighted that there was a relationship between human capital and entrepreneurial intention, and between human capital and opportunity identification. This study examined these relationships in the South African context among postgraduate students. While previous studies focused on education as a variable of human capital, this study focused on work experience.

1.5 Definitions of Terms

The terms in Table 1 were important to understanding the context of the study. The dictionary definition of each term was sourced from the online Oxford Dictionary (OED, 2018a, b, c, d). The expert definition explained the context of each term in relation to the context of the study.

Table 1: Definition of terms

Term	Dictionary definition	Expert definition	Context of the term
Work experience	"Short term experience of employment, typically arranged for older pupils by schools" (OED, 2018d).	"The number of months spent in a particular job (job tenure), or the number of times a particular task has been performed" (Quińones, Ford, & Teachout, 1995:888).	Any form of experience within the functional areas of business which include, marketing, finance, production, operations, technology (IT), legal, and sales.
Opportunity	"A time or set of circumstances that makes it possible to do something" (OED, 2018b).	"An opportunity may be the chance to meet markets need (or interest or want) through creative combination or resources to deliver superior value" Ardichvili, Cardozo, & Ray, 2003:108).	Any possibility that an individual identified in relation to pursing an entrepreneurial venture.
Intention	"A thing Intended; an aim or plan" (OED, 2018a).	"Entrepreneurial Intention is defined as the entrepreneur's dedication to start a new business" (Urban & Venter, 2015:47).	Individuals' willingness to pursue an entrepreneurial venture
Postgraduate	"Relating to or denoting a course of study undertaken after completing a first degree" (OED, 2018c).	Not applicable.	Individuals studying a postgraduate qualification (NQF 7+).

1.6 Significance of the Study

In order to develop South African entrepreneurs, a better understanding of the aspects of human capital needing development and investment is required. A study by Wu and Wu (2008) highlighted the benefit of education on students' willingness to pursue their entrepreneurial opportunities. Examining students' work experience and its influence aided in determining whether it was a factor that young South Africans needed to invest in and develop to become better entrepreneurs.

From an academic perspective, this study aimed to add to the existing body of knowledge in terms of the relationships of human capital variables with both entrepreneurial intention and opportunity recognition. A plethora of literature exists on education as a variable of human capital; therefore, this study looked to provide more evidence on the effects of work experience, with a particular focus on South Africa. The increase in literature on work experience could guide other researchers and practitioners to develop policies that aim to promote entrepreneurship in South Africa.

By conducting this study, the findings from this report were expected to:

- provide an understanding of the relationships that existed between work experience and both opportunity recognition and entrepreneurial intention;
- determine if work experience, as a variable of human capital, was a factor that young South Africans needed to identify entrepreneurial opportunities and be willing to pursue those opportunities; and
- understand how entrepreneurs in South Africa can be developed by learning which aspects of human capital require investment.

1.7 Structure of the Report

The outline of each chapter is as follows:

- Chapter 1 introduces the context and the theoretical background to the study. It provides the context of the study, the problem statement, its aim and purpose, as well as key definitions and the significance of the study.

- Chapter 2 provides the definitions of key concepts, followed by a detailed review and analysis of the existing literature on the variables that the study was examining: work experience, opportunity recognition, and entrepreneurial intention, from which hypotheses were formulated. In addition, this chapter presents the conceptual framework that illustrates the proposed relationships of work experience with both opportunity recognition and entrepreneurial intention.

- Chapter 3 provides the methodological approach and paradigm that guided the study. It further details the sampling method, sample size, the research instrument and the data collection procedure followed. The data screening and data analysis technique are addressed; testing assumptions, validity, and reliability of the research instrument are discussed. Finally, ethical procedures followed are presented.

- Chapter 4 presents the results of the data analysis and details the relationship that exists between the variables through the hypotheses testing. The chapter begins by presenting the sample characteristics, followed by the exploratory factor analysis results. Finally, the reliability and validity results, and the linear regression results are presented.

- Chapter 5 discusses the study's findings against literature reviewed to determine whether the findings are in line with previous studies or offer different insights.

- Chapter 6 provides an overall conclusion to the study; the limitations and practical contributions are explained, and directions for future research are suggested.

1.8 Conclusion

This chapter, focused on identifying and explaining the relevant theories, which included human capital theory, the theory of planned behaviour, signal detection theory, and regulatory focus theory in relation to the context of the study, from which the problem statement was identified. Following which, the purpose of the research study was identified, as well as the research question and the aim of the study. The key terms were defined and motivation provided supporting the contribution of this study. Finally, the structure of the report is presented which outlines each of the chapters.

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

In this chapter, the definitions of the topic, which included human capital, entrepreneurial intention, and opportunity identification, are discussed. Previous literature, focusing on human capital variables, entrepreneurial recognition, and entrepreneurial intention, was reviewed and its relation to the topic of this research study was explained. Based on this review of previous literature, hypotheses were formulated which were used as a basis for this study. Finally, a conceptual framework was developed to visually illustrate the correlation between work experience, opportunity identification, and entrepreneurial intention.

2.2 Literature Background

The research report focused on the following key definitions in relation to the research topic:

- *Human capital*: Defined as “knowledge and skills acquired by individuals from the investment in education, on-the-job training, and other experimental exposure” (Urban & Venter, 2015, p. 55). Human capital is vital in discovering and creating entrepreneurial opportunities, and it aids in exploiting opportunities by acquiring financial resources and launching new ventures. Furthermore, it assists in the accumulation of new knowledge that creates advantages for new firms (Marvel, Davis, & Sproul, 2016). Human capital is a combination of various variables, which include knowledge, education, and work experience (Urban & Venter, 2015). For the purposes of this study, education and work experience were discussed as variables of human capital. Education was selected due to the number of previous studies sourced that showed education as a variable of human capital, and its correlation with

opportunity identification and entrepreneurial intention. Work experience supported the topic and previous literature showed that a positive relationship existed between opportunity identification and entrepreneurial intention.

- *Entrepreneurial intention*: Defined as a mental orientation such as a desire, wish, or hope that influences an individual's choice of new venture (Peng, Lu & Kang, 2012). Intentions are a key predictor of any planned behaviour, which includes entrepreneurship (Peng et al., 2012; Urban & Venter, 2015) According to Urban and Venter (2015), entrepreneurial intentions stem from motivation and cognition, which include an individual's skills, ability, and intellect. Based on this information, the research focused on how work experience (which forms part of an individual's cognition) relates to an individual's entrepreneurial intention.

- *Opportunity recognition*: Seen as a process that begins when entrepreneurs notice factors in their field of expertise, which results in the recognition and evaluation of potential business opportunities (Urban & Venter, 2015). The core process of opportunity identification consists of the following, opportunity recognition, opportunity development, and opportunity exploitation (Urban & Venter, 2015). Hence, work experience and its relation to the entrepreneur's ability to recognise and evaluate potential business opportunities

2.3 Human Capital

In this section, literature focusing on education and work experience, as variables of human capital, is reviewed. In the sections that follow, the first variable addressed is education, followed by work experience.

2.3.1 Education

There is extensive literature available that describes the relationship between education, opportunity identification, and entrepreneurial intention. Although this

study focused on work experience as a variable of human capital, it is important to note the literature around education, and draw any parallels between prior studies that examined education and work experience and their relationship with opportunity recognition and entrepreneurial intention.

Studies have shown the relationship between education and entrepreneurial intention among students. Literature from Wu and Wu (2008) aimed to investigate the relationship between Chinese university student's higher educational background and their entrepreneurial intentions, and found that a diversity of educational backgrounds offer plausible explanations for the differences in entrepreneurial intentions of Chinese university students. Their findings highlighted that higher educational institutions should develop a more dynamic approach, with a focus on different groups of students in line with their various educational backgrounds. Furthermore, the study supported the existence of a relationship between education, as a variable of human capital, and entrepreneurial intention.

Other literature offered a perspective different from Wu and Wu (2008); a study by Kami, Biemans, Lans, Chizari and Mulder (2016) aimed to assess the impact of elective and compulsory entrepreneurship education programs (EEPs) on students' entrepreneurial intentions and opportunity recognition processes. They found that EEPs significantly influence subjective norms, but that these programs do not have any significant impact on student's attitudes towards entrepreneurship and their perceptions of opportunity identification.

Literature suggests a direct relationship between an individual's education and their entrepreneurial intentions. A study by Turker and Sonmez-Selcuk (2009) examined factors that affect the entrepreneurial intention of university students, and confirm the role of education in the development of entrepreneurial intention among university students. The study highlighted that if university students are exposed to knowledge and inspiration for entrepreneurship, it increases the possibility of them choosing an entrepreneurial career.

Further literature by Zhang, Duysters, and Cloodt (2014) aimed to identify the relationship between entrepreneurship education, prior entrepreneurial

exposure, perceived desirability and feasibility, and entrepreneurial intention among Chinese students, and found that there is a relationship between entrepreneurial education and entrepreneurial intention. They also found that males have higher entrepreneurial intention than do females. These findings support the findings of Wu and Wu (2008).

Previous literature also highlights the positive impact that interventions in entrepreneurial education can have on the entrepreneurial mindset of students. A study by Lindberg, Bohman, and Hultén (2017), examined the effects of intervention methods in an entrepreneurship education course that was structured to enhance the students' entrepreneurial mindset by targeting their opportunity identification, creativity, and risk management capabilities. The study collected data from the pre- and post-tests of three courses, with two control groups. The findings of the pre- and post-tests of the treatment courses show that applied intervention methods have a positive impact on how students perceive their opportunity recognition and creative abilities. The students in the control group, who attended a traditional course, reported no such affects. The study highlighted that intervention methods positively affected a student's entrepreneurial mindset. The findings from their study offered useful insights into how improved entrepreneurial education programs can enhance an individual's entrepreneurial mindset.

The findings from these studies indicate that education does influence entrepreneurial intention, and has a significant impact on student's attitudes towards entrepreneurship and their perceptions of opportunity identification. Education, as a variable of human capital, affects entrepreneurial intention and opportunity identification.

2.3.2 Work experience

There was evidence in literature of a direct relationship between work experience and entrepreneurial intentions. Fatoki (2014) aimed to investigate empirically whether there is a significant difference in the entrepreneurial intention of students who have work experience compared to students without work experience. Their study focused on final year business students at an

undergraduate level that had completed entrepreneurship and small business management modules. The study found a high level of entrepreneurial intention for business students, with the scale mean of 5.730. Students with previous work experience (mean of 5.902) had a higher level of entrepreneurial intention, when compared to students without previous work experience (mean of 5.519). This suggests a strong relationship between work experience and entrepreneurial intention.

There is further literature that showed the relationship between work experience and entrepreneurial intention among students. Literature from Basu and Virick (2008) assessed entrepreneurial intentions among 123 students at San Jose State University, and examined how exposure to entrepreneurship through family and direct experience affects their entrepreneurial intentions. The study found that students with prior experience in entrepreneurship have positive attitudes towards entrepreneurship, which supports a relationship between work experience and entrepreneurial intention.

Other literature showed the relationship between work experience and opportunity recognition. Literature from Ucbasaran et al. (2008) focused on the entrepreneurship specific human capital profile, which includes aspects like business ownership, experience, entrepreneurial capabilities, managerial capabilities, and technical capabilities, and examined the correlation between these aspects and entrepreneurial outputs in the form of business opportunity identification and pursuit. Part of their findings indicated that entrepreneurs with higher levels of work experience, business ownership experience, entrepreneurial capability, and managerial capability, are meaningfully associated with increased probability for identifying entrepreneurial opportunities. The findings from their study highlighted specific human capital variables, like work experience and industry experience, to have a positive relationship with opportunity identification, which supported findings by Fatoki (2014).

Mueller and Shepherd (2016) highlighted the relationship between business failure and the identification or business opportunities. The findings

demonstrated that when equipped with proper cognitive tools, individuals could benefit from their business failures (work experience), with the main benefit being an enhanced approach to identifying business opportunities (Mueller & Shepherd, 2016). The findings highlighted that work experience has a positive relationship with business opportunity identification. These findings tied in with similar findings from Ucbasaran et al. (2008), and Fatoki (2014), which supported the argument that there is a positive relationship between work experience and opportunity identification.

Previous literature called for the development of an experiential entrepreneurship work-integrated learning model to develop the entrepreneurial mindset of students. Scheepers, Barnes, Clements, and Stubbs (2018) proposed this model, aiming to develop the entrepreneurial mindset of graduate students in order to assist them in managing their careers in difficult labour markets. The model shows support for students developing relationships with their professional community, which in turn develops their social capital. Through this experience, the students' entrepreneurial mindsets are cultivated, which aids them in pursuing their own ventures. The study by Scheepers et al. (2018) offered a unique perspective in understanding how students' entrepreneurial mindsets can be developed to aid them in pursuing entrepreneurial opportunities.

Work experience aids the generation of new business ideas. A study by Gabrielsson and Politis (2012) developed an integrated framework to examine the impact of work experience on the generation of new business ideas. The framework combined human capital theory with theory and research on entrepreneurial learning. The study surveyed 291 Swedish entrepreneurs and found that a learning mind-set that favours exploration is a significant predictor in the generation of new business ideas. The study also found that work experience aids in the generation of new business ideas; however, extensive work experience was shown to have a negative impact on business idea generation. In addition, it provides insight into how work experience aids entrepreneurs in their new business ideas opportunity recognition process.

Building on the study from Gabrielsson and Politis (2018), literature showed that work experience gained as an entrepreneur, and experience investing in other firms are essential knowledge-based factors that affect the business creation process. A study by Fernandes, Ferreira, Raposo, Hernández, and Diaz-Casero (2017) examined the impact of knowledge in the business creation process. The data for this study came from aggregated panel data at country level taken from Global Entrepreneurship Monitor (GEM) publications between 2009 and 2013. The findings from this study showed that knowledge affected the business creation process, and the detection of capabilities, entrepreneurial experience, and experience in investing in other firms were key factors in the business generation process. The study highlighted that work experience gained from entrepreneurial activities is an essential factor in business generation.

2.4 Opportunity Recognition

Opportunity recognition is affected by social and business networks, individual traits, environment and market knowledge, and education, and these factors are discussed in detail below.

A study by Zaefarian, Eng and Tasavori (2016) focused on opportunity identification among family firms, and showed results that support literature from DeTienne and Chandler (2007). Zaefarian et al. (2016) explored the role of social and business networks and prior knowledge (experience) in international opportunity identification of family firms. With a specific focus on prior knowledge, the results from the study show a positive relationship between a family's entrepreneurial knowledge and the international opportunity identification process, with this relationship being moderated by prior knowledge of their network. Essentially, the experience gained from operating in international environments promotes their international opportunity identification process. The findings from DeTienne and Chandler (2007), and Zaefarian et al. (2016) offer empirical support to a positive relationship between work

experience and entrepreneurial opportunity identification and entrepreneurial intention.

A study by Hajizádeh and Zali (2016) investigated the role of prior knowledge (experience) in the entrepreneurial opportunity recognition process, and found that prior knowledge has a significant impact on opportunity recognition. This study adds to the findings of DeTienne and Chandler (2007), and Zaefarian et al. (2016), which highlight that experience has a significant impact on an individual's opportunity recognition process.

Literature from Gonzalez and Husted (2011) showed that entrepreneurs who have practical experience are better suited to identifying business opportunities, when compared with entrepreneurs without practical experience. The study specifically highlighted that entrepreneurs who have prior knowledge of customers' needs are better suited to identifying opportunities. The study also demonstrated that gender differences are not significant for either the number of opportunities or the uniqueness of such opportunities, which supported similar findings by DeTienne and Chandler (2007). The study by González and Husted (2011) highlighted that entrepreneurs are better suited at identifying opportunities if they have utilised their prior experience, and that gender differences are insignificant.

Literature from Nikraftar and Hosseini (2016) examined the antecedents of entrepreneurial opportunity recognition, highlighting that individual self-efficacy, prior knowledge, and social networks all have a significant impact on entrepreneurial alertness. The literature indicates that entrepreneurial alertness contributes significantly to opportunity recognition and offers support to the relationship between work experience and opportunity recognition.

Other literature supported the findings from Nikraftar and Hosseini (2016); Wang, Ellinger, and Jim Wu (2013) showed that individual self-efficacy, prior knowledge and social networks have a positive relationship with entrepreneurial opportunity recognition. The study highlights that opportunity recognition contributes significantly to individual-level innovation performance. In addition to the findings that support the relationship between prior knowledge and

opportunity recognition, was that social networks are antecedents to opportunity recognition. Previous work experience develops social networks and aids in developing business opportunities.

The opportunity identification process of individuals might differ depending on the type of entrepreneurial venture they want to pursue. When examining previous literature on the recognition of sustainable opportunities, a study by Patzelt and Shepherd (2011) explained factors that lead to the recognition of sustainable opportunities. They found that sustainable entrepreneurs are influenced in their identification of sustainable opportunities by their knowledge of natural and communal environments, by their motivation to develop gains for themselves, and by entrepreneurial knowledge. The findings also highlighted that prior jobs and prior projects create entrepreneurial knowledge.

It is important to understand how the university context influences students' entrepreneurial intentions and opportunity recognition. It is known that students learn from their educational programs as well as from the context in which they find themselves. A study by Oftedal, Lakovleva, and Foss (2018) used a three-dimensional institutional framework to describe the university context including regulative, cognitive, and normative structures. Regulative structures focus on rules, regulations, and initiatives that support entrepreneurship, while cognitive structures apply to knowledge among students and faculty, and normative structures focus on shared values and norms. The study found that the regulative and cognitive dimensions are of significant importance in increasing entrepreneurial intention and opportunity recognition among students. The study is useful in understanding the importance of the university context on entrepreneurial intention of students, and shows that social systems can either enable or hinder student entrepreneurs' in their willingness to pursue entrepreneurial opportunities.

Entrepreneurs need to utilise their market knowledge in identifying market related entrepreneurial opportunities. A study by Siegel and Renko (2012) utilised a longitudinal sample of 42 new biotechnology ventures from Sweden, Finland, and the United States, and examined the impact of market and

technological knowledge on the recognition of entrepreneurial opportunities. The study found that both market and technological knowledge, measured by the number of patents filed, contributes to the firm's recognition of entrepreneurial opportunities. The findings highlight that market knowledge is an essential factor to consider when understanding how entrepreneurs identify entrepreneurial opportunities.

The relationship between tacit knowledge and opportunity recognition has also been explored in previous literature, and highlights the impact of work experience on opportunity recognition. A study conducted by Marvel and Droege (2010) explored differences in tacit knowledge and opportunity recognition as reported by founders of new technology firms. The study surveyed 145 technology entrepreneurs and found that prior hands-on experience with the development of products or services, as well as prior experience with markets has a positive impact on identifying new technological innovations for the firm. These findings offer further support for the positive influence of work experience on opportunity recognition. These studies support the possible relationship between work experience and opportunity recognition.

Literature evidenced the role gender plays in a students' ability to identify entrepreneurial opportunities. A study by DeTienne and Chandler (2007) explored the gender differences in opportunity identification. The study comprises two sample groups; the first, 95 senior undergraduate students, and the second, 189 entrepreneurs in high-technology industries (DeTienne & Chandler, 2007). The study found that women and men use their unique compositions of human capital and fundamentally different processes to identify opportunities (DeTienne & Chandler, 2007). The study shows that women are significantly less likely than men to utilise a learn/replicate or a learn/acquire sequence, and are considerably more likely to utilise a learn/innovate sequence (DeTienne & Chandler, 2007). The findings of their study also highlight that the innovativeness of the opportunity is not significantly different between the genders; however, they differ in the process of identifying opportunities. The key aspect is the existence of a relationship between male and female

postgraduate students work experience, their entrepreneurial intention and ability to identify entrepreneurial opportunities.

2.4.1 Hypothesis 1

.Hypothesis 1 was formulated as follows:

H1: There is a positive relationship between work experience and opportunity recognition.

2.5 Entrepreneurial Intention

Entrepreneurial intention is affected by various aspects of behaviour, such as attitudes and cognitive styles, as well as by education and careers, and social networks, which are discussed below. In addition, age and gender, which were measured in this study, are discussed as important characteristics influencing entrepreneurial intention.

This study utilised Ajzen-Fishbein's Theory of Planned Behaviour to gain a firm understanding of an individual's perception that underpins their intention and behaviour (Krueger & Carsrud, 1993). They argued that to understand and predict new venture initiation required research using theory-driven models that adequately reflect the complex perception-based process underlying intentions and planned behaviours, such as new venture developments. The Ajzen-Fishbein's theory of planned behaviour specifies three distinct attitudinal antecedents of intention; each one drawing from existing theory and prior evidence. Two of these attitudinal antecedents reflect the perceived desirability of performing the behaviour and the personal attitude toward the outcome of the behaviour and perceived social norms. The third, perceived behavioural control, reflects individuals' perceptions of self-efficacy (Krueger & Carsrud, 1993). The authors conducted a review of the empirical evidence on Ajzen-Fishbein's framework and found that intentions successfully predicted behaviour and that attitudes successfully predicted intentions. This highlighted the importance of using theory driven models, like the theory of planned behaviour by Ajzen-Fishbein, to reflect accurately the perceived desirability of performing the

behaviour, coupled with personal attitude towards the outcome of the behaviour and perceived social norms.

Other literature that supported the use of the theory of planned behaviour in understanding entrepreneurial intention was a study by Zhang, Wang, and Owen (2015), which investigated the entrepreneurial intention of 275 students at a large United States university. The study used the theory of planned behaviour to investigate the student's entrepreneurial intention as a function of attitude, social norm, and controlled behaviour. The study found support for social norm and controlled behaviour; however, they failed to find support for attitude. The authors attributed this to a lack of entrepreneurial experience among university students. They argued that without work experience, university students struggled to assess accurately the expected value of starting a new venture. For social norms and controlled behaviour, the study showed that university students could accurately assess these two constructs without entrepreneurial experience. The students surveyed in the study showed how supportive their individual environment was towards starting a new venture and also indicated their inner ability to start a new venture.

The literature from Krueger and Carsrud (1993), and Zhang et al. (2015) offered support for the use of Ajzen-Fishbein's theory of planned behaviour as a key theory that explained an individual's mechanism in pursuing their intentions.

Entrepreneurial intention is influenced by cognitive styles. A study by Molaei, Zali, Mobaraki and Farsi (2014) investigated the effect of entrepreneurial idea dimensions along with intuitive cognitive styles, versus an analytical style, on students' entrepreneurial intentions. The study found that students with an analytical cognitive style, idea volume, and idea value, have the maximum direct impact on their entrepreneurial intention, while the least direct effect is on idea novelty, thus providing an explanation for information processing habits of students.

Evidence from literature also showed how careers had an impact on entrepreneurial intention. A study by Fietze and Boyd (2017), which looked at describing the entrepreneurial intention among Danish students, by applying the

theory of planned behaviour, found that students who prefer a career as employees, show low entrepreneurial intention. The study also highlighted that very high and very low entrepreneurial intention is related to very high and very low self-efficacy respectively, and their perception of entrepreneurial climate and learning. The study offered evidence supporting that work experience might not be directly associated with entrepreneurial intention.

In South Africa, there are both private and public tertiary institutions. It was important to understand if tertiary environments influenced the entrepreneurial intentions of students. Literature from Canever, Barral, and Riberio (2017) explored the links between private and public university environments and the entrepreneurial intention of students, and found that public and private university environments present no significant differences in the way they influence entrepreneurial intention.

Literature showed a link between an individuals' social network and their entrepreneurial intention. According to Farooq, Salam, Rehman, Fayolle, Jaafar, and Ayupp (2018), social networks positively influence the entrepreneurial intention of business graduate students, and the relationship was fully mediated by attitudes towards entrepreneurship, subjective norms and perceived behavioural control. The study highlighted that developing social networks would have a positive impact on entrepreneurial intention.

Further analysis of literature highlighted constructs reflecting different levels of entrepreneurial intention. Quan (2012) developed two new constructs that reflect different levels of entrepreneurial intention, which precedes venture creation. The first level is impulsive entrepreneurial intention and the second level is deliberate entrepreneurial intention. The study examined how experience and social networks contribute to these two levels of entrepreneurial intention. The findings show that personal characteristics and cultural background contribute to impulsive entrepreneurial intention, which reflect an individual's willingness to pursue a new venture. While for deliberate entrepreneurial intention, different types of prior experience and active involvement in social networks were more important to potential entrepreneurs,

helping them identify and source various resources needed for subsequent entrepreneurial behaviour. The study offers unique insights into the constructs of entrepreneurial intention and shows how prior experience contributed to deliberate entrepreneurial intention.

As this study captured the age of participants, it was crucial to understand whether age played a role in an individual's opportunity recognition process. Literature has shown there to be a relationship between age, job identification, and intentions. Hatak, Harms, and Fink (2015) aimed to examine how age and job identification affects entrepreneurial intention of employees. The study found that as employees age they are less inclined to act entrepreneurially, and that entrepreneurial intention is reduced the more they identify with their job, whereas gender, education, and previous entrepreneurial experience are relevant to intention. The study highlighted that practical experience is a contributing factor to an individual's intention to start a new venture; however, as people get older and become more experienced in their career, they are less likely to pursue an entrepreneurial venture. This highlights the effects of age on an individual's entrepreneurial intention.

Hatak et al. (2015) offered support for the notion that age, coupled with the number of years of work experience, is an important aspect to consider in an individual's intention to pursue an entrepreneurial venture.

As this study looked at both males and females, it was essential to examine literature on the role gender played as a determinant in entrepreneurial intention. A study by Yukongdi and Lopa (2017) examined whether the intention to become an entrepreneur differs between men and women. The study collected data using a questionnaire-based survey of 393 students at international education institutions in Thailand. The study found that job autonomy and job security are significant predictors for women, while significant predictors for men were achievement and risk-taking.

Other literature by Haus, Steinmetz, Isidor, and Kabst (2013) examined the relationship between gender and entrepreneurial intention, and found that men have higher entrepreneurial intention when compared with women. The study

utilised motivational constructs, which include attitude toward starting a business, subjective norms, and perceived behavioural control. The gender differences in entrepreneurial intention and the motivational constructs are small, and could not sufficiently explain the substantial differences in actually starting a business. Furthermore, the study found differences between students and non-students' gender / entrepreneurial intention relationship.

The studies by Yukongdi and Lopa (2017), and Haus et al. (2013) highlighted that gender is a factor to consider when understanding the entrepreneurial intention process between males and females. The studies highlight the different predictors for males and females when considering entrepreneurship and that males have higher levels of entrepreneurial intention when compared with women.

2.5.1 Hypothesis 2

Hypothesis 2 was formulated as follows:

H2: There is a positive relationship between work experience and entrepreneurial intention.

2.6 Conceptual Framework

The conceptual framework depicted in Figure 1 was developed to indicate that work experience as a variable of human capital, impacted on opportunity recognition and entrepreneurial intention.

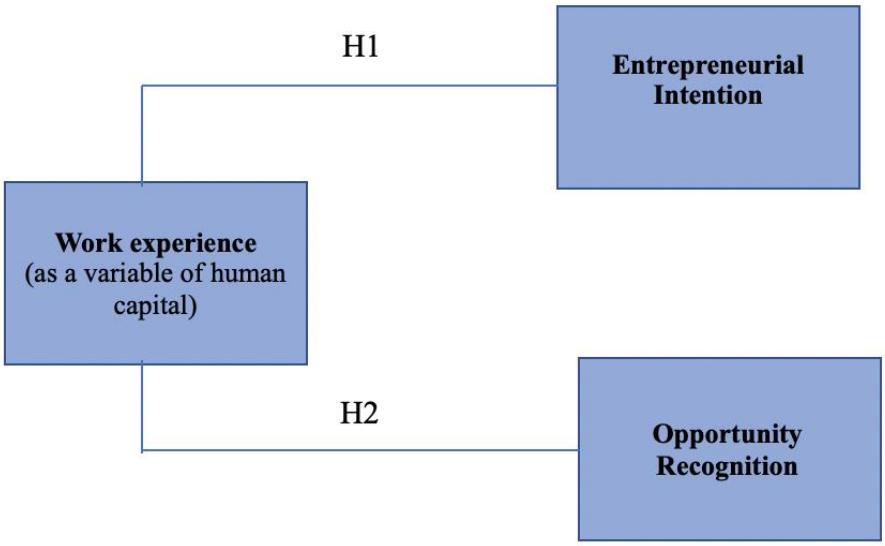

Figure 1: Conceptual framework

2.7 Conclusion

In this chapter, the definitions of the topics, which included human capital, entrepreneurial intention, and opportunity identification are discussed. Previous literature focusing on human capital variables and entrepreneurial orientation was reviewed and its relation to the topic of this research study highlighted. Based on these reviews, hypotheses were formulated and, in the course of this study, tested to determine if they could be accepted or rejected. Finally, a conceptual framework was developed to illustrate the relationship between work experience, opportunity recognition, and entrepreneurial intention.

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the methodological approaches taken in the research process are discussed. This chapter covers the following methodological concepts, research paradigm, research design, population and sampling, research instrument, procedure for data collection, analyses and interpretation of the data, and lastly, the validity and reliability of the research instrument.

3.2 Research paradigm

Understanding the research paradigm is key to understanding how the particular phenomenon being investigated is to be studied (Du Plooy-Cilliers, Davis & Bezuidenhout, 2014; Mackenzie & Knipe, 2006). The three key paradigms identified in the field of research are positivism, interpretivism, and critical realism (Du Plooy-Cilliers et al*.,* 2014). This study utilised a positivist paradigm, as the study applied quantitative techniques.

The advantage a positivist paradigm aided in developing an approach to follow when conducting the study by utilising information based on observable and measurable facts (Muijs, 2010). The approach to a positivist paradigm assumed that reality can be observed by collecting objective facts about it, and that valid knowledge can only be gained from objective observable (empirical) evidence. (Blumberg, Cooper, & Schindler, 2014; Du Plooy-Cilliers et al*.,* 2014; Sale, Lohfeld, & Brazil, 2002). The approach also required that instrumental reasoning be utilised for a better understanding of the social dynamic being examined (Schraq, 1992). In order to achieve this, the study utilised a research instrument (see section 3.6). Given that the study aimed to examine the relationship between work experience and entrepreneurial intention, as well as work experience and opportunity recognition, utilising empirical methods, the positivist paradigm was best suited to achieve this.

3.3 Research design

The method that this study utilised was an experimental, cross-sectional study through a survey research methodology. The survey consisted of a physical and online self-administered questionnaire. According to Blumberg et al. (2014), surveys are useful methods in quantitative studies to gather primary data. Some advantages included cost saving (as the survey was administered electronically), sample accessibility (utilising emails to contact participants who might otherwise have been inaccessible), response time (there was no fixed time limit associated with survey), and anonymity (survey did not require respondents to provide any personal information) (Blumberg et al., 2014).

When utilising the questionnaire, it was ensured that all the data collected was done in a professional and ethical manner by informing the participant of the study, obtaining their informed consent, and ensuring that the questions were presented in a format that was easy to understand and could be easily read.

Furthermore, the participants were not obliged to partake in the study and were assured that their information would be kept confidential and anonymous.

3.4 Population

The population reflects a group of individuals who share at least one common characteristic from whom information is required (Umar & Madugu, 2015). The identified population for this study were postgraduate students at tertiary institutions who were available to complete the research instrument. They comprised postgraduate students, some from the Wits Business School where the researcher had access to postgraduate students through social networks; other postgraduate students were obtained through the social networks of the researcher's friends and colleagues.

The parameters of the population were as follows; first, they had to be students, second, they must have been students at a postgraduate level, and third, the

unique characteristic was that they must have had some form of work experience.

3.5 Sample and Sampling Method

3.5.1 Sampling method

There are two types of sampling techniques in quantitative research, non-probability and probability (Kothari, 2004; Maree, 2016). The research study applied convenience sampling as the non-probability sampling method. Utilising this sampling technique allowed for the use of the researcher's social network to gain access to a variety of postgraduate students from different tertiary institutions. The technique also provided the freedom to utilise the social networks of colleagues and fellow postgraduate students to gain further access to members of the target population.

The advantage of this sampling technique was that it was an inexpensive technique and increased the rate at which sampling could be done (Maree, 2016). This was important given the limited time frame in which to survey the sample.

According to Farrokhi and Mahmoudi-Hamidabad (2012), when utilising convenience sampling, researchers need to be vigilant of outliers in the data as they can adversely affect sample statistics and decrease the precision of estimates about population. During the data analysis, tests for outliers in the data were performed to improve the reliability and validity of the data. This in turn ensured that the sample was more representative of the population.

3.5.2 Sampling frame

The sampling frame consisted of postgraduate students that were registered at South African tertiary institutions in 2018 (Universities of South Africa, 2018). As part of the sampling selection criteria, students were required to be in the process of completing a postgraduate qualification (NQF 7+) and to have some form of work experience to be included in the survey. Section 1 of the

questionnaire (Appendix A) addressed this to ensure that only students who meet the requirements completed the survey.

3.5.3 Sample size

As the study was quantitative in nature, there were specific requirements for the sample size required to perform certain statistical tests (Galawe, 2017), factor analysis and linear regression. According to Field (2013), the rule of thumb that pertains to an adequate sample size supports a large sample.

Literature differed in determining the optimal size for both factor and multiple regression analyses (Field, 2013; Galawe 2017).. One particular school of thought was to determine the sample size according to participant/variable ratio; according to Field (2013) 10 to 15 observations per variable would be suitable.

Based on the literature from Field (2013), a 15:1 ratio was chosen for this study and a sample of 300 participants was targeted for the study. During the course of data capturing, the researcher noted that achieving 300 responses was unrealistic due to time constraints and other commitments. Upon consultation with the supervisor a sample larger than 100 was recommended for statistical purposes; responses were collected until the 100 responses threshold was met. According to the 15:1 ratio, the sample size still met the minimum sample size requirement of 45 cases.

3.6 The Research Instrument

A closed-ended/matrix questionnaire was used to survey a sample from the target population. According to Krosnick (2018), a closed-ended questionnaire comprises a fixed number of answers, from which the respondents have to select one (yes or no). According to Du Plooy-Cilliers et al. (2014) a matrix questionnaire comprises scaled questions (Likert scale) where the respondents are asked to select the option that best reflects their attitude, or opinion, for each question. The research instrument contained a cover letter (Appendix B) explaining the research study in a little more detail to potential participants. A

consent form (Appendix C), which assured respondents of anonymity was included and had to be signed by each respondent.

The research instrument utilised statements from previous research studies, which improved reliability and ensured accurate measurement. The research instrument was divided into five sections:

- The first section dealt with exclusion-based statements that were developed to ensure that the participants were within the population parameters.

- The second section focused on demographical information, where participants had to select statements that described their age, race, and gender.

- The third section had statements that pertained to work experience, and were sourced from a previous study by Ntuli (2017). The statements pertained to the participants previous work experience in different functional areas of a business, which included marketing, finance, production, operation, technology, and legal. A final statement was added that asked participants about their sales experience. Sales is a key functional area in a business, often associated with marketing (Ntuli, 2017), but in order to reduce confusion, it was added as a separate functional area. The participants had to indicate the number of years of experience they had in each area using a seven-point Likert scale with one being no experience and sever being in excess of nine years' experience.

- The fourth section had statements that pertained to opportunity recognition, and were sourced from a previous study by Kuckertz, Kollmann, Krell, and Stöckmann (2017). The statements pertained to the participants' opportunity recognition process. For example, the first statement stated, "I am always alert to business opportunities" and the third statement stated, "I search systematically for business opportunities". The participants had to indicate how accurately these

statements described themselves using a seven-point Likert scale, with one being very strongly agree and seven being very strongly disagree.

- The fifth section had statements that pertained to entrepreneurial intention (DV2), sourced from a previous study by Liñán and Chen (2009). The statements pertained to the participants' entrepreneurial intentions. For example, the first statement stated, "I am ready to do anything to become an entrepreneur", and the fourth statement stated, "I am determined to create my own business". The participants had to indicate how accurately the statements described themselves using a seven-point Likert scale, with one being very strongly agree and seven being very strongly disagree.

3.7 Procedure for Data Collection

The study was a cross-sectional study that utilised online software (Qualtrics) to design, distribute, and capture the data. Data was collected using a survey questionnaire over a period of five months from October 2018 to February 2019. In addition to Qualtrics, the survey was physically distributed to willing participants to increase the sample size, as the response rate using Qualtrics was low.

The potential participants, willing to partake in the study, were approached, given a brief overview of the study, and informed that the study was fully explained in the cover letter attached to the front of every survey. The participant was given the opportunity to read the cover letter and consent form before agreeing to partake in the study. Written approval was obtained from the participants before completion of the survey. Once the survey was completed, it was numbered and stored for data analysis.

When distributing the survey electronically using Qualtrics, a link to the survey was provided to potential participants via email and the WhatsApp messaging platform. The study was explained in the communication and consent was indicated by the respondents participation in the survey. Once the participant

completed the survey, the data was captured and stored in Qualtrics for data analysis.

Surveys were distributed until the threshold of 100 response was reached. This ensured enough responses for statistical purposes, and an adequate sample size according to the 15:1 ratio.

3.8 Data Analysis

Statistical software, IBM-SPSS version 25 (SPSS) was used to perform the multivariate statistical analysis. The program operation is part of the master's degree at the Wits Business School and does not require a specific set of skills to operate; in addition, the outputs are easy to understand and interpret (Galawe, 2017).

The data was captured into an excel spreadsheet, where it was cleaned (screened for errors) to ensure that the data was sound for analysis, thereafter imported into SPSS where the data was coded to assist with statistical analysis. These analyses included descriptive analysis, frequency analysis, exploratory factor analysis, reliability and validity testing, and finally linear regression.

In order to test the hypotheses, linear regression was utilised to determine the type and strength of the relationship between the independent variable (work experience) and the two dependent variables (opportunity recognition and entrepreneurial intention). In order to conduct a linear regression, it was crucial to screen the data for violation of any of the regression assumptions, otherwise the results could have become misleading (Field, 2013; Galawe, 2017). The data was therefore tested for the following assumptions:

(1) *Linearity*: The relationship between the independent and dependent variables need to be linear. The correlation between the variables are examined using Pearson's correlation; any reading above or below 1.00 would indicate linearity (Field, 2013).

(2) *Outliers*: Outliers need to be identified as this type of analysis is sensitive to outliers (Field, 2013).

(3) *Normality*: The variables have to be examined to determine if they are normally distributed. This is done by assessing the skewness and kurtosis of the data. The Z value for both Skewness and kurtosis has to fall in the range between -1.96 and 1.96 (Galawe, 2017).

(4) *Multicollinearity*: Occurs when there is a high correlation among the independent variables. This is checked by examining Pearson Bivariate correlation among the independent variable and ensuring that the coefficient is less than one(Field, 2013).

(5) *Autocorrelation*: Occurs when the residuals are not independent from each other. This was checked by examining the Durbin-Watson test. Values around two indicate no auto correlation, and a range of $1.5 < d < 2.5$ is acceptable (Field, 2013).

(6) *Homoscedasticity*: The residuals should be equal across the correlation lines, which is checked by examining the scatter plot (Field, 2013).

3.9 Validity of Research Design

Since the research study utilised a questionnaire with multi-item scales to measure the different constructs, it was critical to test for construct, scale, and instrument validity and reliability. These tests ensure that the study is correctly and consistently measuring what it aimed to measure. The aim of testing for reliability and validity is to minimise measurement error (Galawe, 2017).

3.9.1 External validity

External validity focused on ensuring that the research findings from the study could be generalised to the larger population (Blumberg et al., 2014; Du Plooy-Cilliers et al., 2014). The aim was to confidently show that if the same research method and design was applied to the rest of the population, or in different

studies, it would show the same results. External validity was ensured through the research instrument that collected data exclusively from a sample of post-graduate students at tertiary institutions. In doing this, the results could be generalised to a larger postgraduate student population.

3.9.2 Internal validity

Internal validity focused on determining whether the research method or design would answer the research study's proposed questions (Blumberg et al*.,* 2014; Du Plooy-Cilliers et al., *2014*). It was ensured that the research instrument consistently measured what it was designed to measure as the same instrument was applied to all members of the sample group.

The respondents were asked to answer the questionnaire honestly, and to the best of their ability. Although participants were conveniently picked, there were analyses conducted to ensure convergent validity.

3.10 Reliability of Research Design

Reliability refers to the instruments' ability to be used at different times, or administered to different respondents from the same population, and still obtain similar results (Maree, 2016). In this regard, the focus was on instrument reliability and internal consistency (Galawe, 2017; Heale & Twycross, 2015).

3.10.1 Instrument reliability

Since the research study utilised a questionnaire as the research instrument, instrument reliability was essential to be proven (Galawe, 2017). Aspects like poor wording and weak question structure could have compromised the reliability of the measurement instrument (Galawe, 2017). In order to ensure the instrument's reliability, the questionnaire was formulated using scales that were tested in previous studies. Due diligence was ensured while developing the instrument and during the data collection process in order to minimise errors and unreliability. A pilot study examined the reliability of the instrument and

issues that arose were addressed and corrected to improve the instrument reliability.

3.10.2 Internal consistency

This focuses on the reliability of multi-item scales and is used to evaluate the consistency of the results across various items within a study (Galawe, 2017). There are different tools and methods to assess internal consistency, with Cronbach's alpha being the most popular (Heale & Twycross, 2015). Cronbach's Alpha was used through the SPSS platform to measure the internal reliability of the instrument.

When utilising Cronbach's alpha, the average of all the correlations in every combination of split-halves is determined (Heale & Twycross, 2015). If the items are strongly correlated with each other, their internal consistency is high, and the alpha coefficient will be nearer to one (Maree, 2016). If the items are poorly formulated and do not correlate strongly, the coefficient alpha will be nearer to zero (Maree, 2016). A Cronbach alpha of 0.7 indicated approximately 70 per cent true ability and 30 per cent error, with regard to variability (Galawe, 2017). This study retained all scales that generated a Cronbach alpha of 0.6 and higher, as this is an acceptable reliability score (Galawe, 2017; Heale & Twycross, 2015; Maree, 2016).

3.11 Ethics

In order to ensure that the study was ethically sound, it was ensured that the participants did not suffer any physical harm, discomfort, pain, embarrassment, or loss of privacy. Blumberg et al. (2014) proposed the following a set of guidelines to ensure that participants' rights were safeguarded. The guidelines stipulated that the benefits of the study are explained, the participants' rights and protection are clarified, and informed consent is obtained.

To ensure ethical conduct in this study, these guidelines were followed by developing a cover letter (Appendix B) that was attached to each survey, which explained why the study was being conducted, how respondents' participation

was valued, and ensured they were aware of their rights with regards to participation. Informed consent (Appendix C) was obtained from each participant. Finally, approval was obtained from the Wits Faculty of Commerce, Law, and Management's Ethics Committee. The committee's approval letter is attached in Appendix D.

3.12 Conclusion

This chapter focused on the research methodology covering research philosophy and paradigms. The study was a quantitative study that adopted a positivist paradigm. The sample consisted of postgraduate students in South Africa that were willing to partake in the study. A sample size of 117 was achieved with 101 usable responses. Data was collected using a self-administered/online questionnaire.

The chapter discussed the data analysis, and validity and reliably of the research design. Data was screened and cleaned to ensure that it was sound, after which SPSS was used to perform the statistical analyses. Regression and exploratory factor analyses were conducted; problematic items in the scales were identified and removed from any further analyses. The validity and reliability of the measurement scales were shown to be reliable and sound.

Finally, ethical considerations were detailed, including the university ethical clearance, and the consent forms signed by the participants.

CHAPTER 4. PRESENTATION AND INTERPRETATION OF RESULTS

4.1 Introduction

The aim of this chapter is to present and interpret the results from the study's analysis. The chapter begins with presentation of the sample characteristics of the respondents (postgraduate students). This is followed by the exploratory factor analysis, the reliability and validity of measurement scales, correlation results, hypothesis testing, and lastly, the linear regression analysis.

4.2 Sample Characteristics

The respondent's characteristics included confirmation that they were postgraduate students with work experience, along with their gender, race, and age, which are discussed in this section.

Approximately 350 questionnaires were distributed, and 117 responses received, which was a response rate of 33 per cent. A total of 101 responses were viable, with 16 responses being excluded, six because of the exclusion-based questions in section one of the questionnaire, the other 10 were excluded due to missing data in the questionnaires, and were excluded from any further analysis.

4.2.1 Work experience

Table 2 shows that all the respondents whose responses were used in the analysis indicated that they had work experience.

Table 2: Work experience

Work experience		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	101	100.0	100.0	100.0

4.2.2 *Postgraduate student*

Table 3 shows that all the respondents whose responses were used in the analysis indicated that they were currently post graduate students.

Table 3: Current postgraduate student

Postgrad student		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	101	100.0	100.0	100.0

4.2.3 *Gender*

Figure 2 shows that more males (58 or 57.4 per cent) than females (43 or 42.6 per cent) were sampled overall.

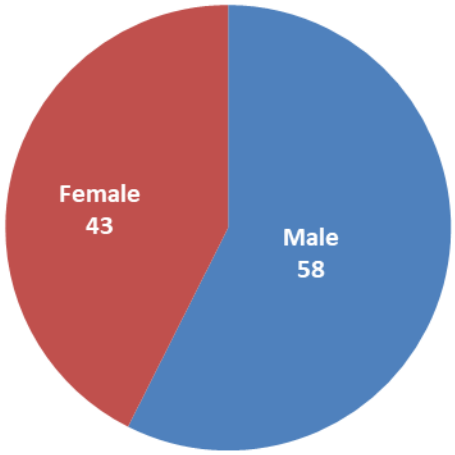

Figure 2: Gender

4.2.4 *Race*

Table 4 shows that the majority of the respondents were black (76.2 per cent) followed by whites (15.8 per cent), Indian (6.9 per cent), and coloureds (one per cent).

Table 4: Race

Race groups		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Black	77	76.2	76.2	76.2
	White	16	15.8	15.8	92.1
	Indian	7	6.9	6.9	99.0
	Coloured	1	1.0	1.0	100.0
	Total	101	100.0	100.0	

4.2.5 Age

Table 5 shows that most of the respondents (45.5 per cent) were in the 26 tp 35 year age group, followed by the 36 to 45 year age group (25.7 per cent), 18 to 25 year age group (22.8 per cent), 46 to 55 year age group (five per cent), and the 55 to 65 year age group (one per cent).

Table 5: Age

Age groups		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	23	22.8	22.8	22.8
	26-35	46	45.5	45.5	68.3
	36-45	26	25.7	25.7	94.1
	46-55	5	5.0	5.0	99.0
	55-65	1	1.0	1.0	100.0
	Total	101	100.0	100.0	

4.3 Exploratory Factor Analysis

Using SPSS, an exploratory factor analysis (EFA) was conducted for all the scales to tests that the individual items were measuring the factors they purported to measure. The EFA was also utilised to test the convergence and divergence of different items and factors, to determine the relationship between factors and their observed variables.

Principle axis factoring was used as the extraction method, with resulting Kaiser's criterion and scree plot. Promax was used as the rotation method to optimise the factor structure, which is classified as an oblique method. The oblique rotation was used because the factors were hypothesised to be interrelated. The pattern matrix was utilised for interpretative purposes because it provides on the unique contribution of a variable to a factor and is easy to interpret (Galawe, 2017).

Work experience (WE) was measured with six items and was represented by factor 3, opportunity recognition (OR) was measured with five items and was represented by factor 2, and entrepreneurial intention (EI) was measured with six items and was represented by factor 1. EFA was first performed using the scree plot and the greater than one eigenvalue rule, and five factors were extracted. Items WE3, WE4, WE5, and WE6 loaded to factor 3. Items OR1, OR2, OR3, OR4, and OR5 loaded to factor 2. Items EI1, EI2, EI3, EI4, EI5, and EI6 loaded to factor 1. Items WE1, WE7, loaded to factor 4. Item WE2 loaded to factor 5. After removing items WE1, WE2, and WE7, the remaining items loaded into three factors with no cross loadings.

Table 6 shows the Kaiser-Meyer-Olkin measure of sampling adequacy was greater than 0.6 (KMO = 0.853; $p < 0.05$), which indicated that the sample size and the set of variables were adequate for factor analysis. The Bartlett's test of sphericity was conducted to test that the correlation matrix is an identity matrix and is suitable for factor analysis (Galawe, 2017). Based on the Bartlett's test results of Chi-Square = 905,458, DF = 91, and $p < 0.05$, the correlation between the items is large enough and significant for factor analysis.

Table 6: KMO and Bartlett's tests

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.853
Bartlett's Test of Sphericity	Approx. Chi-Square	905.458
	df	91
	Sig.	.000

Figure 3 shows that three factors with an Eigen value of greater than one were extracted.

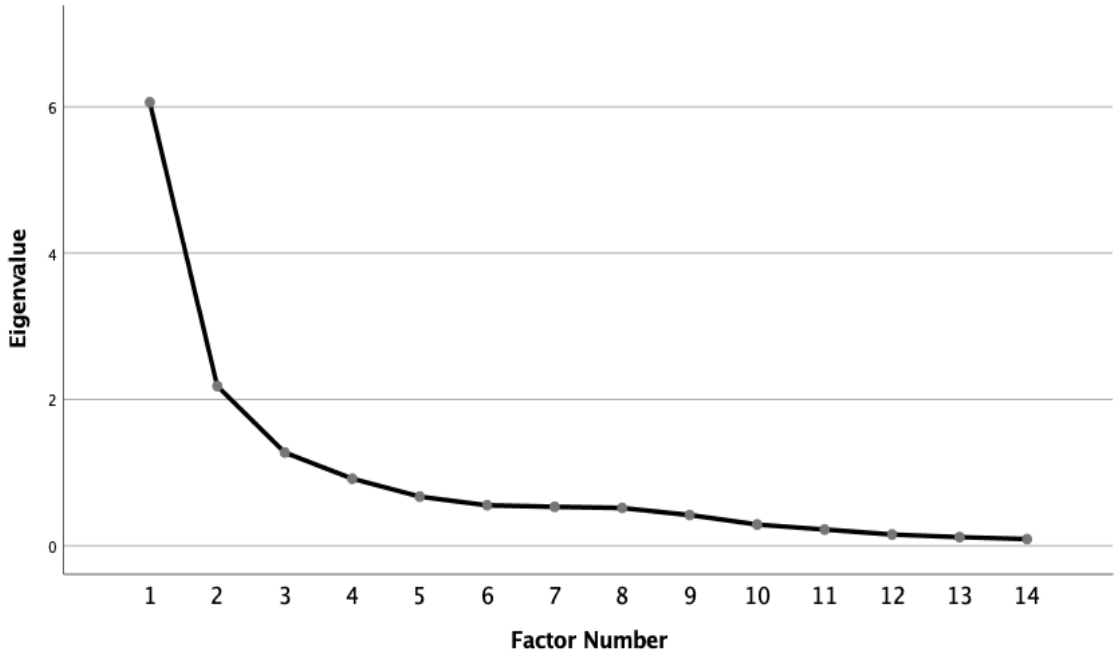

Figure 3: Scree plot

Table 7 demonstrates that there were three factor loadings, with all variables corresponding to a factor ($\lambda > 0.5$).

Table 7: Pattern matrix

Variables	Factor		
	1	2	3
WE3			.537
WE4			.600
WE5			.656
WE6			.573
OR1		.571	
OR2		.872	
OR3		.794	
OR4		.648	
OR5		.486	

Variables	Factor		
	1	2	3
EI1	.809		
EI2	.812		
EI3	.978		
EI4	.882		
EI5	.805		
EI6	.809		

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization. a. Rotation converged in 5 iterations.

The results in Table 8 show that the three factors extracted explained 59 per cent of the total variance. EFA gives a suitable result within the acceptable levels (total cumulative variance > 50 per cent).

Table 8: Total variance explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6.062	43.296	43.296	5.781	41.294	41.294	5.486
2	2.183	15.592	58.888	1.596	11.397	52.691	4.054
3	1.274	9.100	67.988	.884	6.312	59.003	1.524
4	.917	6.550	74.538				
5	.672	4.800	79.338				
6	.553	3.949	83.287				
7	.532	3.800	87.087				
8	.516	3.688	90.775				
9	.419	2.996	93.771				
10	.289	2.068	95.839				
11	.222	1.582	97.421				

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
12	.153	1.093	98.514				
13	.118	.842	99.356				
14	.090	.644	100.000				

Extraction Method: Principal Axis Factoring.
a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

4.4 Reliability of Measurement Scale Results

The questionnaire in the survey utilised multi-item scales to collect data and was therefore necessary to test for reliability. The test selected to measure reliability on the data was Cronbach's Alpha, through SPSS.

Table 9 summarises the overall results from the scale reliability tests of all the constructs, indicating the number of items measuring each construct, the Cronbach Alpha per construct, the number of items that if deleted that would improve the scale reliability, and the first Cronbach alpha generated before deleting problematic items from a construct.

Three constructs were measured using Cronbach Alpha, and the results show that reliability for two scales were excellent (0.840) and (0.944), with the reliability for the third scale acceptable (0.680) (Field, 2013).

Table 9: Reliability statistics summary

Scale	# of items	Cronbach's Alpha	Result	Inter-item correlation	Item total statistic
Work Experience (WE)	4	0.653	Acceptable	Variability in the inter-item correlation with co-efficients falling in the range of ($r \leq$ -0.215 to 0.463)	No removal of any item would increase α from 0.653

Scale	# of items	Cronbach's Alpha	Result	Inter-item correlation	Item total statistic
Opportunity Recognition (OR)	5	0.840	Good	All inter-item correlations were positive with co-efficients falling in the range ($r \leq 0.379$ to 0.668)	No removal of any items would increase α from 0.840
Entrepreneurial Intention (EI)	6	0.944	Excellent	All inter-item correlations were positive with co-efficients falling in the range ($r \leq 0.593$ to 0.870)	Only the removal of EI1 would increase α marginally from 0.944 to 0.948

Corrected item-total correlation refers to the correlation between each item and the total score. Individual item correlations should not be less than 0.3 (Galawe, 2017). In order to improve reliability, items that produced a significant or sudden drop in the item to total correlation were eliminated. To further improve reliability, Cronbach's alpha if item is deleted was examined, to identify and remove items that would improve the reliability of the construct. The reliability results of each construct are discussed, beginning with work experience, followed by opportunity recognition, and finally entrepreneurial intention.

4.4.1 Work experience

Items WE3, WE4, WE5, and WE6 measured the reliability scale for the construct work experience. The results showed that the scale was acceptable with the seven items achieving a total Cronbach alpha of 0.653.

Table 10 shows the item total statistics for work experience. The results showed that none of the items, if deleted, would increase Cronbach's Alpha.

Table 10: Item total statistics (work experience)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
WE3	6.18	13.668	.452	.219	.575
WE4	5.10	10.630	.465	.239	.578
WE5	6.09	11.742	.468	.286	.562
WE6	6.75	16.768	.454	.252	.616

All inter item correlations were assessed and Table 11 provides the results for work experience. All inter-item correlations were greater than 0.3, except for WE6. Item WE6 was retained because if deleted it would reduce Cronbach's alpha (0.616), and increase corrected total-item correlation to above 0.3 (0.454).

Table 11: Inter-item correlation matrix (work experience)

Item	WE3	WE4	WE5	WE6
WE3	1.000	.409	.345	.215
WE4	.409	1.000	.320	.333
WE5	.345	.320	1.000	.463
WE6	.215	.333	.463	1.000

4.4.2 Opportunity recognition

Items OR1 through to OR5 measured the reliability scale for the construct opportunity recognition. Table 12 shows that the opportunity recognition scale was good with a total Cronbach alpha of 0.840 with all five items. None of the items, if removed, would improve the overall reliability, and all the corrected inter-item correlations were greater than 0.3. Therefore, all items were retained. The scale was accepted as reliable and consistent.

Table 12: Item-total statistics (opportunity recognition)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
OR1	12.05	17.088	.610	.408	.817
OR2	11.65	15.589	.719	.546	.786
OR3	11.21	15.846	.661	.503	.804
OR4	11.95	16.528	.657	.456	.804
OR5	11.95	18.448	.583	.398	.825

The inter-item correlations were assessed, and Table 13 shows the results for opportunity recognition. All inter-item correlations were greater than 0.3, indicating that the items correlate with scale.

Table 13: Inter-item correlation matrix (opportunity recognition)

Item	OR1	OR2	OR3	OR4	OR5
OR1	1.000	.535	.467	.435	.538
OR2	.535	1.000	.668	.568	.456
OR3	.467	.668	1.000	.559	.379
OR4	.435	.568	.559	1.000	.542
OR5	.538	.456	.379	.524	1.000

4.4.3 Entrepreneurial intention

Items EI1 through to EI6 measured the reliability scale for the construct entrepreneurial intention. Table 14 shows that the entrepreneurial intention scale was excellent, with a total Cronbach's alpha of 0.944 for all six items. None of the items, if removed, would improve the overall reliability, and all the total corrected inter-item correlations were greater than 0.3. Therefore, all items were retained. The scale was accepted as reliable and consistent.

Table 14: Item-total statistics (entrepreneurial intention)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
EI1	11.67	43.922	.709	.564	.948
EI2	12.01	40.970	.839	.722	.932
EI3	12.25	40.428	.899	.841	.924
EI4	12.63	43.294	.878	.827	.928
EI5	12.59	43.444	.846	.787	.932
EI6	12.21	42.786	.825	.734	.934

The inter-item correlations were assessed, and Table 15 shows the results for entrepreneurial intention. All inter-item correlations were greater than 0.3, indicating that the items correlated with the scale.

Table 15: Inter-Item correlation matrix (entrepreneurial intention)

Item	EI1	EI2	EI3	EI4	EI5	EI6
EI1	1.000	.687	.730	.623	.586	.593
EI2	.687	1.000	.812	.760	.718	.751
EI3	.730	.812	1.000	.870	.802	.743
EI4	.623	.760	.870	1.000	.846	.784

4.5 Correlation Results

The correlation analysis was conducted to test the strength, size, direction, and significance of the relationship between the independent variable (work experience) and the two dependent variables (opportunity recognition and entrepreneurial intention).

Table 16 shows the correlation results of work experience and opportunity recognition. The results showed that work experience negatively correlated with opportunity recognition ($r = -0.115$); therefore, it was concluded that work experience had a weak negative relationship with opportunity recognition.

Table 16: Correlation between work experience and opportunity recognition

Test		OR	WE
Pearson Correlation	OR	1.000	-.115
	WE	-.115	1.000
Sig. (1-tailed)	OR	.	.126
	WE	.126	.
N	OR	101	101
	WE	101	101

Table 17 shows the correlation results of work experience and entrepreneurial intention. The results showed that work experience negatively correlated with entrepreneurial intention (r = -0.015); therefore, it was concluded that there was a very weak negative relationship between work experience and entrepreneurial intention.

Table 17: Correlation between work experience and entrepreneurial intention

Test		EI	WE
Pearson Correlation	EI	1.000	-.015
	WE	-.015	1.000
Sig. (1-tailed)	EI	.	.440
	WE	.440	.
N	EI	101	101
	WE	101	101

4.6 Regression Assumptions

Linear regression was the core statistical technique utilised to test the study's hypotheses (see section 4.7). This process started by testing the assumptions of linear regression and ensured that the assumptions were not violated. There

were six assumptions of simple linear regression that were examined. The following describes the six assumptions and their testing:

(1) *Linearity*: The relationship between the independent and dependent variables needs to be linear. The correlation between the variables are examined using Pearson's correlation. Any reading above or below 1.00 indicates linearity (Field, 2013). The results from Tables 16 and 17 show a negative correlation between the independent variable (work experience) and the two dependent variables (opportunity recognition and entrepreneurial intention).

(2) *Outliers*: Outliers need to be identified as this type of analysis is sensitive to outliers (Field, 2013). By examining the box and whisker plots in Figures 4, 5, and 6, it was determined that there were no observations denoted and therefore concluded that there were no outliers.

(3) *Normality*: The variables were examined to determine if they were normally distributed. By assessing the skewness and kurtosis of the data, the Z-value for both skewness and kurtosis has to fall within the range of -1.96 and 1.96 (Galawe, 2017). Tables 18 and 19 show that data was normally distributed.

(4) *Multicollinearity*: Occurs when there is a high correlation among the independent variables. This is checked by examining Pearson Bivariate correlation among the independent variables to ensure that the coefficient is less than one (Field, 2013). There was only one independent variable, so there could not have been multicollinearity.

(5) *Autocorrelation*: Occurs when the residuals are not independent from each other. This is checked by examining the Durbin-Watson test. Values around two indicate no auto correlation, with a range of $1.5 < d < 2.5$ being acceptable (Field, 2013). The results in Tables 20 and 23 showed that there was little autocorrelation.

(6) *Homoscedasticity*: The residuals should be equal across the correlation lines (Field, 2013). This was checked by examining the scatter plots in

Figures 7 and 8, which show that the residuals were equal across the line of best fit, which indicated that the data was homoscedastic.

Table 18 shows the results for the test of normality for work experience and opportunity recognition. Due to a small sample size (n=101), to test for normality, the skewness and kurtosis of the data, as opposed to the Shapiro-Wilk, was examined, as the latter is very sensitive to sample size (Galawe, 2017). To determine if the data was normally distributed, the z-value for the skewness and kurtosis had to be as close to zero as possible with an acceptable range of -1.96 and 1.96. In order to calculate the z-value, the measure of both skewness and kurtosis were divided by their standard errors. The results were as follows, skewness z-value = 0.673 (0.297/0.441) and the kurtosis z-value = 0.160 (0.138/0.858). From these results, it was concluded that that the data was a little skewed and kurtotic for work experience and opportunity recognition, but did not differ significantly; therefore, it was determined that the data was normally distributed in terms of skewness and kurtosis.

Table 18: Test of normality (work experience and opportunity recognition)

Work Experience				Statistic	Std. Error
Opportunity Recognition	1	Mean		3.05	.207
		95% Confidence Interval for Mean	Lower Bound	2.62	
			Upper Bound	3.48	
		5% Trimmed Mean		3.02	
		Median		3.10	
		Variance		1.205	
		Std. Deviation		1.098	
		Minimum		1	
		Maximum		6	
		Range		5	
		Interquartile Range		1	
		Skewness		.297	.441
		Kurtosis		.138	.858
		Mean		2.77	.262

Table 19 shows the results for the test of normality between work experience and entrepreneurial intention. Due to a small sample size (n=101), to test for normality, the skewness and kurtosis of the data, as opposed to the Shapiro-Wilk, was examined, as the latter is very sensitive to sample size (Galawe, 2017). To determine if the data was normally distributed, the z value for the skewness and kurtosis had to be as close to zero as possible with and acceptable range of -1.96 and 1.96. To calculate the Z-value, the measure of both skewness and kurtosis was divided by their standard errors. The results were as follows, skewness z-value = 1.757 (0.775/0.441) and the kurtosis z-value = -0.249 (-0.214/0.858). From these results, it was concluded that that the data was a little skewed and kurtotic for work experience and entrepreneurial intention, but it did not differ significantly; therefore, it was determined that the data was normally distributed in terms of skewness and kurtosis.

Table 19: Test of normality (work experience and entrepreneurial intention)

Work Experience				Statistic	Std. Error
Entrepreneurial Intention	1	Mean		2.42	.205
		95% Confidence Interval for Mean	Lower Bound	2.00	
			Upper Bound	2.84	
		5% Trimmed Mean		2.36	
		Median		2.09	
		Variance		1.171	
		Std. Deviation		1.082	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		2	
		Skewness		.775	.441
		Kurtosis		-.214	.858

Figure 4 shows the box and whisker plot for work experience. There were no observations denoted; therefore, it was concluded that there were no outliers.

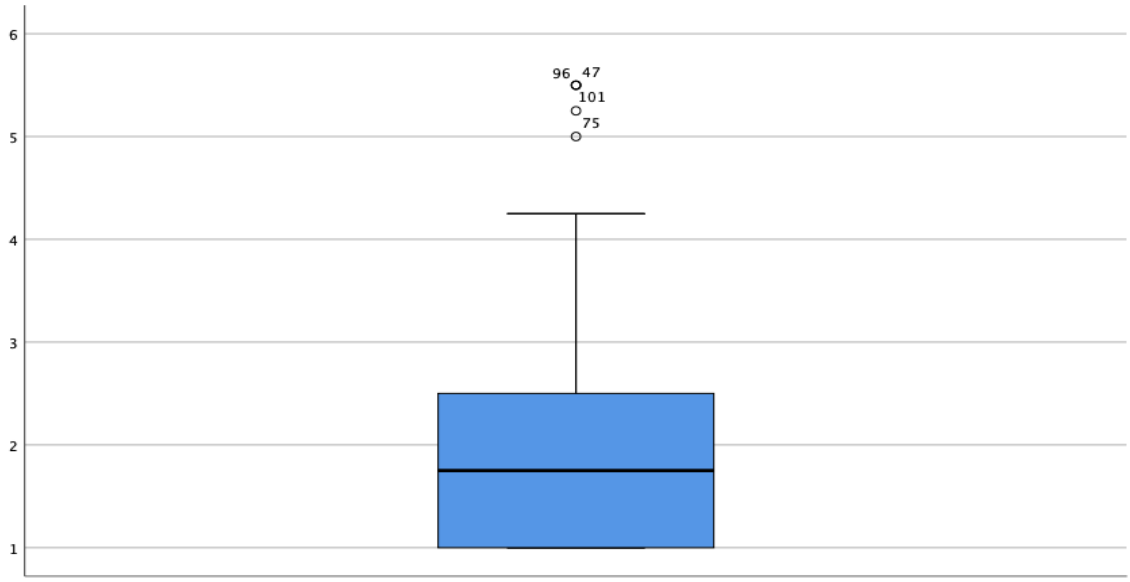

Figure 4: Box and whisker plot for work experience

Figure 5 shows the box and whisker plot for opportunity recognition. There were no observations denoted; therefore, it was concluded that there were no outliers.

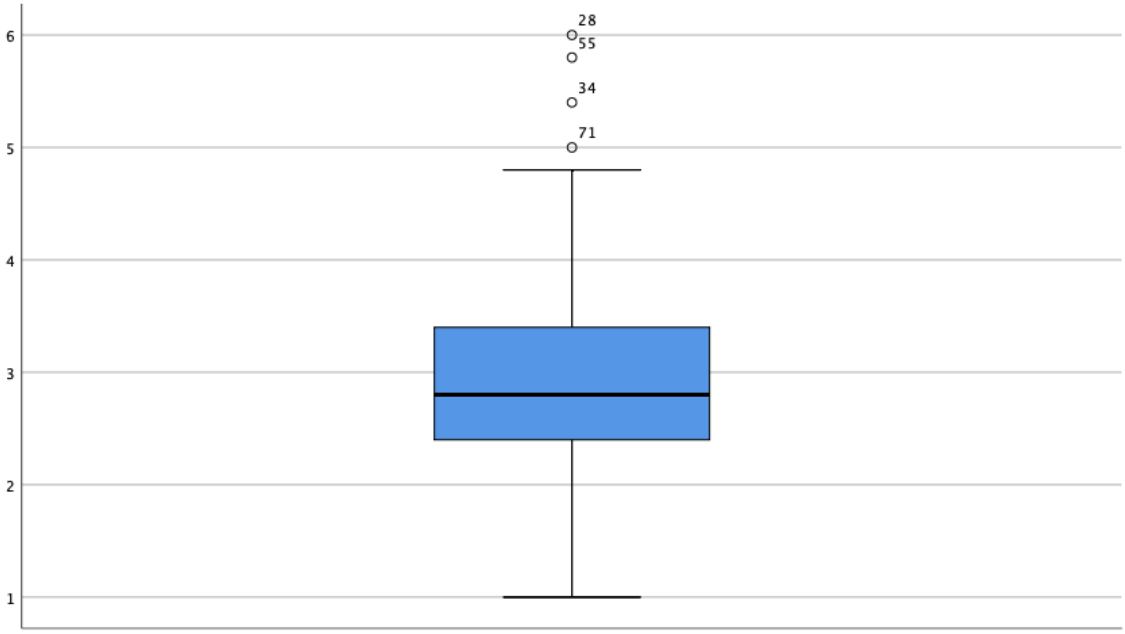

Figure 5: Box and whisker plot for opportunity recognition

Figure 6 shows the box and whisker plot for entrepreneurial intention. There were no observations denoted; therefore, it was concluded that there were no outliers.

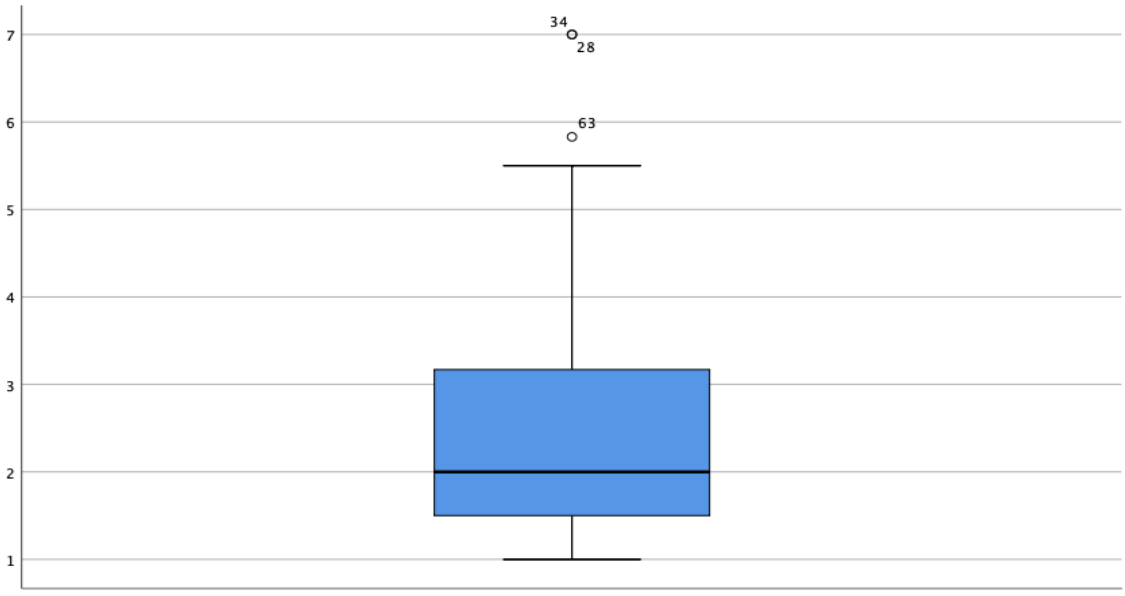

Figure 6: Box and whisker plot for entrepreneurial intention

Figure 7 shows the scatterplot results for entrepreneurial intention. The results show that residuals ran evenly across the line of best fit; therefore, it was concluded that the data was homoscedastic.

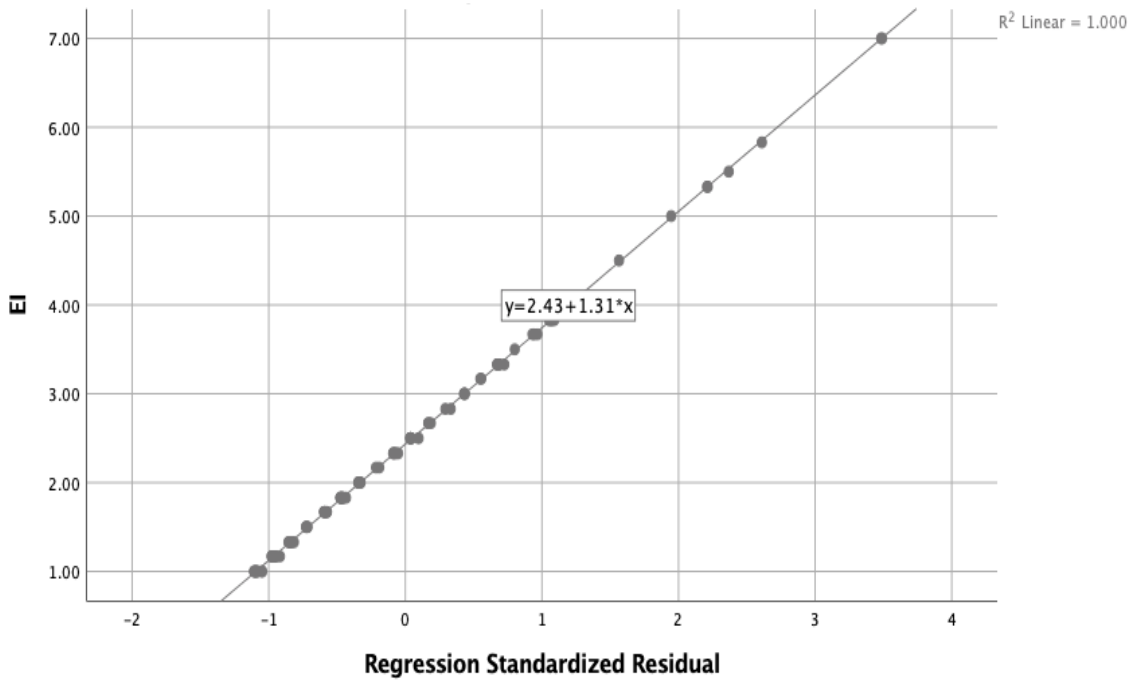

Figure 7: Scatter plot of entrepreneurial intention

Figure 8 shows the scatterplot results for opportunity recognition. The results show that the residuals ran evenly across the line of best fit; therefore, it was concluded that the data was homoscedastic.

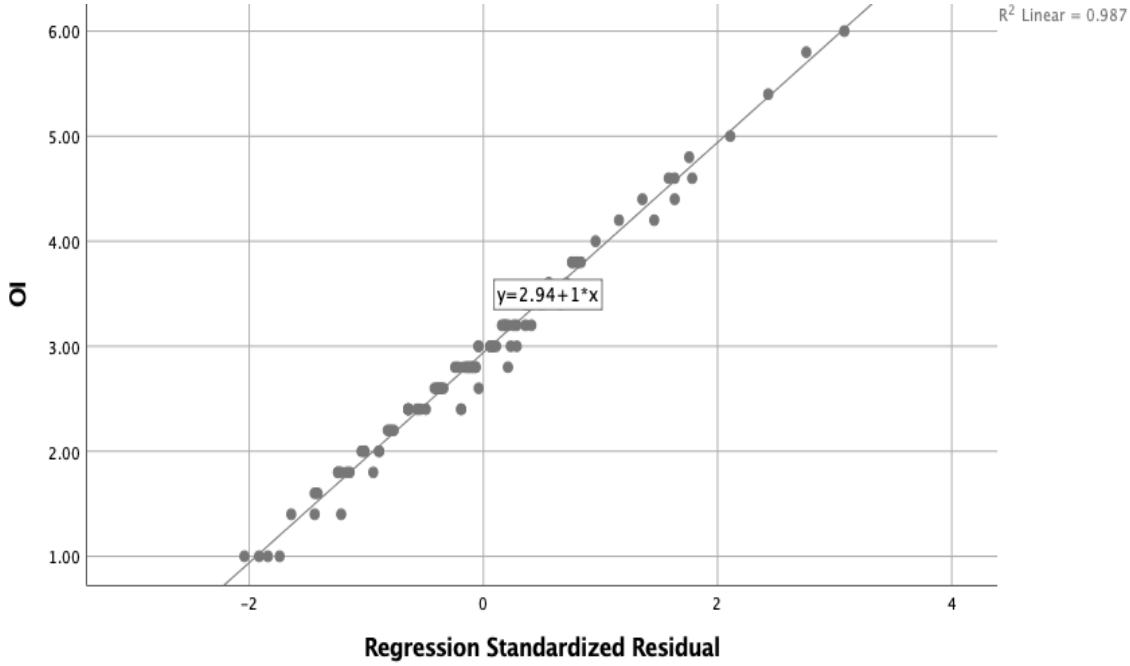

Figure 8: Scatter plot of opportunity recognition

4.7 Hypothesis Testing

The regression analysis was conducted to test the relationship between the independent variable (work experience) on the two dependent variables (opportunity recognition and entrepreneurial intention). The aim to was to assess the influence of the independent variable on the dependent variables, as per the formulated hypotheses.

4.7.1 Hypothesis 1

The first hypothesis tested was:

H1: There is a strong positive relationship between work experience and opportunity recognition.

The objective was to determine if the hypothesis could be accepted or rejected based on the results from the data analysis. Table 20 provides the model summary for work experience and opportunity recognition. The Durbin-Watson ($d = 1.991$) indicated little autocorrelation in the data as it was in the acceptable range ($1.5 < d < 2.5$). The R square = 0.013, taken as a set, indicated that the

predictor work experience accounted for 1.3 per cent of the variance in opportunity recognition.

Table 20: Model summary for work experience and opportunity recognition

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.115[a]	.013	.003	1.000	1.991

a. Predictors: (Constant), WE

Table 21 shows the ANOVA for work experience and opportunity recognition. The results show that the overall regression model was insignificant, F (1,99) = 1.32, $p > 0.05$, R squared = 0.013.

Table 21: ANOVA for work experience and opportunity recognition

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.323	1	1.323	1.323	.253[b]
	Residual	99.040	99	1.000		
	Total	100.364	100			

b. Predictors: (Constant), WE

Table 22 shows the coefficients for work experience and opportunity recognition, where work experience was not significant (p = 0.253). Based on these results, it was concluded that work experience (predictor variable) did not account for much of the unique variance in opportunity recognition (the dependent variable) as $p > 0.05$.

Table 22: Coefficients for work experience and opportunity recognition

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.142	.202		15.587	.000
	WE	-.100	.087	-.115	-1.150	.253

The correlation analysis in Table 16 shows a weak negative correlation between work experience and opportunity recognition (r = -0.115). The model

summary of the regression analysis in Table 20 shows that the work experience accounted for only 1.3 per cent of the variance in opportunity recognition, which was further supported by the coefficient analysis in Table 22, which showed that work experience did not account for much of the unique variance in opportunity recognition. The ANOVA data in Table 21 showed that the overall regression model was not significant, $F(1, 99) = 1.32$, $p > 0.05$, R squared = 0.013, with further support that work experience could not account for a significant amount of the variance in opportunity recognition.

The overall results from the regression analysis led to the conclusion that a strong positive relationship between work experience and opportunity recognition did not exist. Therefore, Hypothesis 1 was rejected based on the quantitative data.

4.7.2 Hypothesis 2

The second hypothesis tested was:

H2: There is a strong positive relationship between work experience and entrepreneurial intention.

Table 23 shows the model summary of work experience and entrepreneurial intention. The Durbin-Watson ($d = 1.943$) indicated little autocorrelation in the data as it was in the acceptable range ($1.5 < d < 2.5$). The R square = 0.00, taken as a set, indicated that the predictor work experience accounted for zero per cent of the variance in entrepreneurial intention.

Table 23: Model summary of work experience and entrepreneurial intention

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.015[a]	.000	-.010	1.310	1.943

a. Predictors: (Constant), WE

Table 24 shows the ANOVA for work experience and entrepreneurial intention. The results show that the overall regression model was insignificant, $F(1, 99) = 0.32$, $p > 0.05$, R squared = 0.00.

Table 24: ANOVA for work experience and entrepreneurial intention

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.040	1	.040	.023	.879[b]
	Residual	169.815	99	1.715		
	Total	169.855	100			

b. Predictors: (Constant), WE

Table 25 shows the coefficients of work experience and entrepreneurial intention, where work experience was not significant (p = 0.879). Based on these results, it was concluded that work experience (predictor variable) did not account for much of the unique variance in entrepreneurial intention (the dependent variable) as $p > 0.05$.

Table 25: Coefficients of work experience and entrepreneurial intention

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.469	.264		9.352	.000
	WE	-.017	.114	-.015	-.152	.879

a. Dependent Variable: EI

The correlation analysis in Table 17 showed that there was very weak negative correlation between work experience and entrepreneurial intention (r = -0.015). The model summary of the regression analysis in Table 23 showed that the work experience accounted for zero per cent of the variance in entrepreneurial intention, which was further supported by the coefficient analysis in Table 25, which showed that work experience did not account for any of the unique variance in opportunity recognition. The ANOVA data in Table 24 showed that the overall regression model was not significant, $F(1, 99) = 1.32$, $p > 0.05$, R squared = 0.013, which further supported that work experience did not account for much of the variance in entrepreneurial intention.

The overall results from the regression analysis led to the conclusion that a strong positive relationship between work experience and entrepreneurial

intention did not exist. Therefore, Hypothesis 2 was rejected based on the quantitative data.

4.8 Conclusion

The study started with an initial sample of 117, but after data cleaning, the remaining sample of n = 101 were characterised by 57.4 per cent males and 42.6 per cent females. The sample consisted of 76.2 per cent blacks, 15.8 per cent whites, 6.9 per cent Indian, and 1 per cent coloured. The sample further revealed that all respondents were current post graduate students and had work experience.

After conducting an exploratory factor analysis, a measurement model of three factors, one predictor and two outcome variables was produced. The EFA results confirmed that variables converged to their respective factors and were divergent with unrelated factors. After the reliability of the constructs and scales were tested using Cronbach Alpha test, all three constructs achieved a Cronbach Alpha greater than 0.6. Three items (W01, W03, and W07) were removed from any further analysis; the factors that remained were deemed reliable and consistent. The EFA results showed convergent validity as all the inter-items correlations were above 0.3, with individual factor loadings ranging from 0.5 to 0.8.

Regression testing was performed to test the hypotheses and determine what type of relationship existed between the variables. When examining the first hypothesis, the correlation analysis showed that work experience had a weak negative relationship with opportunity recognition (r = -0.115). It was therefore concluded that Hypothesis 1 be rejected When examining the second hypothesis, the correlation analysis showed that work experience had a very weak negative relationship with entrepreneurial intention (r = 0.015). It was therefore concluded that Hypothesis 2 be rejected

CHAPTER 5. DISCUSSION OF THE RESULTS

5.1 Introduction

The study examined the relationship that existed between work experience and opportunity recognition, as well as work experience and entrepreneurial intention. Proceeding from the results presentation in Chapter 4, this chapter discusses the findings from the study in relation to the literature reviewed in Chapter 2, starting with the profile of the respondents, and proceeding to the findings related to the hypotheses.

5.2 Profile of the Respondents

The sample characteristics were presented in Chapter 4, and showed that all 101 respondents, at the time of data collection, were post graduate students, with work experience.

The respondents were mostly male (57.4 per cent) and black (76.2 per cent) compared to females, whites, Indians and other races in the sample. Previous findings in other studies showed that men and women use different processes when identifying opportunities; however, both genders utilise their unique composition of human capital to identify opportunities (DeTienne & Chandler, 2007). This study was consistent with previous findings as it showed both men and women to have the propensity to identify entrepreneurial opportunities, even though in this study it was not deduced that their work experience was a contributing factor to this process.

An aspect that would have been interesting to note, in relation to previous studies, was whether men had higher entrepreneurial intention when compared with women. Zhang et al*,* (2014) noted in their findings that men had higher levels of entrepreneurial intention because of their entrepreneurial education. Based on this study's findings, the same determination could not be drawn with regard to work experience and entrepreneurial intention.

The majority of the respondents were between the ages of 26 and 35 years (45.5 per cent), followed by those from 36 to 45 years (25.7 per cent), 18 to 25 years (22.8 per cent), 46 to 55 years (five per cent), and 55 to 65 years (one per cent). The findings showed that the majority of the respondents sampled were postgraduate students between the ages of 26 and 35 years of age.

5.3 Discussion of the Findings

The study had three variables that were utilised to formulate two hypotheses based on previous literature sourced. The results of the findings are discussed according to each hypothesis.

5.3.2 Hypothesis 1

H1: There is a positive relationship between work experience and opportunity recognition.

The hypothesis stated that there was an association between work experience and opportunity recognition. The key was determining the strength and direction of the relationship between work experience and opportunity recognition.

According to the findings of this study, the relationship was non-significant and the hypothesis rejected. The non-significant finding might be attributed to the scale items used to test for work experience. The findings from the regression analysis highlighted that work experience could only account for 1.3 per cent of the variance in opportunity recognition. The findings also showed that work experience negatively correlated with opportunity recognition ($r = -0.115$), which indicated that work experience had a negative relationship with opportunity recognition.

The findings differ from those of previous studies discussed in Chapter 2. Literature from Fatoki (2014) and Ucbasaran et al. (2008) showed that the human capital variable, in particular work experience, had a positive relationship with opportunity recognition. This study found the opposite to be true, which was attributed to the fact that according to the quantitative data,

work experience as a construct developed in this study, along with the scale used to measure the construct, could not accurately account for the variance in the construct opportunity recognition.

Literature from Ucbasaran et al. (2008) examined the correlation between human capital variables and opportunity identification found that entrepreneurial individuals with higher levels of work experience, business ownership experience, entrepreneurial capability, and managerial capability are meaningfully associated with increased probability for identifying more opportunities. In contrast, the findings from this study showed that work experience was negatively associated with opportunity recognition and as a result the findings differ from those of Ucbasaran et al. (2008).

Mueller and Shepard (2016) highlighted that with the proper cognitive tools, individuals can benefit from their business failures, with the main benefit being an enhanced approach to identifying business opportunities. Although this study did not set out determine if any of the respondents had gained experience from attempting to pursue their own venture, the study did show that the experience gained from working in a formal business environment did not support the findings by Mueller and Shepherd (2016). This study demonstrated that respondents' work experience was not positively related to their ability to identify business opportunities.

DeTienne and Chandler (2007) explored if gender played a role in an individual's ability to identify entrepreneurial opportunities. They found that there was a difference between males and females in the process identifying opportunities, but that there was no difference in terms of the innovativeness of the opportunity identified. The respondent profile of this study comprised mostly of males (57.4 per cent), which indicated that prior work experience did not positively impact on males' opportunity recognition processes.

The study by Zaefarian et al. (2016) investigated the role of social and business networks, and prior knowledge (experience) in the international opportunity identification of family firms. The study by Zaefarian et al. (2016), found that there was a positive relationship between a family's entrepreneurial prior

knowledge and their international opportunity identification process. Although this study focused on postgraduate students and looked at their entrepreneurial opportunity identification process, the study by Zaefarian et al. (2016) was utilised to highlight the relationship between prior knowledge gained through experience and how it related to opportunity recognition. This study found that work experience gained through formal work did not relate to the opportunity identification process of postgraduate students.

In addition, Hajizádeh and Zali (2016) showed that prior knowledge in the form of experience had a significant impact on opportunity recognition. This is not supported by the findings of this study, which found a negative non-significant relationship between work experience and opportunity identification.

Literature from Gonzalez and Husted (2011) showed that entrepreneurs who had prior practical experience were better suited at identifying opportunities, when compared with entrepreneurs without prior practical experience. This study found that the same conclusion could not be drawn on students with prior work experience; the students felt it did not positively affect their opportunity identification process.

Wang et al. (2013) investigated whether prior knowledge (experience) had a positive relationship with entrepreneurial opportunity identification. The findings from this study differ with the findings from those of Wang et al. (2013); the prior work experience of students was not positively associated with opportunity recognition.

5.3.1 Hypothesis 2

H2: There is a positive relationship between work experience and entrepreneurial intention.

The hypothesis stated that there was an association between work experience and entrepreneurial intention. The key was determining the strength and direction of the relationship between work experience and entrepreneurial intention.

According to the findings of this study, the relationship was non-significant and the hypothesis rejected. The non-significant finding was attributed to the scale items used to test for work experience. The findings from the regression analysis highlighted that work experience accounted for zero per cent of the variance in opportunity recognition. The findings also showed that work experience negatively correlated with opportunity recognition ($r = -0.015$), which indicated that work experience had a negative relationship with opportunity recognition.

The finding differs from those of previous studies discussed in Chapter 2. Literature from Zhang et al. (2015) examined the entrepreneurial intention of students as a function of attitude, social norm, and controlled behaviour. No support for entrepreneurial intention as a function of attitude was found, which was attributed to a lack of entrepreneurial experience among students. The findings from this study did not substantiate that line of reasoning. Instead, the findings indicated that postgraduate students work experience was not associated with their intention to pursue entrepreneurial ventures.

The study by Fatoki (2014) investigated whether there was a significant difference in the entrepreneurial intention of students who have previous work experience compared to those without any previous work experience. The study showed that students with previous work experience have a higher level of entrepreneurial intention when compared to students without previous work experience. This study did not offer any support for the finding made by Fatoki (2014); results showed that postgraduate students' work experience did not have a direct positive relation to their level of entrepreneurial intention.

Basu and Virick (2008) assessed entrepreneurial intentions among 123 students at the San Jose University in America, and found that students with prior experience in entrepreneurship have increased positive attitudes towards entrepreneurship. Although this study had a similar sample size to the study by Basu and Virick (2008) it could not support their findings. This study utilised a scale that focused on measuring work experience in functional areas of

business, and not entrepreneurial experience. This is addressed and discussed in the recommendation section of Chapter 6.

Hatak et al. (2015) examined how age and job identification affect entrepreneurial intention, and found that that as employees age they were less inclined to act entrepreneurially, and that their entrepreneurial intention was reduced as employees identified more with their job. The findings of this study showed that most of the respondents were between the ages of 26 and 35 years. The study by Hatak et al. (2015) offered a possible explanation to the findings in this study in that postgraduate students who were working identified more with their job and as a result were less inclined to pursue their entrepreneurial intentions.

The study by Fietze and Boyd (2017), which investigated the entrepreneurial intention among Danish students by applying the theory of planned behaviour, found that students preferred a career as employees, which showed low entrepreneurial intention. This study showed similar findings to that of Hatak et al. (2018), and offered further support in that the respondents who were currently working or had work experience, were more inclined to stay with their jobs as opposed to pursuing their entrepreneurial intentions.

Literature from Canever et al. (2017), which investigated the link between private and public university environments and the entrepreneurial intention of students, found that public and private university environments present no differences in the way they influence entrepreneurial intentions of students. In this study, Canever et al. (2017) provided guidance towards sampling; postgraduate students from both private and public institutions were sampled. This study highlighted that postgraduate students from both types of universities felt that work experience made no positive contribution to their entrepreneurial intentions.

5.4 Conclusion

In this chapter, the study findings were related back to the literature sourced in Chapter 2. The chapter started by discussing profile of the respondents, which was followed by the discussion of the results of the regression analyses that was conducted to test the study's hypotheses.

In consolidating the results for both hypotheses, and upon further reflection of the results, the scale utilised to measure work experience might have been inadequate. The EFA analysis showed that three items had to be removed from the scale as those items were cross loading, which indicated that those items did not measure what was intended. The results from the reliability analysis showed that the scales reliability was the weakest when compared to the reliability of the other scales. This forms part of the recommendations in Chapter 6.

The results showed a negative relationship between work experience and opportunity recognition, as well as between work experience and entrepreneurial intention.. A conclusion to the study is presented in Chapter 6.

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

The findings of the study were used to provide a conclusion to the study, which answered the research question defined in Chapter 1. The implications and recommendations provided specific implications for both academics and researchers. The limitations of the study are discussed in detail and recommendations offer future researchers a solution to these limitations, as well as provide ideas on how to expand on this study.

6.2 Conclusion of the Study

The study's findings showed evidence that contradicted the findings of literature that explained the relationships of work experience with opportunity recognition and work experience with entrepreneurial intention. Previous literature provided support for positive relationships; however, this study showed that negative relationships existed between these constructs. Although the results were based on empirical evidence, further investigation is required to validate these findings. The scale used to test for the construct work experience could be improved or a new scale could developed to measure this construct in relation to entrepreneurship. This determination was deduced based of the reliability and EFA results. The reliability results showed that although the scale for work experience met the standard for reliability, it was the least reliable when compared to the scales used to measure opportunity recognition and entrepreneurial intention. The EFA results showed that three items had to be removed from the scale used to measure work experience due to cross loading, which indicated that the items did not accurately capture what they intended to capture. Based on these results, if the study were to be expanded upon, a different scale would need to be developed to measure work experience; this could render different results if the study was conducted on a sample from the same population.

The objective of the study was to examine the relationships of work experience with opportunity recognition, and work experience with entrepreneurial intention among postgraduate students in South Africa. The study met its objective by providing quantitative data that show negative relationships between these constructs, which indicated that postgraduate students' work experience did not positively affect their opportunity recognition process or their intention to pursue entrepreneurial ventures

This study contributes by offering findings that differ from similar literature on the topic. The study adds to the body of knowledge on work experience as a variable of human capital and offers insight on how work experience among the youth affects their ability to identity entrepreneurial opportunities and their willingness to pursue them.

6.3 Implications and Recommendations

This study provides practical considerations that could benefit various stakeholders, namely practitioners and researchers.

6.2.1 Practical implications for practitioners

Practitioners include the youth, in particular South African youth that have a desire to pursue entrepreneurial ventures. Previous literature has shown how education as a variable of human capital is a key construct in relation to individuals who are looking identify and pursue entrepreneurial ventures. This study shows that work experience is not a key construct among postgraduate students in relation to their ability to identify entrepreneurial opportunities and their willingness to pursue those opportunities.

6.2.3 Practical implications for researchers

For researchers, this study has shown that work experience is not a key construct in developing an individual's ability to identify entrepreneurial opportunities or their willingness to pursue those intentions. Instead, the literature review has highlighted that other variables of human capital, such as

education, offered better support in developing students' ability to identify entrepreneurial opportunities and promoting their willingness to pursue them.

One key aspect noted from literature, which future researchers should focus on, is examining the entrepreneurial forms of work experience as opposed to experience gained in the formal sector (Basu & Virick, 2008).

6.4 Limitations of the Study

Although this study offered theoretical and practical contributions to academic literature, it has limitations as mentioned in previous sections.

(1) The sample n = 101 was smaller than what was targeted n = 300. Although the sample met the minimum requirements according to the 15:1 rule, this might pose a challenge when generalising to postgraduate students across South Africa.

(2) The use of quantitative analysis did not allow for in-depth information from the respondents, which could have been done if qualitative methods were included in the study.

(3) The scale for work experience could have been better adapted for the purposes of this study. An alternative scale could have yielded different results.

(4) The study was cross-sectional, and interpretation of the findings cannot insinuate causality with an acceptable level of confidence.

6.5 Suggestions for Further Research

The findings from this research will aid future researchers in exploring work experience as a variable of human capital. It would be interesting and beneficial if future research could consider the following:

(1) The sample of 101 respondents was acceptable for statistical purposes, but a sample of 300 would have been more adequate. It would be beneficial to repeat the study with a larger sample size of 300 or more.

(2) A different scale for work experience could improve how the construct is captured and measured, which in turn might offer future researchers a different result if the study is replicated, or offer further support to the findings of this study as well as previous literature on the topic.

(3) Future researchers could utilise a qualitative method to get more in-depth information from the respondents.

(4) Other variables of human capital could also be examined to tests the relationship between a number of human capital variables with opportunity recognition and entrepreneurial intention.

(5) The study was a cross-sectional study; however, researchers could consider doing a longitudinal study over three or more years to capture more information on the constructs in this study.

(6) The study focused on postgraduate students, the study could be broadened to include undergraduate students, thus expanding on the findings from this study.

(7) Future researchers could look at different populations to examine the relationship that exists between the constructs, which could offer different insights or confirm this study's findings.

6.6 Conclusion

The findings highlighted that work experience was not a key construct in relation to students' ability to identify entrepreneurial opportunities and their intention to act on those opportunities. The scale utilised to measure work experience was of concern, and indicated that an alternative scale could generate different results if the study is replicated. The practical implications for

practitioners and researchers were discussed, which was followed by the limitations of the study. Finally, suggestions were made that could improve this study if replicated and possible directions for future research were offered.

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APPENDIX A: RESEARCH INSTRUMENT

Section 1. Exclusion Questions			
The following statements pertain to the individual and require that they answer yes to the following questions in order to proceed with the rest of the questionnaire. Please indicate by **circling** the response most applicable to you			
EQ1	I am currently a postgraduate student	Yes	No
EQ2	I have prior work experience	Yes	No

Section 2. Demographic questions						
The following statements pertain to individual characteristics Participants must indicate their response by **circling** the statement most applicable to you						
DEMO1	Gender:	Male		Female		
DEMO2	Race:	Black	White	Indian	Coloured	Other
DEMO3	Age:	18-25	26-35	46-55	56-65	66+

Section 3. Work experience (IV1)
The following statements ask about participants' industry-specific experience with regard to the following functional areas: For each statement, the participants have to indicate how well it describes them. Please indicate your response to each of the statements based on the following response scale:
Response scale: 1= no experience 2= between 1-2 years 3= between 3-4 years 4= between 4-5 years 5= between 6-7 years 6= between 7-8 years 7= 9 years +

WE1	Marketing	
WE2	Finance	
WE3	Production	
WE4	Operations	
WE5	Technology (IT)	
WE6	Legal	
WE7	Sales	

Section 4. Opportunity Recognition		
The following questions pertain to the participants' opportunity recognition process. For each statement, the participant has to indicate how it describes them. Please indicate your agreement with each of the statements based on the following response scale:		
Response Scale: 1= very strongly agree 2= strongly agree 3= agree 4= neutral 5= disagree 6= strongly disagree 7= very strongly disagree		
OR1	I am always alert to business opportunities	
OR2	I research potential markets to identify business opportunities	
OR3	I search systematically for business opportunities	
OR4	I look for information about new ideas on products and services	
OR5	I regularly scan the environment for business opportunities	

Section 5. Entrepreneurial Intention		
The following statements pertain to participants entrepreneurial intention. For each statement the participant has to indicate how well the intention describes them. Please indicate your agreement with each of the statements based on the following response scale:		
Response Scale: 1= very strongly agree 2= strongly agree 3= agree 4= neutral 5= disagree 6= strongly disagree 7= very strongly disagree		
EI1	I am ready to do anything to become an entrepreneur	
EI2	My professional goal is to become an entrepreneur	
EI3	I will make every effort to start and run my own business	
EI4	I am determined to create a business in the future	
EI5	I have very seriously thought of starting a business	
EI6	I have the firm intention of starting a firm	

APPENDIX B: COVER LETTER

Dear Participant,

I am Roderick Volkersz (student number: 683712). I am currently enrolled for a Master of Management in Entrepreneurship and New Venture Creation at the Wits Business School in Parktown. In fulfilling the requirements of my degree, I am conducting this research in an effort to successfully complete the master's degree.

I am conducting a quantitative study that examines the influence of work experience on entrepreneurial intentions and opportunity identification: A focus on postgraduate students in South Africa.

I am requesting a few moments of your time to read through and complete the attached questionnaire to the best of your ability. Kindly note, that your participation is voluntary and should you wish to stop participating at any stage, you should feel free do so. In addition, the information you provide will remain confidential. By signing below, you acknowledge that you have read the information contained in the letter and understand what your participation will entail with regards to the study.

…….. ……
Name Signature

……
Date

If you would like to find out about the study's findings, please feel free contact me via email on volkerszr@gmail.com.

APPENDIX C: CONSENT FORM

I …….. hereby agree to give my consent to participate in research on the impact of work experience on entrepreneurial intentions and opportunity identification: A study of postgraduate students at a tertiary institution in Parktown (Wits Business School). I acknowledge that my participation is voluntary, and should I wish to stop participating at any point I will not be prejudiced. I further acknowledge that my participation will be confidential, and the information provided along with the results will be only be utilised for the researcher's thesis.

Signature…….. Date……...

APPENDIX D. ETHICAL CLEARANCE LETTER

UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

Private Bag 3 Wits, 2050
Fax: 0270865535224
Tel: 02711 7173582

Reference: Ms Jennifer Mgolodela
E-mail: jennifer.mgolodela@wits.ac.za

04 January 2019
Person No: 683712
PAG

Mr RA Volkersz
P.o. Box 66034
Broadway
2020
South Africa

Dear Mr Roderick Volkersz

Master of Management in Entrepreneurship and New Venture Creation: Approval of Title

We have pleasure in advising that your proposal entitled *The influence of work experience on entrepreneurial intentions and opportunity recognition: a focus on postgraduate students in South Africa* has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

Mrs Marike Bosman
Faculty Registrar
Faculty of Commerce, Law and Management

APPENDIX E: CONSISTENCY MATRIX

Influence of work experience on entrepreneurial intentions and opportunity recognition of postgraduate students in South Africa.						
Aims of research	**Literature review**	**Hypothesis**	**Variables**	**Source of data**	**Type of data**	**Analysis**
To determine if a positive relationship exist between a postgraduate's work experience and their entrepreneurial intention and opportunity recognition	Fatoki (2014) Wu and Wu (2008). Ucbasaran et al. (2008)	H1: There is a positive relationship between postgraduate students' work experience and their opportunity recognition	IV1: Postgraduate students Work Experience DV1: Opportunity recognition	Questionnaire Section 3: WE1-WE7 Section 4: OI1-OI5	Interval data	IBM-SPSS v.25 Through the use of descriptive statistics, correlations, linear regression, analysis of variance, reliability and validity
	Krueger and Carsrud (1993) DeTienne and Chandler (2007)	H2: There is a positive relationship between postgraduate students' work experience and their entrepreneurial intentions	IV1: Postgraduate students work experience DV2: Entrepreneurial Intention	Questionnaire Section 3: WE1-WE7 Section 5: EI1-EI6		