

**NELSON MANDELA**  
UNIVERSITY

**A NARRATIVE LITERATURE REVIEW OF INDIVIDUAL ENTREPRENEURIAL  
ORIENTATION RESEARCH CONDUCTED AMONGST STUDENTS AT HIGHER  
EDUCATIONAL INSTITUTIONS IN SOUTH AFRICA**

**BY**

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**DECLARATION:**

In accordance with Rule G5.6.3, I hereby declare that the above-mentioned treatise/dissertation/thesis is my own work and that I have not previously been submitted to another University or for another qualification.

  
.....  
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**ABSTRACT**

Despite the growth in the field of entrepreneurship orientation (EO), research on individual entrepreneurial orientation (IEO) in general is limited and considered unexplored, in particularly research conducted on the IEO amongst students in South Africa. As a result this study used a narrative literature review to investigate IEO amongst students at HEIs in South Africa. Incorporating evidence through descriptive and thematic data analysis on desk research conducted, this study demonstrates that IEO can be enhanced through entrepreneurial education offered by HEIs. This study has additionally demonstrated the need for additional research to ensure that South African students' body of knowledge about IEO keeps growing.

**KEYWORDS:** Entrepreneurial Orientation, Individual Entrepreneurial Orientation, Higher Educational Institution, Entrepreneurship.

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**CHAPTER 1****INTRODUCTION AND BACKGROUND TO THE STUDY****1.1 INTRODUCTION AND BACKGROUND TO THE STUDY**

South Africa has the highest percentage of unemployed people in the world, which at 32.7%, is greater than the 5.7% that the International Labour Organization (ILO) announced for the entire world in 2022 (Stats SA, 2022). The percentage includes 42.6% of people discouraged from looking for work and which form part of the expanded definition of unemployment. The rate of youth unemployment, including job seekers between the ages of 15 and 25, increased to 64 percent in the final quarter of 2022 (Stats SA, 2022). High unemployment and stagnant economic development continue to be major macroeconomic concerns for South Africa. Due to the nation's current economic crisis, neither the public nor private sectors have the resources to offer work to unemployed individuals (Pasara & Garidzirai 2020:1). This demonstrates that availability and demand in South Africa are out of balance, in relation to the number of vacant positions. Pasara and Garidzirai (2020:2) assert that the lack of literacy is the leading reason for South Africa's rising unemployment rate since people between the ages of 15 and 64 are ineligible for jobs requiring a specific degree of education, such as a Matric Certificate. On the other hand, a growing percentage of graduates in the nation lack jobs despite having university degrees and advanced certificate qualifications (Pasara & Garidzirai 2020:4). This calls for a solution to foster a supportive environment and methods to assist students in becoming independent after graduation.

One way to reduce the high unemployment rate in South Africa is engaging in entrepreneurship. According to Kumar, Paray and Diwedi (2021:78), entrepreneurship is crucial in emerging economies that are experiencing an economic crisis. Entrepreneurship creates job opportunities, and new job openings become available as businesses grow (Kumar *et al.* 2021:79). A range of interdisciplinary approaches are entwined with entrepreneurial intent are now part of the expanded and evolving discipline of entrepreneurship (Nooh 2022:181). Recently, entrepreneurship has drawn scholarly interest due to its ability to spur economic growth. Hassan, Anwar, Saleem, Islam and Hussain (2021:404) note that the reason for this specific interest in entrepreneurship is that it has the potential to enhance the lives of citizens entrepreneurship as the act of pursuing possibilities irrespective of the resources an

individual has in their possession to prosper economically and provide new value to the industry. Governments, businesses, job seekers, and educators all around the world are becoming increasingly interested in entrepreneurship as a potential answer for creating employment and economic growth.

The South African government is spending material resources in business ownership growth and development to promote job creation and improve the economy and find a solution to the country's economic difficulties (Awotunde & Van Der Westhuizen 2021:478). The South African government for example, amongst other initiatives, made a call to South African citizens to "Vuk'uzenzele". Vuk'uzenzele is a Xhosa proverb with the meaning "wake up and do it for yourself." By generating jobs for themselves and others, entrepreneurs are key players in the resuscitation of an economy (Mutlutürk & Mardikyan 2018:2). The development of measures that support an entrepreneurial culture has thus become an essential issue. The growing level of government support for entrepreneurship demonstrates how crucial these types of initiatives are for the development of the country. The results of entrepreneurship, which include the creation of jobs, are elements that promote such activities (Suartha, Wayan & Suprapti, 2016:46).

To encourage self-employment, higher education institutions (HEIs) have partnered to teach people entrepreneurial skills and expertise (Hassan *et al.* 2021:404). HEIs are essential to both an individual's general growth and the specific development of entrepreneurial goals since they cultivate already-existing talents and teach new ones through the study of entrepreneurship (Awotunde & Van Der Westhuizen 2021:480). Encouragement, guidance, and the environment of an institution of higher learning may significantly increase someone's skills and enthusiasm to launch their own business (Chienwattanasooka, Jermittiparsert & Jarintod 2019:200). Awotunde and Van Der Westhuizen (2021:482) however notes that despite prior efforts, young students who attend entrepreneurial programs are unable to use their expertise in practical situations due to a lack of previous experience. According to Chienwattanasooka *et al.* (2019:201), developing self-reliance and becoming an entrepreneur are not only dependent on one's educational background but also intricately link to and depend on that individual's intentions to start their own business. Therefore, developing a sense of independence and being an entrepreneur are dependent on an individual's objectives as well as their educational qualifications. Thus, Chienwattanasooka *et al.* (2019:202) annotates that entrepreneurship is

founded on both the discovery of business possibilities and the intentions of an individual. Entrepreneurial intention is a process based on the behaviour of an individual towards the initiation of their own business (Abdelwahed & Alshaikhmubarak 2023:6). Therefore, entrepreneurial behaviour determines the intentions of individuals towards starting a business innovatively (Abdelwahed & Alshaikhmubarak 2023:7).

The study of entrepreneurship is crucial for today's HEIs' students. Mutlutürk *et al.* (2018:4) assert that it makes sense that students who acquire the required attitudes and skills are more inclined to launch their own businesses. The development of a society that values entrepreneurship depends critically on education at all levels, and HEIs can be regarded as sources for potential entrepreneurs because the education provided by HEIs has a significant impact on students' job decisions (Chienwattanasooka *et al.* 2019:202).

## **1.2 PROBLEM STATEMENT**

Basardien, Friedrich and Dwarko (2016:68) established that there are no employment guarantees for students of HEIs due to the obstacles caused by low economic development in most African countries. This is happening in South Africa against a backdrop of slow economic development and growing higher education costs (Basardien *et al.* 2016:68). Therefore, entrepreneurship is essential for the growth of the nation as well as the invention of new goods and services.

Despite the growth in the field of entrepreneurship orientation (EO), research on individual entrepreneurial orientation (IEO) in general is limited and considered unexplored, in particularly research conducted on the IEO amongst students in South Africa.

## **1.3 PURPOSE OF STUDY**

The current study aims to conduct a narrative literature examination of past research conducted on students' individual entrepreneurial orientation at Higher Educational Institutions (HEIs) in South Africa to summarise the existing body of knowledge and identify avenues for future research. This study will look at the individual-level status, developments, and potential future

research gaps in the discipline of IEO. The authors of the IEO study, their findings, and the methodologies used in their research will all be explored in this study.

## **1.4 RESEARCH OBJECTIVES**

This section of the study presents primary, secondary, and methodological objectives of the research.

### **1.4.1 PRIMARY OBJECTIVE**

The main objective of the current study is to undertake a narrative literature review of previous research conducted on individual entrepreneurial orientation (IEO) research amongst students at Higher Educational Institutions (HEIs) in South Africa.

### **1.4.2 SECONDARY OBJECTIVES**

- SO<sup>1</sup>: To profile the business journal publications in terms of the year of publication, authors of these publications, title of the journal, journal name, institutions, and the regions where research was conducted on IEO amongst students.
- SO<sup>2</sup>: To profile business journal publications on IEO in terms of sample size used, research design and methodologies adopted.
- SO<sup>3</sup>: To identify and describe key topical clusters and main findings within current IEO research amongst students.
- SO<sup>4</sup>: To identify research gaps and avenues for future research within identified key topical clusters and main findings.

### **1.4.3 METHODOLOGICAL OBJECTIVES**

To fulfil the specified primary and secondary objectives, methodological objectives have been formulated as follows:

- MO<sup>1</sup>: To conduct a narrative literature review on the nature and importance of individual entrepreneurial orientation, as well as the development of the prior research in the field of IEO in general and amongst students at HEIs in particular.
- MO<sup>2</sup>: To undertake desk research to collect past research articles published on IEO amongst students at HEIs in South Africa and to conduct a narrative literature review to provides a comprehensive summary of existing literature on the topic.
- MO<sup>3</sup>: To conduct descriptive and a thematic analysis to analyse the publications making up the study's data set to achieve the objectives of the study.
- MO<sup>4</sup>: To provide conclusions and propose practical recommendations to researchers and entrepreneurship educators on research gaps to be addressed concerning IEO research amongst students at South African HEIs.

#### 1.4.4 RESEARCH QUESTIONS

- RQ<sup>1</sup>: In which year business journal publications have research on IEO amongst students been published, and who are the authors of these publications, from which institutions and regions where the studies were conducted?
- RQ<sup>2</sup>: What are the sample size used and which research designs and methodologies have been adopted in past research on IEO amongst students?
- RQ<sup>3</sup>: What are the key topical clusters and main findings within IEO amongst students?
- RQ<sup>4</sup>: What are the gaps and avenues identified for future research on IEO amongst students?

### 1.5 SCOPE OF STUDY

Past research on individual entrepreneurial orientation studies conducted amongst South African students at HEIs is the focus of this study. A narrative research analysis on this study will include research publications on IEO done to date not only in South Africa, but also globally. Due to the limited research undertaken on the study in the South African context, the study will also source and consult articles published in journals internationally to enhance understanding and broaden the knowledge, whilst, identifying gaps that might exist for future research purposes.

## **1.6 SIGNIFICANCE OF STUDY**

Koe (2016:1) posits that to develop students' individual entrepreneurial abilities and give them the necessary entrepreneurial competencies, such as innovation and risk-taking, university students need to receive adequate entrepreneurship education. Unfortunately, the notion of IEO, which regards to taking risks, being initiative-taking, and being innovative as entrepreneurial competencies, has not been thoroughly investigated. Thus, this study's main objective is to conduct a thorough analysis into IEO by mapping previous research on the subject among students at HEIs in South Africa. Therefore, the significance of this study lies in its ability to shed light on the ideas and methodologies used in prior literature, and to identify any gaps in existing literature that might emerge for further research in IEO amongst students at HEIs in South Africa.

## **1.7 KEY CONCEPTS USED IN THIS STUDY**

In the section that follows, the repeated concepts that are required for this study are briefly explained.

### **1.7.1 ENTREPRENEURIAL ORIENTATION**

Over 30 years of research have been conducted on the concept of an entrepreneurial orientation (EO), which is what motivates organisations to pursue entrepreneurial activities. According to Lumpkin and Dess (1996:135), EO is typically thought of as a business decision-making orientation that favours entrepreneurial activities. This study adopts the definition of EO as provided by Lumpkin and Dess (1996:137), that EO is characterised by an ability to act autonomously, a capacity to innovate and take-risks, and an inherent capacity to be aggressive toward competitors and initiative-taking relative to the market opportunities. Thus, EO refers to the processes, practices, and decision-making activities that lead to new entry (Covin & Wales 2012:679).

### **1.7.2 INDIVIDUAL ENTREPRENEURIAL ORIENTATION**

According to Mutlutürk and Mardikyan (2018:3), IEO is acknowledged to be a thorough assessment of an individual's propensity for entrepreneurship. Hassan *et al.* (2021:405), define IEO as the ability, skill, and motivation of an individual to start their own business. Thus, a distinctive contribution of IEO to research may be important to evaluating decision-maker's general predisposition toward entrepreneurial decisions and behaviours, whether inside or outside of an organisation.

### 1.7.3 HIGHER EDUCATIONAL INSTITUTION

Higher Educational Institutions (HEIs) are universities, colleges, and other institutions of higher education. These include both conventional universities and institutions with a focus on the professions, such as polytechnics or universities of applied sciences. HEIs provide educational programs for which the institution grants a bachelor's degree, diplomas, and higher certificates. HEIs can be private, public, or other non-profit recognised institution.

### 1.7.4 ENTREPRENEURSHIP

According to Mokaya *et al.* (2012:130), entrepreneurship as the fundamental foundation of modern businesses, it is a driving force behind the innovative businesses that define today's economy. Mokaya *et al.* (2012:130), explains further that the word "entrepreneurship" is derived from the French verb "entreprendre," which means to undertake. For the purposes of this study, entrepreneurship then refers to the process by which a person identifies and seizes possibilities, organises, manages, and accepts commercial risks while also realising financial gains (Covin & Wales 2012:694).

## 1.8 STRUCTURE OF THE STUDY

This study comprises of five chapters detailed as elaborated hereunder.

In chapter one the problem statement, along with an introduction, background information about the study, a list of objectives for the study (including primary, secondary, and



methodological objectives), research questions, the study's scope, importance, and structure, are discussed.

Chapter two represents the overview of the literature of this study. Chapter two commences by giving a brief overview of EO as the foundation for this study, from which IEO originated. The five dimensions of EO, innovativeness, risk-taking, proactiveness, competitive aggressiveness and autonomy will be explained. The second part of this chapter will focus on the contextualisation of IEO, starting by defining IEO and by discussing the elements of IEO and the importance IEO. The following discussion, on the part of chapter two, will be a discussion about how the field of IEO research has developed. The last part of this chapter will focus on evolution of the field of research on IEO amongst students.

Chapter three will provide a basic framework within which this study is conducted in answering the research question as annotated in chapter one and the methodological approach used. The research onion framework of Saunders *et al.* (2019) will be adopted in this study to outline the chosen research design and methodology and therefore, the six layers of the research onion as relating to this study, will be discussed. Chapter three concludes by discussing the ethical aspects of the current study.

Chapter four provides a discussion on the empirical findings and further discussion on IEO study conducted among students at HEIs in South Africa. This chapter will begin by providing a profile of business journal publications on IEO amongst HEIs students in South Africa. Sample size used and methodologies adopted will be identified and discussed on the following section. Topical clusters and main findings within the current IEO research amongst students at HEI in the South African context will be discussed next. In conclusion, the chapter will provide research gaps and avenues for future investigation.

The final chapter of this study, chapter five will offer an overview of the preceding chapters, with a focus on the main conclusions drawn from the narrative literature review. Furthermore, recommendations based on the empirical findings of the study and the conclusions drawn from the conducted research will be provided in this chapter, which will also be predicated on the literature review. A detailed discussion of the study's strengths and weaknesses will wrap up the chapter, along with recommendations for future studies.

**1.9 SUMMARY**

This chapter gave an overview of the study's history. The problem statement was identified. The primary, secondary, and methodological study objectives that will help in addressing the annotated research questions have all been established. The repeated key concepts that will be employed throughout this study were briefly illustrated. This study has a clearly defined framework that will enable a methodical approach to be taken as it attempts to address the stated research problem. The next chapter will provide a review of the literature relevant to this study's theoretical analysis of the nature, significance, and evolution of IEO as well as the earlier studies on IEO in general and among students at HEIs.

**CHAPTER 2****CONTEXTUALISING INDIVIDUAL ENTREPRENEURIAL ORIENTATION****2.1 INTRODUCTION**

The primary objective of this study is to undertake a narrative literature review of IEO research amongst students at HEIs in South Africa. Chapter two provides the theoretical background to this study.

The first part of this chapter commences by giving a brief overview of EO as the foundation for individual EO. The five dimensions of EO, namely innovativeness, risk-taking, proactiveness, competitive aggressiveness and autonomy will be briefly explained. The second part of this chapter will focus on the contextualisation of IEO, starting by defining IEO and discussing the elements of IEO and the importance IEO. Thereafter, an examination of the development of the IEO research in general will be conducted, followed by a discussion on the development of the field of research on IEO amongst students at HEIs. Through this examination the first methodological objective of this study will be achieved.

**2.2 ENTREPRENEURIAL ORIENTATION (EO)**

This section will begin with an introduction to the EO concept by defining it and by highlighting its five dimensions. In conclusion a discussion on the importance of EO will be provided.

**2.2.1 DEFINING ENTREPRENEURIAL ORIENTATION**

At the firm level, EO has received extensive examination as a construct that affects a firms' performance levels (Engelen, Gupta, Strenger & Brettel 2015:1088). EO thus refers to when leadership and management create strategies with the purpose of trying something new and seizing career possibilities that other firms are unable to seize. Mokaya *et al.* (2012:133) suggests that EO describes a business's methods, policies, and decision-making processes, particularly when it adopts an entrepreneurial mindset. One cannot however have a

comprehensive definition of EO without defining its five dimensions, which are discussed in the following section.

## 2.2.2 DIMENSIONS OF ENTREPRENEURIAL ORIENTATION (EO)

Miller (1983:771) was the first to propose the idea of EO as including aspects of innovativeness, proactiveness, and risk-taking. Covin and Slevin (1989:83) further developed the idea and made it more well known under the name entrepreneurial strategic posture (ESP). Later, EO was further developed by Lumpkin and Dess (1996:150) by developing its five dimensions, which are innovativeness, risk-taking, proactiveness, competitive aggressiveness, and autonomy. According to Lumpkin and Dess (1996:152), these five aspects they individually and collectively constitute the domain of EO and are necessary for an EO to materialise.

### 2.2.2.1 Innovativeness

Lumpkin and Dess (1996:142) identified innovativeness as a business' capacity to actively engage in and promote original ideas, inventive research, and experimentation that can be directed toward new goods, systems, or technological advancements.

### 2.2.2.2 Risk-taking

According to Covin and Wales (2012:604), risk-taking is the desire for a business to invest money into endeavours whose results are unpredictable and for which there might be significant economic loss.

### 2.2.2.3 Proactiveness

Proactiveness takes place when a business attempts to compete in the industry and respond to business opportunities that emerge. Proactiveness by the business, entails releasing innovative goods and competitive services in the market as well as managing the expectation of potential demand to produce transformation and effect its surroundings (Lumpkin & Dess 1996:147).

#### 2.2.2.4 Competitive aggressiveness

A business' desire is to engage in aggressive and ruthless competition to enter a market or establish a stronger presence in the market or industry (Lumpkin & Dess, 1996:148). Thus, according to Lumpkin and Dess (1996:148), competitive aggressiveness refers to the objectives that business pursues fervently to outperform the main competitors in the market.

#### 2.2.2.5 Autonomy

When a business intervenes by presenting a new core thought or view and seeing it through to a successful conclusion, the business is exercising its right to autonomy, which is the ability to capitalise on chances for a business competitive advantage. The power to make critical decisions about what gets done, how it gets done, when it gets done, and the overall business corporate strategy is what Lumpkin (1996:140) characterises as autonomy.

### 2.2.3 IMPORTANCE OF ENTREPRENEURIAL ORIENTATION (EO)

Mutlutürk and Mardikyan (2018:4) are of the opinion that entrepreneurship can be taught and learned as it helps individuals to comprehend the entrepreneurial process to raise their awareness of entrepreneurship and, as a result, increase the probability that they would decide to become self-employed. Thus, entrepreneurship is viewed as a means of life and an element that aids in the process of thinking required to defeat risks, accept challenges, and seize opportunities ( Mutlutürk & Mardikyan, 2018:1). Bernoster, Mukerjee and Thurik (2021:235) identify the objective of entrepreneurship as an entrepreneurial success, and a key prerequisite for EO. Thus, EO might also empower individuals to make wise decisions about starting their own businesses.

## 2.3 CONTEXTUALISING IEO

Researchers such as Robinson and Stubberrud (2014:8) are of the opinion that EO is a multi-dimensional construct that can be applied to both the firm and individual levels.

### 2.3.1 DEFINING INDIVIDUAL ENTREPRENEURIAL ORIENTATION (IEO)

Assessing a decision-maker's overall propensity for entrepreneurial decisions and activities, whether inside or outside of an organisation, may be crucial to IEO's distinct contribution to research (Mutlutürk & Mardikyan, 2018:3). Hence, Hassan *et al.* (2021:405) define IEO as the tendency for people to take risks, engage in creative activities, and be initiative-taking in observing and anticipating the future. Importantly, Hassan *et al.* (2021:405), emphasises the skills that make up IEO, namely innovativeness, risk-taking, and proactiveness, and views these skills as crucial to an individual's growth and success in the world of business. Thus, it is a preferred definition on the current study.

### 2.3.2 DIMENSIONS OF IEO

In his analysis of IEO, Koe (2016:3) agreed that IEO is a multi-dimensional construct, providing researchers additional opportunities to investigate IEO from other angles and levels. Koe (2016:3) suggests that it is worthwhile to investigate how IEO affects people's attitudes and behaviours, particularly how it affects people's intentions to start their own business.

The three dimensions of innovativeness, risk-taking and proactiveness as it applies to the individual are briefly discussed in the following sections.

#### 2.3.2.1 Innovativeness

The most notable characteristic of an entrepreneur is the ability to behave in an innovative manner. According to Aggarwal and Chauhan (2022:3), the ability of an entrepreneur to innovate is seen as a part of their strategic orientation and environmental awareness. Wahyudi (2023:1094) notes that a successful entrepreneur needs an inventive mindset to add value to the market and set themselves apart from rivals. Therefore, in this study innovativeness regarding IEO is the individual entrepreneurs' capacity to generate new useful ideas, products, and services (Wahyudi 2023:1095).

#### 2.3.2.2 Risk-Taking

Risk-taking involves the propensity to take bold actions such as venturing into unknown markets and allocating a substantial portion of resources into ventures that have uncertain outcomes (Mutlutürk & Mardikyan 2018:3). Aggarwal and Chauhan (2022:3) annotates that risk-taking describes an individual's willingness to engage in acts with unknown results and their attitude toward risk. This definition of Aggarwal and Chauhan (2022:3) is the preferred definition of risk-taking for the purposes of the current study as it relates to IEO. It is, therefore, imperative to note that the capacity to take reasoned yet brave action, connected to a trade-off involving risk and reward, and impacted by a capacity for uncertainty is the mindset that may inspire individual entrepreneurs to start businesses that others might shy away from (Wahyudi 2023:1095).

### 2.3.2.3 Proactiveness

According to Emami *et al.* (2018:2418) entrepreneurs' proactiveness is assessed by how willing they are to intentionally influence their financial and social surroundings. Aggarwal and Chauhan (2022:3) define proactiveness as the predictive and behaviour of an individual who prefers to shape events rather than passively witness them. Wahyudi (2023:1094) defines an individuals' proactiveness as having the capacity to identify opportunities, seize them, and act, as well as having the fortitude to keep going when things go tough. Wahyudi (2023:1094) adds that an entrepreneur's ability to take risks significantly affects how initiative-taking they are because running a firm necessitates being prepared to manage market challenges and exploit opportunities. Therefore, proactiveness is essential for business success because it enables entrepreneurs recognize and pursue opportunities in the competitive landscape (Wahyudi 2023:1094). Wahyudi's definition of proactiveness is used in this study's analysis of IEO for the study to achieve its goals.

### 2.3.3 IMPORTANCE OF IEO

Koe (2016:3) is of the opinion that IEO is essential to laying the foundations for the success of small and medium-sized enterprises' (SMEs). Thus, investigating EO at an individual-level construct became essential because it might be crucial for aspiring entrepreneurs, incubators, and potential investors to analyse entrepreneurial orientation at an individual level (Aggarwal & Chauhan 2022:2). A better understanding of entrepreneurship and the contributions which

are made by individuals to the expansion and success of a business may be possible with the measurement of EO at the individual level. Hence, Aggarwal and Chauhan (2022:4), posit that IEO has an impact on individuals' entrepreneurial intents and encourages them to investigate their startup ideas. Furthermore, Aggarwal and Chauhan (2022:2) notes that employees who exhibit high IEO levels tend to engage in more explorative activities, as a result aids in organisational renewal and innovation.

#### 2.4 EVOLUTION OF THE FIELD OF RESEARCH ON IEO

The study of Bolton and Lane (2012:92) identified innovativeness, risk-taking, and proactiveness as traits that relate to entrepreneurial intention. This study of Bolton and Lane (2012:92) created and evaluated the measurement for IEO using a sample of 1100 students from the USA central university. The outcome of this study suggests that team and project assignments for students as well as entrepreneurship education could benefit from the implementation of a measurement tool for individual-level entrepreneurial orientation. IEO is valuable as a deciding factor for educational preparation for different options, including career decisions and business endeavours. IEO may also be used by those who wish to assess the strength of their entrepreneurial orientation as well as by investors who are contemplating funding business concepts.

IEO has then attracted the attention of researchers, and studies have been undertaken on the topic since Bolton and Lane (2012:92) confirmed EO as an individual construct. For instance, in the study conducted in Portugal by Ferreira, Marques, Bento, Ferreira and Jalali (2017:328), which included six decision-maker and 17 individuals, including facilitators and managers of businesses, used cognitive mapping to operationalise and measure IEO. In this study Ferreira *et al.* (2017:328) found that IEO can be improved utilising a paradigm based on metacognitive decision making. To improve IEO on decision makers, this framework identified six points of view, including risk-taking, ethics, innovativeness, competitiveness, leadership, and experience (Ferreira *et al.* 2017:331). In evaluating the impact of IEO on an individual's creativity and entrepreneurial intention, Rahim (2018:47) discovered that IEO serves as a mediator in the relationship between individual innovation and entrepreneurial intention. Rahim (2018:43) used the theory of planned behaviour, the entrepreneurial event model, and the framework for individual entrepreneurial interactions as the foundational concepts for his



conceptual paper, which was conducted at the University of Technology in Malaysia. The literature on the theory of planned behaviour (TPB), entrepreneurial event model (EEM), individual entrepreneurial orientation (IEO), and individual creativity served as the theoretical basis for Rahim's (2018:43) conceptual paper, and this study established a proposal for a new relationships' framework.

The previous research conducted centred on evaluating IEO's individual dimensions, innovativeness, risk-taking, aggressive competitiveness, with other IEO component parts, entrepreneurial traits, behaviours, and attitudes. The latest issues and viewpoints on IEO are currently emerging. As an example, the study by Emami, Ashourizadeh, Sheikhi, and Rexhepi (2022:2414) clarified the effect of IEO during periods of crisis and economic downturn. The study covers the benefits of IEO during the Coronavirus epidemic. In this study, 203 ICT-related aspiring entrepreneurs from Iran's Science, Technology, and Innovation Centres made up the sample. The findings reveal that aspiring business owners with greater IEO are more confident in the perceived opportunity and are more likely to conduct market research and assess the environment. Additionally, individuals tend to investigate the market more when they are confident in the present opportunity.

## **2.5 EVOLUTION OF THE FIELD OF RESEARCH ON IEO AMONGST STUDENTS AT HEIs**

IEO measurement items were developed based on Lumpkin and Dess's (1996:138) description of the five EO dimensions, innovativeness, risk-taking, proactiveness, aggressive competitiveness, and autonomy. In their study Bolton and Lane (2012:229) found three of the five factors being unique to their study, innovativeness, risk-taking, and proactiveness, as they showed reliability and validity because of the measurement development process for IEO. These three dimensions, innovativeness, risk-taking, and proactiveness are the same ones that are frequently employed in EO literature that has already been published. As discussed in the previous section, Bolton and Lane (2012:229) created IEO as to quantify EO at the individual level. This IEO measure was created, validated, and then put to the test on 1,100 American university students. Bolton and Lane (2012:230) recommended academics to further evaluate the IEO employing students from other universities across the globe, as well as taking into

consideration other age groups. They argued that the measure could be a useful tool for determining career options and for checking interest as an entrepreneur for individuals who need support from small-business incubators (Bolton & Lane 2012:230). They additionally recommended future studies to examine IOE measure on individuals who are not students. However, the discussion in this section is based on the IEO research of students at HEIs.

Studies that were conducted have identified entrepreneurship education as a factor in entrepreneurial behaviour and enhancing the components of IEO, that is, innovativeness, risk taking and aggressive competitiveness on individuals. For instance, Koe (2016:3) believed that entrepreneurship education is important in developing student's entrepreneurial competencies. Therefore, to determine the value of studying IEO using the three IEO dimensional model, Koe (2016:4) conducted a study amongst 176 public university students in Malaysia to examine the amount of entrepreneurial intention among university students and the impact of IEO. According to Koe (2016:4), the entrepreneurship education curriculum at HEIs should put a strong emphasis on developing students' IEO skills and entrepreneurship aspirations. Koe (2016:8) further found that entrepreneurship education significantly affects students' intentions to launch their own businesses as well as the skills required to do so. On another study by Frunzaru and Cismaru (2018:1969) which included 590 students from three countries, France, Poland, and Germany, investigated the possibility that entrepreneurial education influences generation Z students' goal to become entrepreneurs as well as their IEO.

The findings of Frunzaru and Cismaru (2018:1973) suggest that students who received entrepreneurial education have a higher IEO and intentions towards entrepreneurship compared to students who did not receive entrepreneurial education, reiterating the importance of HEIs in the development of entrepreneurship. Another study of Manik and Kusuma (2021:1), investigated 200 students' IEO on entrepreneurial intention at major Indonesian universities. The results of Manik and Kusuma's (2021:285) study indicated that entrepreneurship education aims to encourage entrepreneurial behaviour and mindset among students, nurture entrepreneurial intentions and creation of new ventures.

According to Hassan *et al.* (2021:411), HEIs play a critical part in the overall IEO as well as the individual development of each student's goals through the development of new and current skills through entrepreneurship education. Hassan *et al.* (2021:412) further argues that the

HEIs' assistance, instruction, and environment can significantly improve a student's capacity and drive to launch an entrepreneurial enterprise.

## **2.6 SUMMARY**

In this chapter it was discussed that since its inception, EO has is regarded as a construct at the firm level that helped to define a firm. The five EO dimensions, innovativeness, risk-taking, proactiveness, competitive aggression, and autonomy were identified. Literature has revealed new insights into EO at the individual level. Due to this reason, IEO was discussed, from its definition, importance, and its evolution.

It is clear from the discussion in this chapter that entrepreneurial education must begin at HEIs to increase students' competencies and support the growth of small and medium-sized firms. When students have high IEO, they are more likely to contribute to exploratory activities, which promote organisational renewal and creativity, enhancing business success. Therefore, the economy will grow as businesses succeed.

## CHAPTER 3

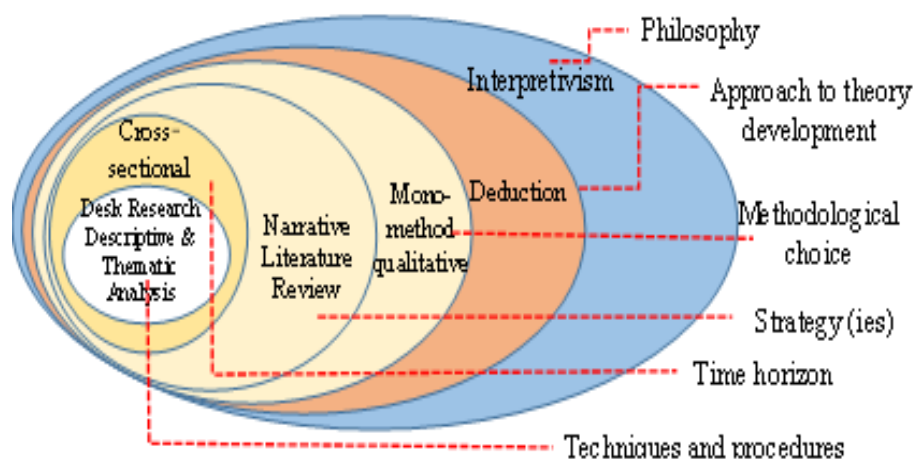
### RESEARCH DESIGN AND METHODOLOGY

#### 3.1 INTRODUCTION

Chapter two gave a literature overview on the studies conducted on IEO, drawing more attention on the development of IEO.

This chapter gives an overview of the research design and methodology used in this study. For this purpose, the research onion framework provided by Saunders, Lewis, and Thornhill (2019:128) will serve as the basis for discussion of the different methodological choices made in this study. The methodological choices for this study are summarised in figure 3.1. According to Saunders *et al.* (2019:128) the research onion framework consists of layers, namely the research philosophy, approach to theory development, methodological choice, research strategy, time horizon, data collection and analysis techniques and procedures. The same layers are discussed in this chapter. Furthermore, it should be noted that just the option chosen in relation to the current study are covered in full for each layer of the onion.

**FIGURE 3.1 THE METHODOLOGICAL CHOICES**



Source: Adopted from Saunders *et al.* (2019)

### 3.2 RESEARCH PHILOSOPHY

According to Saunders *et al.* (2019:130), the phrase "research philosophy" describes a set of presumptions and attitudes towards the growth of knowledge. Saunders *et al.* (2019:130) propose five philosophies: positivism, critical realism, interpretivism, postmodernism, and pragmatism. According to Alharahsheh and Pius (2020:42) Interpretivism is more focused on context-related in-depth variables and elements. Interpretivism paradigm views people as being distinct from physical phenomena since they might have deeper meanings and cannot be studied in the same way as physical phenomena. Therefore, adopting the interpretivism paradigm can offer a thorough comprehension of specific situations, such as cross-cultural studies, variables driving certain development, and beyond. This can be conducted by gathering and interpreting qualitative data, which can result in profound insight and findings that may be different from other researchers (Alharahsheh and Pius 2020:42).

The current study will use the interpretivism paradigm as it enables researchers to use qualitative methodologies, which are best suited for gaining profound insights depending on a specific context. As a result, the current study will concentrate on gathering information on previous research conducted on IEO amongst students globally and at South African HEIs to broaden understanding and knowledge on the topic.

### 3.3 APPROACH TO THEORY DEVELOPMENT

An essential topic regarding the design of an investigation is how much of it is focus on developing or testing theories. Abductive, deductive, and inductive research options are identified in the choice layer of the research onion as the three different methods for developing a theory a researcher can choose from (Saunders *et al.* 2019:152). According to Saunders *et al.* (2019:153), a researcher uses a deductive approach when they build a research strategy to assess their theory after developing a theory, which is frequently formed by reading academic literature. Therefore, deductive reasoning happens when the conclusion is drawn from a collection of theory-derived arguments, with the conclusion being true when all the arguments are true (Saunders *et al.* 2019:153).

The current study has followed a deductive approach by reviewing and summarising previous research developed on IEO in general and amongst South African HEIs.

### 3.4 METHODOLOGICAL CHOICE

A researcher will either choose a single data collection method and the associated analysis procedures, known as a mono-method qualitative, or use multiple data collection methods and the associated analysis procedures to address the research questions, known as multiple methods (Saunders *et al.* 2016:145). The latter option is used in business and management research, where one research study may combine quantitative and qualitative approaches and procedures with primary and secondary data (Saunders *et al.* 2016:145). If a researcher opts to adopt the mono approach, they will either combine one quantitative data gathering methodology or one qualitative data collection technique (Saunders *et al.* 2016:146). In contrast, a researcher may opt to integrate data collection methods and processes using a variety of multiple method designs (Saunders *et al.* 2016:147). The phrase "multi-method" refers to combinations where more than one data gathering method is employed along with related analysis methods, however this is limited within either a quantitative or qualitative universal perspective (Saunders *et al.* 2016:147).

Given its purpose, the current study will adopt a mono-method qualitative approach by conducting a narrative literature review using the data collected from the desk research. When a researcher uses just one research strategy, either quantitative or qualitative, they are using a mono method. (Saunders *et al.* 2019:181).

### 3.5 RESEARCH STRATEGY

After removing the philosophical and choice layers, the research strategy layer of the onion becomes visible. According to Saunders *et al.* (2012:135) the research strategy outlines the researcher's intended method of operation. Saunders *et al.* (2012:135) identified research strategies, including the experimental design, survey design, archival research, case study, ethnography, action research, grounded theory, and narrative inquiry.

The current study will employ a narrative or traditional literature review. According to Ferrari (2015:230) a narrative or traditional literature review is a thorough, critical, and unbiased analysis of the most recent research on a subject. The goals of a narrative literature review are to identify and summarise what has already been published, to prevent duplications, and to identify new study areas that have not yet been explored on a particular topic (Ferrari 2015:230). A narrative literature review employs a flexible approach to mapping the current state of knowledge and identifying potential gaps in previous studies and is biased toward a qualitative interpretation of prior knowledge (Turnbull, Chugh & Luck 2023:2).

The study will use a desk research approach and focus on gathering data from previously released business journals on IEO among students at HEIs. Desk-research is a type of investigation that is based on information found in reports and other similar materials that are available online, in public libraries, or through surveys previously conducted (Saunders *et al.* 2019:143). All studies that employ information from administrative records inevitably involve secondary data analysis. According to Saunders *et al.* (2019:246), secondary data is information obtained through the research or opinions of other researchers.

### 3.6 TIME HORIZON

The layer immediately below the centre of the research onion shows the time horizon used for the research. According to Saunders *et al.* (2019:148), the time horizon is the time span in which the project is complete. The cross sectional and longitudinal time horizons are the two forms of time horizons as described in the research onion. According to Saunders *et al.* (2019:148), research can be a snapshot captured at a specific moment or it can more closely resemble a diary and reflect occurrences over a specific time. The diary perspective is referred to as longitudinal, whereas the snapshot time horizon is referred to as cross-sectional.

The cross-sectional time horizon is used in this study as it aims to review past research investigations that have been done in the field of IEO among HEI students in South Africa at the current time.

### 3.7 TECHNIQUES AND PROCEDURES

The final layer of the research onion structure is made up of the methods and strategies the study will employ to streamline data collection and analysis (Saunders *et al.* 2016:124). As a result, the following sections discuss the methods the researcher used for this study for both data collection and data analysis.

#### 3.7.1 DATA COLLECTION

The current study's primary goal is to outline the field of IEO among students at HEIs in South Africa and it will only gather secondary data from research already conducted on the topic. Secondary data is information derived from the findings or perspectives of other researchers (Saunders 2019:246). To compile business journals relevant to the main objective of the current study that are available, desk research is used to gather a published business journals that focus on IEO research conducted in the past, as well as the business journals amongst students at HEIs in South Africa.

#### 3.7.2 DATA ANALYSIS

To compile an exhaustive literature review Tables are created throughout the analysis stage from relevant information gathered from the many selected business journal publications to provide an overview of the field of IEO research among students at HEIs in South Africa. The title of the business journal and year of publication, the author(s), journal name, institution that participated in the study and the region where the research was conducted in South Africa, the sample size, research design and methodologies adopted, topical clusters, main findings and recommendations for future studies will all be included in the literature review tables. Thus, this study makes use of a descriptive and thematic analysis of data. Descriptive analysis is the form of data analysis that aids in describing, illustrating, or summarising data points in a useful way (Castleberry & Nolen 2018:808). One way to analyse qualitative data, such as that found in texts, interviews, or surveys, is through thematic analysis (Castleberry & Nolen 2018:808). To put the themes and patterns of meaning that emerge from the data into categories that can aid with the research questions, common themes and patterns of meaning are identified.



Therefore, thematic analysis is used by researchers for different forms of research, such as examining people's perspectives, opinions, experiences, or values on a certain topic.

### **3.8 ETHICAL CONSIDERATIONS**

Ethics are standards of behaviour that set apart between acceptable and inappropriate actions (NMU IRC 2010:1). Professional societies, governmental organizations, and universities have developed certain codes, rules, and policies relating to research ethics given the significance of ethics for the conduct of research.

Nelson Mandela University acknowledges the value of intellectual excellence and promises to carry out its operations with the highest integrity. The University can carry out its main goal of creating innovative knowledge because the Policy on Research Ethics recognizes the inherent intellectual and academic independence connected with HEIs. The goal of the policy is to raise public knowledge of the underlying ethical norms, methods, and guidelines that apply to research involving both human and animal subjects (NMU IRC 2010:7). The Institutional Regulatory Code (IRC) of Nelson Mandela University discusses who is responsible for obtaining ethics clearance. The need of obtaining the ethical approval before performing research is explained in Section 9 of the code. Guidelines for including an ethical consideration in research proposals, protocols, treatises, dissertations, and theses are also outlined in this section.

In accordance with Nelson Mandela University policies, before starting this study, the researcher made sure the study complied with the university's ethical standards by applying for, obtaining approval and ethical clearance from the ethics committee of the institution. See Appendix 3 for Nelson Mandela University Institutional Regulatory Code (IRC).

### **3.9 SUMMARY**

The Saunders, Lewis, and Thornhill research design and methodology framework, sometimes known as the "research onion," was adopted to make it easier to describe and explain the current study's methodology and research design choices.

This study employs a deductive approach to development of theories, a mono-qualitative methodological choice, and an interpretivism paradigm, as summarised in figure 3.1. Narrative literature review is used as the research strategy to collect all previous research articles that conducted research on IEO amongst students at HEIs in South Africa. The cross-sectional time horizon is used in this study as it seeks to review the previous research conducted in the field of IEO among HEI students in South Africa at the current time. Descriptive and thematic analysis of the data are used by the researcher in this study. Descriptive analysis is the form of data analysis that aids in describing, illustrating, or summarising data points in a useful way and thematic analysis is different forms of research, such as examining people's perspectives, opinions, experiences, or values on a certain topic.

**CHAPTER FOUR**  
**EMPIRICAL RESULTS: INDIVIDUAL ENTREPRENEURIAL ORIENTATION**  
**RESEARCH AMONGST STUDENTS AT HIGHER EDUCATIONAL**  
**INSTITUTIONS IN SOUTH AFRICA**

**4.1 INTRODUCTION**

The research design and methodology used in this study was discussed in Chapter three. Therefore, the aim of this chapter is to provide an overview of the empirical findings based on the narrative literature analysis of the data collected through desk research.

This chapter will begin by providing a profile of business journal publications on IEO amongst HEIs students in South Africa. A sample size used, research design and methodologies adopted by the researchers will be discussed on the following section. Topical clusters and main findings within the current IEO research amongst students at HEI with the South African context are the discussion of the section that follows next. In conclusion, the chapter will provide avenues and recommendations for future investigation.

**4.2 BUSINESS JOURNAL PUBLICATIONS on IEO IN SOUTH AFRICA**

This section aims to identify and acknowledge business journals published on IEO studies conducted among students at South African HEIs. The title of the article and year of publication, the author(s), journal name, institution that participated in the study and the region where the research was conducted in South Africa are summarised in Table 4.1 below.

**Table 4.1: BUSINESS JOURNAL PUBLICATIONS OF IEO IN SOUTH AFRICA**

YEAR	AUTHOR(S)	TITLE	JOURNAL	INSTITUTION	REGION IN S.A.
2014	Fatoki & Oni	Students' perception of the effectiveness of entrepreneurship education at a South African University	Mediterranean Journal of Social Sciences	University of Limpopo	Limpopo
2016	Basardien, Friedrich & Twum-Darko	Evidence-based practices of promoting entrepreneurship education in higher education institutions in Africa.	Journal of Economics and Behavioural Studies	University of the Western Cape	Western Cape
2017	Van Der Westhuizen	Theory U and individual entrepreneurial orientation in developing youth entrepreneurship in South Africa	Journal of Contemporary Management	University of KwaZulu Natal	KwaZulu Natal
2021	Awotunde & Van Der Westhuizen	Developing entrepreneurial self-efficacy and individual entrepreneurial orientation: An action-oriented approach	International Journal of Innovation and Sustainable Development	University of KwaZulu Natal	KwaZulu Natal
2022	Msosa & Radebe	Antecedents of EI amongst higher education students in South Africa	Business Excellence and Management Journal	Mangosuthu University of Technology	KwaZulu Natal

Source: Researcher

Table 4.1 illustrate five business journals identified investigating IEO amongst students at HEIs in South Africa. The table shows that from 2014 to 2022, five HEIs conducted research on IEO among students in the South African context. The research for three of the five articles took place at the University of KwaZulu Natal, while the other two took place at the Universities of Limpopo, the University of the Western Cape. The table also demonstrates that

only three of South Africa's nine eligible provinces were used for the research of these publications. These studies took place in the provinces of Limpopo, Western Cape, and KwaZulu Natal.

### 4.3 SAMPLE SIZE USED, RESEARCH DESIGN AND METHODOLOGY ADOPTED

This section provides an overview of the IEO research published in business journals, in terms of sample size used, and methodologies adopted.

**Table 4.2: SAMPLE SIZE USED, RESEARCH DESIGN AND METHODOLOGY ADOPTED**

YEAR	AUTHOR	SAMPLE SIZE	RESEARCH DESIGN AND METHODOLOGY
2014	Fatoki & Oni	152 final year Business Management students	Quantitative and descriptive
2016	Basardien Friedrich, & Twum-Darko	69 students in second year of study from all faculties.	Quantitative and descriptive
2017	Van Der Westhuizen	380 students in first year of study from the School of Management, Information Technology and Governance.	Quantitative and deductive
2021	Awotunde & Van Der Westhuizen	230 studentpreneurs from school of Management IT and Governance.	Quantitative and explanatory
2022	Msosa & Radebe	400 students from all faculties.	Quantitative and descriptive

Source: Researcher

In Table 4.2 all five investigations used a deductive approach to theory development, a positivistic framework, and a mono-qualitative methodology approach. They all used a survey as their research strategy to collect data. Fatoki and Oni's (2014:588) study focused on 152 final year students, undergraduate level in the Department of Business Management. The study of Basardien (2016:71) conducted at the University of the Western Cape UWC, comprised of 69 students majoring in business management studies. In the study of Van Der Westhuizen (2017:541), 380 first-year undergraduate students enrolled full-time in the School of Management, Information Technology and Governance at the University of KwaZulu-Natal in

Durban, comprised the target population. use a questionnaire with four-point Likert scale questions that are both open-ended and closed-ended. Awotunde and Van Der Westhuizen (2021:155), for their investigation, included 230 students from the University of Kwazulu-Natal selected from Departments of Management, Information Technology, and Governance. In the most recent study of Msosa and Radebe (2022:47) a sample of 400 students from all faculties were selected at random to participate in the survey.

**4.4 TOPICAL CLUSTERS AND MAIN FINDINGS**

This section identifies and describes key topical clusters, themes within current IEO research amongst students and the findings of the studies conducted. Table 4.3 provides a summary of the topical clusters, and findings covered on the identified journal publications in South Africa.

**Table 4.3: TOPICAL CLUSTERS AND MAIN FINDINGS**

<b>YEAR</b>	<b>AUTHOUR (S)</b>	<b>TOPIC</b>	<b>MAIN FINDINGS</b>
2014	Fatoki & Oni	Entrepreneurial education effectiveness in IEO development.	Entrepreneurship education enhances students’ IEO and encourages students to take on entrepreneurship as a career and gives students the skills needed to be entrepreneurial.
2016	Basardien, Friedrich & Twum-Darko	IEO improves after completing entrepreneurial education or module.	The growth of entrepreneurial self-efficacy predicts IEO behaviour, transformation, and action.
2017	Van Der Westhuizen	Individual preferences and tendencies for innovation, risk-taking and proactiveness.	The research provides evidence that IEO accomplishment, creativity, and self-worth are taken as a starting point for university EE programs.
2021	Awotunde & Van Der Westhuizen	Entrepreneurship self-efficacy (ESE) can be developed to activate IEO in students who	The growth of entrepreneurial self-efficacy predicts IEO behaviour,

		participated in a systemic learning programme.	transformation, and action.
2022	Msosa & Radebe	A lack of IEO, capital, networking, and mentorship makes it very difficult for young people, particularly university students, to pursue entrepreneurship as an alternative career.	Subjective norms, perceived behavioural control, attitude, and intention to start a business all had a positive and substantial connection. The association between self-efficacy and intention to pursue entrepreneurship, however, was unfavourable and negligible.

Source: Researcher

The aim of Fatoki and Oni's (2014:71) study among students at the University of Limpopo was to determine how well IEO develops through entrepreneurship education. They discovered that entrepreneurship education works well to improve students' IEO. Students are given the necessary knowledge and abilities through entrepreneurial education, which encourages them to pursue entrepreneurship as a career. In the same manner, Basardien *et al.* (2016:69) found that students' IEO improves after they obtain entrepreneurial education or complete an entrepreneurship module as part of their studies. The primary findings of the research were that entrepreneurship education programs could have an impact on university students' academic performance, innovativeness, and self-esteem.

According to Van Der Westhuizen's (2017:548) research, the development of IEO in the context of Theory U can in fact have a good impact on the amount of entrepreneurship among students in South Africa. Awotunde and Van Der Westhuizen (2021:476) investigated the impact of entrepreneurial self-efficacy on students that took part in a systemic learning program. The study found that the development of entrepreneurial self-efficacy predicts IEO behaviour, change, and action.

Msosa and Radebe (2022:58) established that it is difficult for university students to choose entrepreneurship as a secondary job due to a lack of IEO, resources, networking, and mentorship. According to the study's findings, there is a strong and positive correlation between personal expectations, perceived behavioural control, individual attitude, and ambition to start a business.

#### 4.5 RECOMMENDATIONS FOR FUTURE RESEARCH

The previous section outlined and discussed the key findings from the IEO studies conducted among students at South African HEIs. The previous section outlined and discussed the key findings from the IEO studies conducted among HEI students in South Africa. This section presents future research recommendations as identified by the researchers listed in Table 4.1 of the current study. Provided in Table 4.4 is a summary of the research gaps identified that need further investigation in the field of IEO.

Table 4.4 demonstrates that all the studies listed had samples ranging from 69 to 2000 students, with 592 students on average taking part in each study's research. As a result, Fatoki and Oni (2014:590) advised that the volume of data gathered be increased to encompass a wider sample from more South African HEIs. In their study, Basardien *et al.* (2016:75) established that entrepreneurship education fosters IEO. Therefore, to assess the success of training programs, future study should consider longitudinal research methodologies. Further, Basardien *et al.* (2016:77) encourage academics to conduct follow-up research to see whether entrepreneurial program participants are establishing businesses more frequently than students who did not participate in entrepreneurial programs.

Van Der Westhuizen (2017:551) advised for further research to examine how Theory U, entrepreneurial self-efficacy, IEO, entrepreneurial intent, and entrepreneurial behaviour can be used to contribute to the launching and ongoing success of new businesses by student entrepreneurs in South Africa. To give exposure to students who do not have entrepreneurial background or experience, Awotunde and Van Der Westhuizen (2022:482), urge for further research into and incorporation of systemic action learning experimentation models into HEIs' educational practices. In conclusion, future studies should focus on comparing the entrepreneurial readiness of students from different universities to help discover the differences in the important characteristics that students from different institutions consider as antecedents of IEO (Msosa & Radebe 2022:59).



**Table 4.4: RECOMMENDATIONS FOR FUTUTRE RESEARCH**

<b>YEAR</b>	<b>AUTHORS</b>	<b>RECOMMENDATIONS</b>
2014	Fatoki & Oni	Data collection could include a larger sample from other universities in South Africa.
2016	Basardien, Friedrich & Twum-Dwarko	To ascertain the efficacy of training programs, longitudinal research designs should be considered in future studies. To find out if students who attended the program have established businesses more frequently than those students who did not.
2017	Van Der Westhuizen	Further investigation into the ways in which Theory U, individual entrepreneurial orientation, entrepreneurial self-efficacy, entrepreneurial intent, and entrepreneurial activity can support young entrepreneurs in South Africa in starting and maintaining successful new businesses is recommended.
2021	Awotunde & Van Der Westhuizen	The study concludes that HEIs can incorporate the model's findings into their pedagogical methods and that future research can investigate the effect of a systemic action learning research model on the advancement of entrepreneurship.
2022	Msosa & Radebe	To help discover the differences in important traits recognised as antecedents of IEO by students from different universities, future study might focus on a comparative analysis of student entrepreneurial preparedness across many institutions.

Source: Researcher

#### 4.6 SUMMARY

Chapter four has shed a light on the research done on IEO among students in HEIs in South Africa. The empirical findings discussed in this study are based on the five journal publications identified that relate to the topic of this study as identified in section 4.2. It is established that IEO can be developed through effective entrepreneurial education. Additionally, enhanced IEO equips students with knowledge and skills needed to manage successful businesses. These findings therefore present HEIs with a challenge: they must show that an action-based strategy incorporating practical components is necessary to significantly alter students' pre-existing mindsets to make entrepreneurship seem like a realistic career choice. A successful integration of the South African school curriculum with HEIs' entrepreneurship curricula is necessary. Education systems at all levels need to reorient their curricula so that entrepreneurship is given more weight as a subject option.

## CHAPTER 5 OVERVIEW, RECOMMENDATIONS AND CONCLUSION

### 5.1 INTRODUCTION

Chapter five as the concluding chapter of the current study, provides a summary of the preceding chapters of the literature review, the research design and methodology, as well as the key findings of the narrative literature review. Moreover, suggestions are offered for avenues for future research on IEO among students at HEIs in South Africa, based on the results of the study and the literature review. A conclusion will then be made after identifying the study's limitations.

### 5.2 OVERVIEW OF THE STUDY

Chapter one covered an introduction and the background of the study. The main goal of this study was to conduct a narrative literature review of earlier research on IEO among students at HEIs in South Africa, inline with the problem statement and purpose of the study. Secondary and methodological objectives were developed to fulfil the study's primary goal. Therefore, Table 5.1 provides a summary of the study's objectives. Additionally, in chapter one the research questions were formulated, the study's scope was described, and the significance of the study was highlighted. The chapter is concluded by giving a summary of key concepts used in this study and how the treatise layout will be structured.

EO is identified as the study's main theoretical foundation in chapter two of this study. Miller's study (1983:771) was the first to put forth the notion of EO as a firm construct, as well as features of innovation, proactivity, and risk-taking. Under the name of entrepreneurial strategic posture (ESP), Covin and Slevin (1989:83) expanded on the concept and increased its popularity. Lumpkin and Dess (1996:150) went on to further refine EO by defining its five dimensions, innovativeness, risk-taking, proactiveness, competitive aggressiveness, and autonomy. These five dimensions, which individually and collectively make up the domain of EO, are essential for an EO to manifest Lumpkin and Dess (1996:152). In their investigation, because of the measurement development process for IEO, Bolton and Lane (2012:229) found

that innovativeness, risk-taking, and proactiveness, were exclusive to their study and displayed validity and reliability. These three dimensions, innovativeness, risk-taking, and proactiveness, were used at a firm level in previously published EO studies. Therefore, IEO was developed by Bolton and Lane (2012:229) to measure EO at the individual level.

According to the prior literature, the distinctive and standout traits of a successful entrepreneur are the dimensions of IEO, innovativeness, risk taking, and proactiveness. An entrepreneur, according to Aggarwal and Chauhan (2022:3), should be willing to take risks and engage in actions with uncertain outcomes. When individuals have an innovative attitude, they might start taking risks. Therefore, a successful entrepreneur needs an innovative mindset to differentiate themselves from the competition and bring value to the market through their capacity to develop and recognise fresh and practical ideas, goods, and services. A successful entrepreneur has therefore the capacity to identify opportunities, seize them, and act, as well as having the stamina to persevere in the face of adversity.

IEO thus creates the groundwork for firms to succeed. Prior studies on IEO evaluation focused on assessing its individual dimensions, including innovativeness, risk-taking, proactiveness, and other IEO component elements, entrepreneurial traits, behaviours, and attitudes. Recently there are emerging new perspectives on IEO. Considering the study of Emami *et al.* (2022:2414) of the role of IEO in times of crisis and economic downturn in relation to the advantages of IEO during the Coronavirus pandemic.

The present study used Saunders *et al.* (2019:128) research onion model, to compile previous research business journals published on IEO among students in South Africa and to offer a thorough summary of the existing literature on the topic. The research strategy and methodologies used in the current study are summarised in Figure 3.1. Starting from the outside of the onion, this study employs an interpretivism paradigm, a deductive approach to theory creation, and a mono qualitative methodological approach. To compile all prior research publications that examined IEO among students at HEIs in South Africa, a narrative literature review was employed as the study methodology. In this study, the cross-sectional time horizon is employed to examine earlier studies on IEO among HEI students in South Africa at the present.

Desk research is used to collect secondary data and this study used a descriptive and thematic analysis of the data. The empirical findings of the current study as discussed in chapter four,

reveals that there is little investigation done in literature to investigate IEO amongst students at HEIs in South Africa. This is evident as only five business journal publications identified to have investigated on IEO amongst students at HEIs in South Africa. Further discussion on the key findings from empirical research are discussed in the next section, section 5.3. Table 5.1 provides a summary of the study's objectives and identifies in which chapter(s) each objective is achieved in.

**Table 5.1 SUMMARY OF STUDY OBJECTIVES AND CHAPTER(S) WHERE ACHIEVED**

<b>OBJECTIVES</b>	<b>CHAPTER</b>
<b>Primary objective:</b>	
The primary objective of this study is to undertake a narrative literature review of previous research conducted on IEO research amongst students at HEIs in South Africa	4
<b>Secondary objectives:</b>	
SO <sup>1</sup> : To profile the business journal publications in terms of the year of publication, authors of these publications, title of the journal, journal name, institutions, and the regions where research was conducted on IEO amongst students.	4
SO <sup>2</sup> : To profile business journal publications on IEO in terms of sample size used, research design and methodologies adopted.	4
SO <sup>3</sup> : To identify and describe key topical clusters and main findings within current IEO research amongst students.	4
SO <sup>4</sup> : To identify research gaps and avenues for future research within identified key topical clusters and main findings.	4
<b>Methodological objectives:</b>	
MO <sup>1</sup> : To conduct a narrative literature review on the nature and importance of individual entrepreneurial orientation, as well as the development of the prior research in the field of IEO in general and amongst students at HEIs in particular.	2
MO <sup>2</sup> : To undertake desk research to collect past research articles published on IEO amongst students at HEIs in South Africa and to conduct a narrative literature review to provides a comprehensive summary of existing literature on the topic.	4
MO <sup>3</sup> : To conduct descriptive and a thematic analysis to analyse the publications making up the study's data set to achieve the objectives of the study.	3 and 4
MO <sup>4</sup> : To provide conclusions and propose practical recommendations to researchers and entrepreneurship educators on research gaps to be addressed concerning IEO research amongst students at South African HEIs.	5

Source: Researcher

The summary of this study's objectives as shown in Table 5.1 demonstrates that the primary, secondary, and methodological objectives of this study are fulfilled.

The next section provides a summary of the key findings gathered from the literature review of this study.

### 5.3 DISCUSSION OF KEY FINDINGS

The important findings listed in chapter four are summarized in the paragraphs that follow. These empirical findings will be contrasted with those from researchers around the world. This section's objectives are to identify the topics that received the most attention and to determine whether South African research on this study correlates with research done elsewhere in the world.

In the investigation Fatoki and Oni (2014:71) found that learning about entrepreneurship improves students' IEO, students get motivated to pursue entrepreneurship as a career, and equips students with the necessary skills. Hence, through entrepreneurial education, self-efficacy is developed which predicts IEO behaviour, change, and action Basardien *et al.* (2016:69). According to Van Der Westhuizen's study (2017:548), university entrepreneurial education programs should therefore start with IEO accomplishment, innovation, and self-esteem. The fact that the growth of entrepreneurial self-efficacy predicts IEO behaviour, change, and action was reiterated in the study of Awotunde and Van Der Westhuizen (2021:476). Because young individuals, especially university students, find it challenging to pursue entrepreneurship as an alternative career due to lack of IEO, capital, networking, and mentorship the study of Msosa and Radebe (2022:58) found that there are positive and significant correlations existing between individual preferences, perceived behavioural control, individual attitude, and intention to start a business.

Global researchers, on the other hand, have also noted the necessity and significance of conducting additional research on IEO in relation to students at HEIs. The following topics were investigated by international researchers.

According to Koe (2016:3), one key justification for conducting more research on IEO is the effect of IEO on individual students' attitudes, behaviours, and aspirations to start their own businesses. As a result, IEO is crucial for setting up the framework for small and medium-sized businesses. Therefore, by providing students with entrepreneurship education, IEO can be

improved. Hence, the findings of Frunzaru and Cismaru (2018:1973) suggests that students who got entrepreneurial education have higher IEO and aspirations toward business compared to students who did not. Consequently, IEO is a crucial and determining element in educational preparation for a variety of possibilities, including professional decisions and ventures in business (Aggarwal and Chauhan 2022:4). Therefore, to take advantage of the business opportunities, students with higher IEO are more confident and more inclined to do market research and evaluate the business environment (Emani *et al.* 2022:4).

It is evident from the above findings that there is slight difference in the work done by the South African researchers in comparison to the work done by their international counterparts. The following section will discuss the gaps identified on IEO research amongst students at HEIs that need further investigation.

#### **5.4 RECOMMENDATIONS FOR FUTURE STUDY**

The preceding section identified, discussed, and compared the significant findings from the literature with the empirical results of this current study. It has been noted that there are similarities in the findings and that there is overlap between the investigations. This section provides recommendations and discussion on avenues that need further investigation on IEO amongst students at HEIs in South Africa.

To evaluate the effectiveness of entrepreneurial education future research should determine if students who participate in entrepreneurial education launch their own businesses. Investigating and keeping track of the success stories of students who received entrepreneurship education and went on to launch their own enterprises is also crucial in measuring the effectiveness of entrepreneurial curriculum provided by HEIs. By assessing and measuring the success of entrepreneurial education based on the curriculum offered by HEIs, HEIs will be better able to identify areas for improvement in their curriculum and pedagogy that can better help students launch successful enterprises. When conducting future research on the topic of the current study, it is recommended that a larger sample of data from South African universities and other regions in the country be included in the investigation. Through increasing the sample size, the population will be better represented, which will result in more accurate results. Future studies should consider longitudinal study approaches to evaluate the

efficacy of entrepreneurial programs to ascertain whether students who participated in the entrepreneurial programs are starting their own businesses more frequently. Further investigation into the methods in which entrepreneurial self-efficacy, IEO, entrepreneurial intent, and entrepreneurial action might enhance continued development and continued success of new businesses by South African university students is recommended.

Therefore, future research should also focus on a comparison of student entrepreneurial preparedness across various HEIs to help determine the variations in important characteristics perceived as antecedents of IEO by students from different institutions. Finally, further investigation on HEIs' instructional strategies to incorporate systemic action learning research models into their curricula. Students will be better prepared and equipped to start their own businesses if systemic action learning is incorporated into the curriculum for entrepreneurial education.

## **5.5 CONTRIBUTION OF THE STUDY**

To provide a narrative literature review of past research on the IEO among students in South African higher education institutions was the aim of this study. The current study has added to the body of information on IEO among students generally and at HEIs, with a focus on providing insights into IEO among students at HEIs conducted in South Africa. Consequently, this study identified gaps in IEO research among students at HEIs and provided insightful information about the developments.

## **5.6 LIMITATIONS**

Limitations of the current study are briefly discussed. The database used for the narrative literature review was Google Scholar, and it was only able to access published business journals. The study's duration was insufficient to provide the researcher enough time to draw different articles from other databases as well. Based on these constraints, it is suggested that future study broaden its scope to include master's theses, doctorate dissertations, conference papers from government platforms and books on IEO research conducted by students at HEIs.



These sources can offer a more comprehensive and precise depiction of the situation of IEO among students at HEIs today. Additionally, employing multiple search engines would enable a wider range of results because different search engines may return different results when given the same search criteria.

## **5.7 CONCLUSION**

There is still work to be done in the field of IEO amongst students at HEIs in South Africa. The gaps identified can be used as a lead and guidance on which areas to explore. It has been determined that entrepreneurship education plays a significant part in helping students develop IEO. Therefore, HEIs should routinely evaluate how well their curriculum and teaching strategies are preparing students to start their own businesses.

Additionally, the researcher derived substantial benefits from the study as well, having developed their writing, research, and analytical skills, capacities, and competencies. When the researcher embarks on any future research endeavours, the abilities and information acquired during the study will be useful.

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<https://www.igi-global.com/dictionary/information-system-projects-for-higher-education-management/>

APPENDIX 1: TURNITIN REPORT

Final Draft of 1-5

ORIGINALITY REPORT



PRIMARY SOURCES

1	Submitted to Nelson Mandela Metropolitan University Student Paper	3%
2	busman.mandela.ac.za Internet Source	2%
3	researchspace.ukzn.ac.za Internet Source	1%

**APPENDIX 2: ETHICAL CLEARANCE**

**SECTION B – STUDENT AND RESEARCH PROJECT DETAILS**

<b>Student name &amp; surname</b>	<b>NOKUTHULA CYNTHIA JANTJIES</b>
<b>Student number</b>	<b>197324940</b>
<b>Study title</b>	<b><i>A NARRATIVE LITERATURE REVIEW OF INDIVIDUAL ENTREPRENEURIAL ORIENTATION RESEARCH AMONGST STUDENTS AT HIGHER EDUCATIONAL INSTITUTIONS IN SOUTH AFRICA.</i></b>
<b>Year of registration</b>	<b>2023</b>
<b>Qualification</b>	<b>BCOM HONOURS IN BUSINESS MANAGEMENT</b>
<b>Department</b>	<b>DEPARTMENT OF BUSINESS MANAGEMENT</b>
<b>Supervisor</b>	<b>PROF. ELMARIE VENTER</b>

**SECTION C – ETHICS CRITERIA**

In completing my research project, I hereby acknowledge that I have read and understand the following important considerations as they apply to my study. I indicate this by placing a tick next to each statement.

I acknowledge that my study is based on the analysis of secondary data and that the following conditions apply:

1.	There are no human subjects/participants/respondents in my study and as such there will be no collection and use of data from human subjects/participants/respondents through administering/distributing any questionnaire/survey or by holding any form of interview.	✓
2.	As there are no human subjects/participants/respondents in my study, it does not pose any risk of harm, embarrassment, or offence, however slight or temporary, to any human participant, third parties or communities at large.	✓
3.	As there are no human subjects/participants/respondents in my study, it will not utilise human subjects defined as ‘vulnerable’ in terms of age, physical characteristics and/or disease status.	✓
4.	The secondary data that will be utilised in this study does not require the consent of any institutional or government authority established to protect vulnerable people.	✓
5.	The secondary data that will be utilised for this study does not require access to data from any existing, stored repository (e.g., school, institutional or university records) that can be linked to human subjects.	✓

It is acknowledged that both supervisor and student have given the study the necessary research ethical consideration and confirm that full ethics approval is not required.



**APPENDIX 2: ETHICAL CLEARANCE**

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15 May 2023

\_\_\_\_\_  
**SUPERVISOR(S)**


\_\_\_\_\_  
**DATE**



15 May 2023

pp\_\_\_\_\_  
**HEAD OF DEPARTMENT**

\_\_\_\_\_  
**DATE**




\_\_\_\_\_  
**STUDENT(S)**

15 May 2023

\_\_\_\_\_  
**DATE**

**APPENDIX 3: NMU INSTITUTIONAL REGULATORY CODE**

D\_739\_10\_(12-11-  
2010\_12h29)

 <p style="text-align: center;"><b>INSTITUTIONAL REGULATORY CODE (IRC)</b> <b>(Policies, Procedures, Rules etc.)</b></p>						
<i>To be completed by initiator of policy/policy owner:</i>						
<b>1. POLICY TITLE:</b>	<b>POLICY ON RESEARCH ETHICS</b>					
<b>2. FIELD OF APPLICATION:</b> <small>(All persons to whom policy applies)</small>	All staff and students engaged in research activities, research associates, external researchers					
<b>3. COMPLIANCE OFFICER(S):</b> <small>(Persons responsible for ensuring policy implementation)</small>	Research project leaders, study leaders, promoters, HODs, Executive Deans, Directors of Research and DVC:R&E					
<b>4. STAKEHOLDER CONSULTATION</b> <small>(State the stakeholder group/s consulted during policy formulation/revision)</small>	Senate, RTI Committees, Research Ethics committees					
<b>5. DESIGNATION OF POLICY OWNER:</b> <small>(Person responsible for maintaining policy)</small>	DVC: R&E/Director: Research Capacity development					
<b>6. NAME OF POLICY OWNER:</b>	Prof. T Mayekiso/Dr B Pretorius					
<b>POLICY HISTORY</b> <i>(To be completed by policy owner)</i>						
Decision Date <small>(Compulsory)</small>	Status <small>(New/Revised/No Changes)</small>	Implementation Date <small>(Compulsory if "new" or "revised")</small>	Approving Authority <small>(If "new" or "revised". N/A if no changes)</small>	Resolution Number <small>e.g. 07/1110.2 (Minute number. N/A if no changes)</small>	Policy Document Number <small>(e.g. D/.../07 N/A if no changes)</small>	Pending date for next revision <small>(Compulsory)</small>
1 Dec 2010	NEW	1 Jan 2011	Council	C10.57.3.2.1.1	D/739/10(12-11-2010_12h29)	1 January 2014

## APPENDIX 3: NMU INSTITUTIONAL REGULATORY CODE

<b><i>For office use only</i></b>						
<b>SUBJECT</b> (Broad policy field):			Research, Innovation and Engagement			
<b>SUBJECT NUMBER:</b>			400			
<b>CATEGORY</b> (Policy sub-field):			Research Ethics			
<b>CATEGORY NUMBER:</b>			404			
<b>IRC NUMBER:</b>			404.02			

### NMMU POLICY ON RESEARCH ETHICS

#### 1. PREAMBLE

The Nelson Mandela University acknowledges the need for excellence in research and scholarly endeavour and commits itself to conducting such activities with the utmost integrity. The *Policy on Research Ethics* recognises the inherent academic and intellectual freedom associated with institutions of higher learning which enables the University to fulfil its core mission of generating cutting-edge knowledge. The policy aims to promote awareness of fundamental ethical standards, principles, and practices in conducting research with both human and animal subjects.

This policy is to be read in conjunction with the *Code of Conduct for Researchers at Nelson Mandela University* (IRC 404.01).

#### 2. DEFINITIONS<sup>1</sup>

2.1 ‘Academic freedom’ refers to the right, without constriction by doctrine, to freedom of teaching and discussion, freedom in carrying out research and disseminating and publishing the results thereof, researchers’ freedom to express freely their opinion about the institution or system in which they work, freedom from

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<sup>1</sup> Unless otherwise stated definitions taken or adapted from UNESCO, *Recommendation concerning the Status of Higher-Education Teaching Personnel*, Paris, 1997, Chapter VI

institutional censorship and freedom to participate in professional or representative academic bodies.

2.2 ‘Animal subject’ refers to “live sentient non-human vertebrate, including eggs foetuses and embryos that is: fish, amphibians, reptiles, birds and mammals, and encompassing domestic animals, purpose-bred animals, farm animals, wildlife and higher invertebrates such the advanced members from the *Cephalopoda* and *Decapoda*<sup>2</sup>”.

2.3 ‘Ethics’ are defined as the rules of conduct recognised in respect to a particular class of human actions or a particular group and are concerned with how morally accepted outcomes can be achieved in specific situations. Thus, in the context of this policy ethics focuses on the principled actions of the community of researchers at the Nelson Mandela University who conduct research.

2.4 An ‘Ethics committee’ in the context of this policy refers to an independent review board constituted of a reasonable number of members, who collectively have the qualifications and experience to review and evaluate the science and ethics of proposed research studies.

2.5 ‘External research’ includes any research undertaken among staff and/or students of the NMMU where the principal investigator is not a Nelson Mandela University employee or student.

2.6 A ‘human subject’ generally connotes an individual about whom an investigator conducting research obtains data through intervention or interaction with the individual or identifiable private information.

2.7 ‘Institutional research’ in the context of this policy refers to research among staff and/or students of the NMMU and includes “a cluster of activities that supports decision-making, policy analysis, quality assurance, effective management, projections and planning in higher education”<sup>3</sup>.

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<sup>2</sup> South African National Standards Guidelines 2008

<sup>3</sup> Southern African Association for Institutional Research (SAAIR) website

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- 2.8 ‘Primary responsible person/PRP’ refers to the permanently appointed Nelson Mandela University staff member who assumes responsibility for a research protocol or proposed study.
- 2.9 ‘Principal investigator/PI’ refers to the researcher (that is the staff member, research associate, student, or external researcher) who is responsible for implementing the research.
- 2.10 ‘Researchers’ includes all persons within the Nelson Mandela University (staff, undergraduate and postgraduate students) as well as collaborators/partners, research associates, and external researchers who undertake research at and/or through the Nelson Mandela University.
- 2.11 ‘Research for degree purposes’ connotes all research undertaken by students and staff of the Nelson Mandela University towards attaining a qualification or degree.
- 2.12 ‘Research for non-degree purposes’ pertains to research undertaken by individuals or collaboratively by groups of researchers and includes contract research, institutional research, and research by external bodies or individuals.
- 2.13 ‘Staff’ refers to all categories of employees of the Nelson Mandela University whether permanently appointed or appointed on contract.
- 2.14 ‘Stakeholders’ includes all parties who have a material interest in the implementation and outcome of research and includes the Nelson Mandela University community, the communities in which we undertake research, the specific participants in a study, sponsors, and the broader research community.
- 2.15 ‘Student’ includes all *bona fide* undergraduate students and postgraduate students registered for Honours, Postgraduate Diplomas, Master’s by coursework and treatise, Masters by research and Doctoral degrees.
- 2.16 ‘Vulnerable Persons or Groups’ refers to individuals or groups who have “... substantial incapacity to protect their own interests owing to such impediments as lack of capability to give informed consent, lack of alternative means of obtaining medical or psychological care or other necessities or being a junior

or subordinate member of a hierarchical group”<sup>4</sup>. Without restricting the generality of the meaning of ‘vulnerable’ vulnerable groups are defined by the National Health Research Ethics Committee<sup>5</sup> and CIOMS Guidelines as including, amongst others:

- persons under the age of 18 years (children and adolescents)
- institutionalised persons
- the elderly
- persons with mental or physical incapacity
- persons from a stigmatised or minority group
- groups or communities who are economically or socially disadvantaged.
- persons in a dependent relationship (for example, employees, students, patients)
- persons traumatised due to exposure to physical, psychological and/or emotional abuse or trauma).

### **3. PURPOSE OF THE POLICY**

The policy seeks to sustain an environment that supports vibrant research, scholarship and innovation by creating an enabling framework that guides the conduct of staff, students and relevant stakeholders in undertaking research activities. It recognises that sound ethical practice goes hand in hand with scientifically valid research and effective teaching. The purpose of the policy is to:

- inspire researchers at Nelson Mandela University to maintain shared ethical standards in all research activities at the University.
- engender respect for the dignity and rights of all.
- articulate ethical norms that transcend disciplinary boundaries.
- legitimise discussion of ethical issues

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<sup>4</sup> Council for International Organizations of Medical Sciences (CIOMS) Guidelines

<sup>5</sup> National Health Research Ethics Council website  
<http://www.doh.gov.za/nhrec/norms/ethics.pdf>

- describe the structures and mandates for the ethical review of research conducted at Nelson Mandela University

#### **4. VALUES AND PRINCIPLES**

It is acknowledged that ethics of research are developed and refined within an ever-evolving societal context, elements of which include the need for research and the research community, moral imperatives and ethical principles, and the law. The *Policy on Research Ethics* is thus embedded in the values enshrined in the Constitution of the Republic of South Africa (and relevant legislative instruments) and upholds the basic principles and values that pertain to all forms of research.

##### **4.1 Constitutional Values**

The Bill of Rights (Chapter 2 of the Constitution) enshrines the rights of all people and affirms the democratic values of human dignity, equality and freedom. Section 12 (2)(c) specifies the right of the individual “not to be subjected to medical or scientific experiments without their informed consent”. Section 16 (1)(d) states that individuals have the right to freedom of expression which includes “academic freedom and freedom of scientific research”. Section 24 refers to the rights of individuals “to an environment that is not harmful to their health or well-being; and to have the environment protected for the benefit of present and future generations ...”.

##### **4.2 Principles and Values of Research**

The fundamental ethical issues and principles in research are common across the social sciences and humanities, the natural sciences and engineering, and the health sciences. The approach taken in this policy framework is to guide and evoke thoughtful actions and ethical decision making based on principles which express acknowledged research values and the integrity of the Nelson Mandela University research community.

**4.2.1 Respect:** This principle should permeate the conduct of all researchers and refers to operating in accordance with ethically accepted standards in relation to themselves, their colleagues, the wider scientific and academic community, their human, and animal subjects as well as the environment and society. This includes respect for diversity and the specific responsibilities of researchers in their interaction

with research participants of different languages, cultures and capacities/abilities, different species, and the environment.

Included in the principle of respect is respect for human dignity which entails ethical obligations toward vulnerable persons or groups (as defined in 2.16). Vulnerable persons are entitled, on grounds of human dignity, caring, solidarity and fairness, to special protection against abuse, exploitation, or discrimination. Ethical obligations to vulnerable individuals and groups translate into special procedures to protect their interests.

**4.2.2 Free and Informed Consent:** Individuals are generally presumed to have the capacity and right to make free and informed decisions. Respect for persons thus means respecting the exercise of individual consent and translates into the dialogue, process, rights, duties, and requirements for free and informed consent by the human subject.

By the same token, animal subjects must be treated humanely because they cannot give consent.

**4.2.3 Respect for Privacy and Confidentiality:** Standards of privacy and confidentiality protect the access, control and dissemination of personal information and help to protect mental or psychological integrity. They are thus consonant with values underlying respect for privacy, confidentiality, and anonymity.

**4.2.4 Beneficence and non-malificence:** Researchers have an obligation to do no harm (non-malificence) as well as to ensure that their research endeavours aim at overall good (beneficence). In the planning and execution of a study, the researcher should always take into consideration the ethical acceptability and the foreseeable consequences of the research as this indirectly or directly affects human beings and animals. This implies a cost benefit analysis to ensure a balance between risks and benefits. Such an analysis needs to include human/animal discomfort/risks, and impact on the environment.

**4.2.5 Respect for Justice and Inclusiveness:** Justice connotes fairness and equity in terms of fair methods, standards, and procedures. It is also concerned with the distribution of benefits and burdens/harms of research. On the one hand, this means



that no segment of society should be unfairly burdened with the harms of research and on the other hand, imposes duties to neither neglect nor discriminate against individuals and groups who may benefit from advances in research.

4.2.6 **Scientific Integrity:** Research undertaken should be sound in terms of methodology and scientific validity and be conducted by researchers who are technically competent. Thus, recommendations may be made by the Research Ethics Committee to the PRP with a view to strengthening the quality of a proposed study.

4.2.7 **Respect for the Natural Environment:** It is acknowledged that research impacts on the natural environment and thus, researchers should evaluate the potential impact of their research on the natural environment, and declare the possible impact, however unlikely. Where remedies are required, such plans should form part of the research design and execution.

## **5. RESPONSIBILITY FOR ETHICS**

5.1 It is the responsibility of the Nelson Mandela University to ensure that there is an accredited structure for the ethical review of research in accordance with relevant legislation.

5.2 The Nelson Mandela University is further responsible for ensuring appropriate and relevant training in respect of the members who serve on its Ethics Committees and within the broader community of researchers (staff and students).

## **6. STRUCTURES FOR THE ETHICAL REVIEW OF RESEARCH**

To fulfil its responsibilities regarding the ethical conduct and ethical review of research the formal review of research ethics occurs at two levels at the Nelson Mandela University:

6.1 Firstly at the faculty level within the Postgraduate Studies Committee (FPGSC)

and

6.2 Secondly, on the institutional level. At the institutional level ethics review is undertaken by two separate committees namely, the Research Ethics Committee - Human (REC-H) and the Research Ethics Committee – Animal

(REC-A). Both are sub-committees of the University's Research, Technology & Innovation Committee (Nelson Mandela University RTI Committee).

## **7. RESPONSIBILITIES OF ETHICS REVIEW STRUCTURES**

The responsibilities of the various committees are as follows:

7.1 *FPGSC's* are responsible for reviewing the proposals/protocols of all research projects whether for academic (degree purposes) or non-degree purposes.

7.2 *The Research Ethics Committee (Human) [REC-H]* assumes responsibility for the review of the ethical considerations related to proposals/protocols for research for degree and non-degree purposes involving human subjects which investigate contentious issues or target vulnerable groups as defined in the Committee's Information Document: Process and Codes.<sup>6</sup> This committee also assumes responsibility for the ethics clearance for institutional and external research involving the staff and students of the University.

7.3 *The Research Ethics Committee (Animal) [REC-A]*: is charged with: monitoring the treatment of animals used in research and teaching at Nelson Mandela University, reviewing all protocols involving animal use in order to ensure that they are in accordance with acceptable ethical and scientific standards, and ensuring that all aspects of the care and use of animals in research and teaching comply with national and international standards and norms.

## **8. MANDATES OF ETHICS REVIEW STRUCTURES**

The mandates of the committees listed above are as follows:

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<sup>6</sup> <http://my.nmmu.ac.za/default.asp?id=539&bhcp=1>

- 8.1 To collaboratively develop a policy that promotes the integrity of researchers and complies with relevant national and international regulations and norms for the ethical conduct of research, scholarship, and innovation.
- 8.2 To develop appropriate terms of reference that will guide the structuring and functioning of committees as well as the procedures to facilitate the implementation of the *Policy on Research Ethics* at the Nelson Mandela University.

**9. RESPONSIBILITY FOR OBTAINING ETHICS CLEARANCE**

- 9.1 Ethics clearance is required for all research through the appropriate structures outlined above *prior* to the commencement of data collection and *cannot be issued retrospectively*.
- 9.2 All research proposals/protocols and treatises/dissertations/theses should include a section on ethical considerations, where appropriate.
- 9.3 In line with the mandates and the terms of reference of the FPGSCs and the RECs, researchers are required to adhere to the procedures set out by these structures and provide all relevant documentation to inform the review of an application for ethics clearance.
- 9.4 The responsibility for the submission of an application rests jointly with the primary responsible person/PRP and the principal investigator/PI.
- 9.4.1 The supervisor/promoter, as PRP, bears responsibility for making the student (as PI) aware of the policy and procedures for obtaining the necessary ethics clearance for research to be undertaken, and for ensuring that the student is deemed competent to undertake the proposed research.
- 9.4.2 The PI is responsible for completing and submitting the relevant documentation as per the rules and procedures of the Nelson Mandela University with the approval of the research supervisor/PRP. The PI is furthermore responsible for his/her conduct in relation to the final implementation of the research process for which approval has been granted.

9.4.3 In the event of any deviation from the approved protocol, it is the joint responsibility of the PRP and PI to bring such amendments to the attention of the relevant REC or FPGSC Committee. Failure to do so would constitute misconduct.

#### **ACKNOWLEDGEMENTS**

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