The influence of ethical leadership on project success in educational entrepreneurial ventures at a South African University of Technology

by

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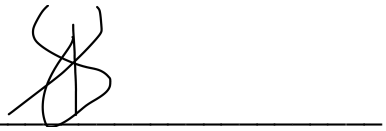
DECLARATION

I, Samkeziwe Esther Nkomzwayo, declare that the contents of this dissertation/thesis represent my unaided work and that the dissertation/thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.



Signed

13 September 2022

Date

ABSTRACT

The desire for educational entrepreneurship in Africa has increased over the past decade. Leaders in education must also uphold ethical principles and have a genuine desire to help students complete their education. Educational entrepreneurship in universities and colleges only succeeds when it is applied ethically; otherwise, it harms the students who receive the educational programmes. In educational institutions, ethical leadership is the practice of having a favourable impact on educational leaders' decisions that are right and appropriate for the greater societal and economic benefit. Therefore, ethical educational leaders are more likely to respect and treat their students fairly by considering their needs and rights. Unethical leadership practices have had the greatest impact on educational entrepreneurship projects, particularly those at state universities.

Higher education institutions suffer reputational harm when unethical educational leaders engage in the creation, selection and launch of academic programmes. The impact of ethical leadership on project success in entrepreneurial educational programmes at South African universities is, therefore, intriguing to comprehend. The main objective of this study is to investigate how ethical leadership affects project success in educational entrepreneurship initiatives at a South African University of Technology.

The study's conclusions are presented, along with ideas for additional research directions and advice on how to improve project success rates through ethical leadership. One of the study's main findings is that the management of the faculty was pleased with the success of the projects and programmes it had started in the field of education. Thus, it is likely that the students will complete their degrees on time. It is recommended that university administrators implement effective employee feedback systems to improve working conditions. Furthermore, all faculty members should receive formal training and induction on how to "do the right thing the first time" to prevent underperformance.

Keywords: ethical leadership, entrepreneurship, educational leaders, entrepreneurial projects, entrepreneurial education intention, project success.

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Father God, thank You.

DEDICATION

This dissertation is dedicated to my late daughter Nneoma-Theresa Buhlebenkosi Okorie, my grandmother Anna Lebese, my parents Patrick and Emily Nkomzwayo, my husband Abosi Okorie and my loving children Andile, Oluchi, Rhema and Zoe. Thank you for believing in me and for your prayers.

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CHAPTER 1

1.1 Introduction to the study

Africa's desire for educational entrepreneurship has surged over the last decade. Man (2010:1-2) asserts that educational entrepreneurship is the development of social entrepreneurship in the education system. This implies that the educational entrepreneur knows the system's and students' demands. According to Herbert (2011:5-6), educational leaders who are educational and social entrepreneurs need to be ethical leaders with the real intention to assist students to complete their studies. As such, educational entrepreneurship in universities and colleges pays off only if it is used ethically, otherwise it damages the recipients of the educational programmes (Louw, 2015:132-134).

According to Brown and Treviño (2014:587), ethical leadership means to demonstrate suitable behaviour via personal acts and interpersonal interactions with followers through two-way communication and reinforcement, with the leader acting as a role model. Ethical leadership in educational institutions is a practice of having a positive effect on educational leaders' decisions that are right and suitable for the greater societal and economic benefits (OECD, 2020:1-3). Therefore, educational leaders who act ethically are more likely to regard their students' needs and rights and treat them fairly.

The need for ethical leadership in educational entrepreneurship programmes was emphasised by Groenewald and Donde (2017:14-52) who found that unethical behaviour has a costly impact on any organisation and the society. Educational entrepreneurship projects, particularly those at state universities, have been hit the hardest by unethical leadership practices (Louw, 2015: 132-134; Dladla, 2020:1-24). Louw (2015: 132-134), found out that South African business schools are not ethically conscious enough to contribute to better business ethics. Unethical educational leaders involved in the formulation, selection and start of academic programmes cause reputational damage to institutions of higher learning (Dladla, 2020:1-24). Therefore, it is intriguing to understand the influence of ethical leadership on project success in entrepreneurial educational programmes at South African universities. This study is introduced primarily through the research's background, objectives and proposed methods.

1.2 Background

Researchers show there is a need for educational entrepreneurship as it is a significant driver of innovation, competitiveness and economic growth (Holmgren & Berglund, 2006; Herbert, 2011:5-6; OECD, 2020:1-3; Louw, 2015: 132-134). According to OECD (2020:1-3), educational entrepreneurship is an effort aimed at changing the public education system and how it educates its clients, mainly students. As a result, the risks are the same in any other entrepreneurial endeavor in which educational entrepreneurship develops a new product (Louw, 2015:132-134).

Man (2010) summarises that educational entrepreneurship is the development of social entrepreneurship in the education system. Thus, educational entrepreneurs are part of the education system and are responsible for creating academic programmes, products, services, or technologies. Educational entrepreneurs are said to be competent at actively seeking out challenges in the educational environment, working to develop innovative solutions to current problems in the public education system and intend to create an actual change in the system (Louw, 2015: 132-134). According to Herbert (2011:5-6), educational leaders who are social entrepreneurs should assist students to complete their studies equipped for the twenty-first century job requirements. Thus, educational entrepreneurship implies knowing what the education system needs.

The OECD argued that entrepreneurship and innovation are crucial for economic growth and for addressing global social issues. In its study, the organisation urges member nations to foster people's creativity and innovation and to develop entrepreneurial culture (OECD, 2020:1-3). The Department of Higher Education and Training in South Africa is also cognisant of the importance of education in fostering an entrepreneurial and innovative culture (DHET, 2021). As such, educational entrepreneurship in education pays off only if it is used ethically, otherwise, it damages the recipients of the educational programmes (Louw, 2015: 132-134).

Despite the global increase in educational entrepreneurship projects (EEP), most fail due to cost and scheduling overruns (Rezvani & Khosravi, 2018:115-117). With the rise of education and entrepreneurial ventures, there are concerns regarding the ethical decision-making mechanisms used by leaders at higher educational institutions (Louw,

2015:132-134). This is because today's educational leader's role requires constant exposure to new conditions and problems (Brown & Worthington, 2017:352). A project's success depends on teamwork and purposeful activities led by an ethical leader. Project management success is increased by a team leader who sets high standards and makes ethical judgments that are followed by everybody. These principles foster confidence and better decision-making for all stakeholders (Morrison, 2011:374-381; Groenewald & Donde, 2017:14-52; Musawir, Serra, Zwikael & Ali, 2017: 1658-1660).

There are specific elements of internal ethical leadership that is honesty, fairness, responsibility, respect, bravery and compassion/kindness that are crucial qualities for an ethical leader. According to the PMI code of professional conduct (2013), the code of professional conduct only considers four specific elements that is fairness, honesty, responsibility and respect as crucial elements for an ethical leader. These ethical elements govern proper project/programme decisions from inception to completion. Additionally, an ethical leader ought to show bravery and compassion in addition to these four basic values. Louw (2015:132-134) posited that following the code of ethics and professional conduct leads to successful university educational programme outcomes. Thus, when presented with an ethical dilemma, the PMI ethical decision-making framework may help guide the educational leader.

As a result, ethical leadership is vital for entrepreneurs as it improves productivity, service quality, decision-making, trust, communication and stakeholder flexibility. Therefore, an educational leader's actions and communication strategies are the project's success steppingstone. Without these measures, every project is more prone to challenges and problems (Moore *et al*., 2019:123). A South African university of technology's entrepreneurial educational ventures are being conducted against this backdrop as part of this research, which aims to examine the impact of ethical leadership on project success.

1.3 Problem statement

Even though some researchers have focused on the relationship between stakeholder-oriented ethical leadership and project success factors (Joslin & Müller, 2016b:613; Musawir *et al*., 2017:1658-1660; Biesenthal & Wilden, 2014:1291-1308; Müller &

Lecoeuvre, 2014:1346-1357), it is still unclear how ethical leadership dimensions influence the success of educational entrepreneurship projects/programmes. Louw (2015:132-134) claims South African educational leaders are not ethically cognisant of students' rights and are not excellent social entrepreneurs. As such, these educational leaders may not have the capacity to initiate educational ventures for students to start and complete their degrees amicably without challenges in the delivery of lectures and marking of their examinations. Thus, educational entrepreneurship at universities and colleges may not pay off due to unethical behaviour undertaken at such universities.

Because of unethical leadership practices (irregular programme development, starting, selection, transfers and terminations), the success of many educational entrepreneurial ventures or programmes have been backtracked at state universities (Louw, 2015:132-134; Dladla, 2020:1-24). It has been claimed that some academic programmes in South African universities are corruptly introduced, done, or executed, due to a lack of unethical practices by educational leaders (Louw, 2015:132-134). This reality could have made some educational programmes revoked due to a lack of ethical entrepreneurship skills. The problem is that unethical leadership causes educational leaders to fail to achieve deliverable outcomes of educational programmes. A series of rhetorical questions remain unanswered, as it is unclear whether the failure is due to issues other than lack of ethical leadership. If the failure of educational programmes is due to lack of ethical leadership, what problems do university leaders face in implementing ethical leadership for higher education? Thus, it is necessary to find answers to the influence of ethical leadership on project success in entrepreneurial educational ventures at South African universities.

1.4 Rationale and significance of the study

Given the highlighted importance of ethical leadership to the success of educational entrepreneurial projects mentioned in the background, there are expectations for the satisfaction of the stakeholders, particularly those of large complex educational entrepreneurial projects (Flyvbjerg, 2014:6; Pinto, 2014:376-387; Serrador & Pinto, 2015:1040-1051; Joslin & Müller, 2015:613). The proposed study could be meaningful in establishing whether ethical behaviour manifested in decision-making and ethical leadership is influential on project success. In particular, the proposed study could be

beneficial to universities, colleges, project managers and vice chancellors in establishing the optimal control that results in improved EEP success, thereby responding to the call by Joslin and Müller (2016a:1043-1056) for further research to investigate the form and nature of the relationship between project success dimensions and ethical leadership.

1.5 Aim and objectives of the study

The main aim of this study is to examine the influence of ethical leadership on project success in educational entrepreneurship projects in a university in South Africa. Therefore, the sub-objectives of this study are as follows:

1. To establish the influence of ethical leadership on the success of the educational entrepreneurship projects of the university.
2. To determine the challenges that educational leaders face in implementing ethical leadership practices when undertaking educational entrepreneurship projects at the university.
3. To recommend ways of addressing challenges that inhibit compliance to ethical leadership practices of educational entrepreneurship projects at the university.

1.6 Research questions

The broad research question is: What is the influence of ethical leadership traits on project success in educational entrepreneurship projects? Therefore, the specific research questions for the study are expressed as follows:

1. What is the influence of ethical leadership on the success of the educational entrepreneurship projects of the university?
2. What are the challenges that educational leaders face in implementing ethical leadership practices when undertaking educational entrepreneurship projects at the university?
3. What recommendations can be given to address challenges that inhibit the compliance with ethical leadership practices of educational entrepreneurship projects at the university?

1.7 Literature review

The literature relating to the following concepts will be reviewed in this section: (a) educational entrepreneurial projects (b) ethical leadership (c) project success. The review will be conducted in the context of educational entrepreneurial university environment.

1.7.1 Educational entrepreneurial projects

According to Man (2010), an entrepreneurial endeavour is to develop a product, service, or event that benefits a larger target demographic than the project participants (for example, a school, community, family, or group). According to the OECD (2020:1-3), educational entrepreneurship is an initiative aimed at transforming the public education system and the way it educates its primary consumers, students. Thus, as with any other entrepreneurial endeavour, educational entrepreneurship entails the development of a new programme/project that needs time, effort, financial risk, psychological risk and societal risk (Louw, 2015: 132-134).

According to Man (2010), educational entrepreneurship is the growth of social entrepreneurship inside the educational system. Educational entrepreneurs are integral to the educational system because they develop academic programmes, services and technology. Educational entrepreneurs are also defined as those who are capable of actively searching out educational challenges, attempting to produce novel solutions to existing difficulties in the public education system and attempting to affect systemic change (Louw, 2015:132-134). Thus, educational entrepreneurship entails a thorough understanding of the system and students' requirements. Herbert (2011:5-6) asserts that educational leaders who are social entrepreneurs must help students to complete their studies equipped for the work needs of the twenty-first century.

According to OECD (2020:1-3), entrepreneurship in education is critical for economic growth and tackling global social challenges. The OECD advises member states to cultivate an entrepreneurial culture. However, educational entrepreneurship in education pays off only when used ethically; otherwise, it harms the educational programmes' beneficiaries (Louw, 2015: 132-134).

1.7.2 Ethical leadership

According to Brown and Treviño (2014:587), ethical leadership means demonstrating normatively acceptable behaviour via personal acts and interpersonal interactions and promoting it to followers through two-way communication, reinforcement and decision making. Leaders must foster an ethical workplace for all workers, convey ethical concerns, act as role models and produce responsible employees. Leaders who act ethically are more likely to regard their workers' needs and rights and treat them fairly (Louw, 2015:132-134). Ethical Leadership has internal factors that include honesty, justice/fairness, responsibility, respect, courage and kindness. The first four are from the PMI code of professional conduct (2013). These are crucial features for an ethical leader. Responsibility refers to the duty to take ownership of one's actions. Fairness requires leaders to behave without partiality, bias, self-interest, or prejudice. Honesty is an obligation to know the truth and act accordingly. Respect is the duty to show high regard for ourselves and others. Courage is the capacity to defend what is right (Joslin & Müller, 2015:1043-1044).

1.7.3 Project success

Project success can be seen as the achievement of a particular combination of objectives and subjective measures (Joslin and Müller, 2015:1043-1044). The integration of project success over a portfolio of investment projects results in project portfolio success. Project success is an important factor that keeps stakeholder expectations satisfied. In every sector of life, project success requires substantial anticipation for cost, time, scope and quality. The project success criteria are normally discussed in terms of implication, consequence, competency, effectiveness and sustainability. Project success has two aspects. The primary aspects include cost, time, quality and customer acceptance, whereas secondary aspects are new chances, strategic alignment and interruption.

Despite the growth in educational entrepreneurial projects implemented the world over, and given their lengthy durations, most large projects experience cost and schedule overruns and thus fail to meet their objectives (Flyvbjerg, 2014:6; Rezvani & Khosravi, 2018:115-117). Joslin and Müller (2016b:613-626) contend that measuring project success, project efficiency, organisational benefits, project impact, stakeholder

satisfaction and future potential should be assessed. Based on the above review, project success dimensions vary from project to project.

1.7.4 Impact of ethical leadership on the success of educational entrepreneurship

Along with the growth in educational entrepreneurial projects, there is an increasing concern about the efficacy of the decision-making mechanisms employed during the project life cycle (Oztemel & Gursev, 2020:127-182). Although some researchers have paid attention to the relationship between stakeholder-oriented ethical leadership dimension and project success factors (Joslin & Müller, 2016b:613; Joslin & Müller, 2015:1043-1044; Musawir *et al*., 2017:1658-1660; Biesenthal & Wilden, 2014:1291-1308; Müller & Lecoeuvre, 2014:1346-1357) and established the important role of ethical leadership in success, it remains unclear and inconclusive how the ethical leadership dimension influences/impacts project success.

According to Herbert (2011:5-6), educational leaders who are real entrepreneurs need to be ethical leaders who have the real intention of assisting students to complete their studies. As such, educational entrepreneurship in universities and colleges will be successful only if it is used ethically, otherwise it damages the recipients of the educational programmes (Louw, 2015:132-134). Therefore, educational leaders who act ethically are more likely to regard their students' needs and rights.

The need for ethical leadership in educational entrepreneurship programmes was emphasised by OECD, which argued that entrepreneurship is crucial for the successful tackling of global social issues. The organisation urges member nations to foster people's creativity to develop an entrepreneurial culture (OECD, 2010:1-3).

Unethical leadership is highly costly to any organisation and society (Groenewald & Donde, 2017:14-52). According to Rezvani & Khosravi (2018:115-117), with the rise of educational entrepreneurial ventures, there are concerns regarding the ethical decision-making mechanisms used by leaders at higher educational institutions. This is because today's educational leader's role requires constant exposure to new conditions and problems (Brown & Worthington, 2017:352). A project's success depends on teamwork and goal-oriented activities led by an ethical leader. Project management success is increased by a team leader who sets high personal standards and makes ethical

judgments that are followed by everybody. These principles foster confidence and better decision-making for all stakeholders (Morrison, 2011:374-381; Groenewald & Donde, 2017:14-52; Musawir, 2017: 1658-1660). Without ethical practices, every educational entrepreneurship project is more prone to challenges and problems (Moore et al., 2019:123).

Biesenthal and Wilden (2014:1291-1308) posited that ethical leadership aligns strategic objectives with project objectives. However, Biesenthal and Wilden (2014:1291-1308) were concerned about the definition of ethical leadership that lacks clarity due to the multitudes of contentious definitions of the concept. Musawir *et al*. (2017:1658-1660) agree with Biesenthal and Wilden (2014:1291-1308) on the overabundance of ethical leadership definitions provided by various authors, thus leading to the need for this research to further explore the possibility of breaking this concept into other valid variables to enhance validity and measurement.

Joslin and Muller (2016a:1043-1056) posited that ethical leadership is aligned with ethical decision-making. Given that good ethical decision-making is associated with positive firm performance, a direct relationship between ethical leadership and project success can be assumed. However, little research has been conducted on the relationship between ethical leadership principles (honesty, fairness, responsibility, respect, bravery and compassion/kindness) and project success (Brunet & Aubry, 2016:1596-1607; Bansal & Sharma, 2019:123-147; Felício, Rodrigues & Samagaio, 2016:87-101).

1.8 Research or conceptual framework

Based on the preliminary literature review, the following is a conceptual framework for the study.

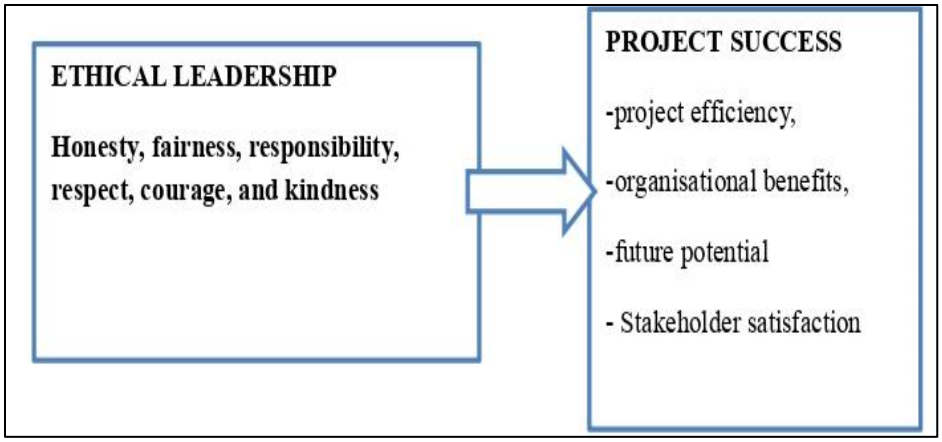

Figure 1-1: Conceptual framework of the study.

The above conceptual framework defines how the ethical leadership dimensions would directly impact the success of educational entrepreneurship projects. This framework has the following implications.

- Educational leaders who act ethically are more likely to regard their students' needs.
- Entrepreneurship is crucial for the successful tackling of global social issues.
- Educational entrepreneurship in education pays off only if it is used ethically, otherwise it damages recipients of the educational programmes.
- Without ethical leadership practices, every educational entrepreneurship project is more prone to challenges and problems.
- Ethical leadership aligns strategic objectives with project objectives.

Ethical decision-making is associated with positive firm performance and a direct relationship between ethical leadership and project success can be assumed.

1.9 Methods and materials of study

1.9.1 Research philosophy

According to Bell, Bryman and Harley (2018:46-74), research philosophy is a way of thinking about how to learn, interpret and use available information. A scientific inquiry may be founded on interpretivism, positivism, or pragmatism research philosophy. When the intention is objectivity, positivism philosophy is normally chosen. Interpretivism assumes that no way of thinking is naturally good or bad when interpreting views. On the

other extreme, pragmatics realise that truth might be contradictory (Creswell & Poth, 2016:65-100). Study philosophy is, therefore, a set of assumptions or viewpoints regarding a study topic. Thus, this study uses research philosophy to learn about the relationship between ethical leadership and project success. The study will use positivism philosophy by learning from the quantitative facts that the truth is out there in the world and ought to be collected using a suitable method. Positivism research philosophy will objectively compare and predict quantitative findings (Creswell & Poth, 2016:65-100). Positivism will take centre stage because it argues that science and reasoning can prove the truth (Saunders, Lewis & Thornhill, 2016:1-46). It describes variables (ethics leadership and project success) and relationships accurately. In this way, positivism predicts outcomes (project success) or establishes connections between ethical leadership and project success (Creswell & Poth, 2016:65-100).

1.10 Research design

Research design is a crucial guideline for conducting research. Bell, Bryman and Harley (2018:46-74) established descriptive, exploratory, correlational, causal and explanatory research designs. The study will adopt an explanatory and descriptive quantitative research approach. Descriptive research approaches help define “what exists" in terms of variables or circumstances. This study adopted the following method and the Chi-square tests were used for the age group and race to assess percentages. The exploratory factor analysis (EFA) was performed using principal component analysis to extract the factors followed by Varimax rotation: Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) criterion and Bartlett’s test of sphericity. One-way analysis ANOVA of variance test was performed to compare the age group, race and highest qualifications for all continuous variables. Fisher's exact test was used for a comparison of ethical leadership and project success by demographic variables. The exploratory data analysis for this investigation is confirmatory factor analysis (CFA) and was performed. A Varimax rotation method of analysis was used to evaluate the data reduction. Finally, Levene’s test for homogeneity of variances was used to evaluate whether the variance in scores is the same for each of the four independent groups. This descriptive research design presents systemic ethical leadership and entrepreneurial projects. An explanatory study

shows how one variable affects another. In this study how ethical leadership affects the success of entrepreneurial projects is explained.

1.11 Research Strategy

Gavin (2017:25) defines research strategy as a plan of action that leads and schedules the researcher. Ethnography, phenomenology, grounded theory, action research, case studies and surveys are some examples of these (Pranas, Jolita & Regina, 2018). This study's research strategy involves a single case study of the university and a survey. A case study approach will be undertaken by looking at the project's success in the educational entrepreneurial projects at the university. In a single case survey, a random sample of a population is examined to ascertain perceptions, attitudes, ideas, or viewpoints. The university employees will be polled on the effects of ethical leadership on the success of educational entrepreneurial projects. This is because faculty members are expected to serve as role models in an environment of academic freedom, which calls for their full commitment to teaching, research, and community service, and ethical principles and values are crucial in higher education institutions (Katundano, 2019:24). The single case study survey is particularly efficient, allowing researchers to acquire vast amounts of information at a low cost. Because respondents can be trusted to offer genuine information, the single case study survey is ideal.

1.12 Research approach

The researcher seeks to understand the impact of ethical leadership traits on project success in educational entrepreneurship projects. A deductive approach will be adopted, which requires the use of descriptive statistics outlined above as guided by the findings from the literature review. The deductive approach has the following benefits: the ability to quantify concepts, the ability to generalize research findings, and the ability to explain causal relationships between concepts and variables (Borgstede & Scholz, 2021:605191). This approach starts by proposing a theory and then performing a test using the research strategy above and then finally modifying the theory by considering new findings (Saunders, Lewis & Thornhill, 2016:1-46).

1.13 Data collection/fieldwork

After pre-testing the questionnaire, the questionnaire will be disseminated electronically via Survey Monkey to staff members of the faculty.

1.14 Data analysis

The data analysis will help the researcher address the research problem. Thus, this will enable answering quantitative research questions posed in Chapter 1. This study will use descriptive statistics. Descriptive statistics use descriptive coefficients to assess central tendency or variability (Saunders, Lewis & Thornhill, 2016:1-46). Descriptive statistics include measures of central tendency and variability. Standard deviation, variance, minimum and maximum variables, kurtosis and skewness are examples of variability measures (Saunders, Lewis & Thornhill, 2016:1-46). Inferential statistics will also use regression to derive conclusions on the impact of ethical leadership on entrepreneurial project success. The computer-assisted analysis will use SPSS 27.

1.15 Envisaged data problems

Issues of missing data, suspicious response patterns (straight-lining or inconsistent answers), outliers and data distribution will manifest during data collection and examination (Hair, Ringle & Sarstedt, 2011:139-152). The independent construct of governance control might be viewed as sensitive, resulting in missing data. In instances of missing data on the instrument exceeding 5%, there is a need to remove the observation from the data file. Straightening, diagonal lining and alternative extreme pole responses are all possible suspicious response patterns expected (Prahlada, 2021). However, a visual inspection of the responses or the analysis of descriptive statistics such as the mean, variance and distribution of the responses per respondent allows for identifying suspicious response patterns (*ibid)*.

1.16 Ethical considerations

As per the requirements of the CPUT Ethics Committee, the research will seek ethical clearance once ready with a measuring instrument. As stated by Creswell and Poth (2016:65-100), ethical issues included obtaining permission from the human resource director of the institution being studied and the university. Consequently, the researcher

will seek to meet the university's ethical requirements for postgraduate studies and obtain the requisite gatekeeper's approval. The researcher will seek the consent of all respondents and ensure their anonymity and confidentiality by using pseudonyms to represent them. Furthermore, respondents will not be forced to register their names and surveys would be completed privately (Saunders, Lewis & Thornhill, 2016:1-46).

No one will be harmed by this study. All participants will be treated honestly and respectfully, and the results of the data analysis should also be truthful. No insulting language will be used in the research to protect the subjects' emotional and psychological wellbeing. The consent of the participants was sought first before collecting the data as well as explaining that an ethical clearance will be obtained from the university's research ethics committee before data collection.

1.17 Outline of the dissertation

This study is completed with six chapters, which are outlined below:

Chapter 1: Introduction: Introduce the reader to the topic, what previous work was done in this regard, what the problems are and why and how these problems will be investigated.

Chapter 2: Literature survey: Reviews the relevant and available literature on project success and ethical leadership.

Chapter 3: Methods and materials: The research methodology used to conduct the study is presented.

Chapter 4: Results and discussion: Discusses the findings, analysis and interpretation of the quantitative and qualitative data in detail and the proposed model.

Chapter 5: Summarising conclusions and recommendations: Provides the summary of findings, conclusions and recommendations.

1.18 Limitations of the study

The study has a sample size of 117; therefore, the findings may not be generalised to other institutions of higher learning or groups of workers. Furthermore, the scope of this study is limited by time and financial considerations. Although more staff could be used to collect the data, this may not be tenable as the study is self-funded and may incur time and financial costs. Because of different tasks, different working styles, different internal controls and different strengths and weaknesses, the findings of this study cannot be generalised to the entire institutions of higher learning. However, its meaning may have some relevance to other institutions of higher learning.

1.19 Demarcation/delimitation of the study

The study is limited to those workers responsible for designing and implementing educational entrepreneurship ventures at the university under study. This study is limited in that it focuses on a specific university. Results may not be generalised to other universities and sectors. The education sector has unique selling points compared to other industries. This study is also limited by timing concerns, for example, because it is a cross-sectional study. Hence, no lengthy longitudinal study is possible that could provide greater insight.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter focuses on an overview of how ethical leadership affects project success in educational entrepreneurial ventures at a South African University of technology, drawing on previous literature reviews to accomplish the study's goals. The study further deals with the concepts influencing ethical leadership. This chapter will also deal with the theoretical framework of leadership styles, the relationship between entrepreneurial success and entrepreneurial leadership as well as the type of leadership style applicable in an organisation and other elements that complement the leadership in an organisation. The definition of project complexity, its contributing factors and characteristics, the primary variables that influence project complexity, the theoretical foundation of project complexity models and the future strategy for managing complexity are all covered in detail in this chapter.

This chapter also examines the definition of entrepreneurship, the term "entrepreneurship," additional factors that affect the entrepreneurial education intention, the relationship between entrepreneurship and entrepreneurial education intention and the effects of entrepreneurship education on students' entrepreneurial orientation.

2.2 Understanding the concepts influencing ethical leadership

An ethical leader possesses traits, such as responsibility, integrity, moderation, people orientation and fairness. However, other researchers, claim that ethical leaders are those who should be regarded as legitimate and credible (Qing, 2020:1405-1432). To draw followers' attention to the morality of messaging and communication, leaders act in a way that is accepted as normatively acceptable and driven by altruism. Robust relationships can create a cheerful outlook and effective work behaviour.

2.2.1 Leadership and ethical leadership

To manage and sway a group, team, department, organisation, nation, or any other entity, leadership is essential. A leader's actions can also impact how people live their lives, either positively or negatively. The concept of leadership has many facets and is intricate.

It can be a skill or ability, a dynamic social process, or a relationship between leader and follower. These factors have motivated many researchers to focus on understanding leadership and related concepts.

The conference on global leadership and organisational behaviour effectiveness (GLOBE) research in August 1994 is where the most widely used definition of leadership first appeared (Gandolfi & Stone, 2018:261-269). The following definition was developed by some researchers at the conference: According to the GLOBE, leadership is the capacity of a person to persuade, inspire and enable others to contribute to the effectiveness and success of the organisations in which they are involved.

However, Ko *et al*. (2017:104-132) define ethical leadership as the promotion of such behaviour to followers through two-way communication, reinforcement and decision-making, as well as the demonstration of normatively suitable conduct through personal actions and interpersonal relationships. Moreover, ethics are presented with few defined interpretations viewed, in terms of behaviour. The chart below shows some of the common ways of defining ethics (CLEVERISM, 2021).

Table 2-1: Few defined interpretations

Situational ethics	The situation's context determines the "right" course of action. Therefore, the right action may be wrong in another situation.
Cultural relativism	What is "right" is determined by culture and one cannot judge other cultures based on their own. What is acceptable in one culture may not be acceptable in another.
Professional ethics	People in a particular profession should abide by the code of ethics that governs that profession as this will determine what is right.
Value-based ethics	To determine what is "right" and "wrong", each person should apply their own set of values.
Rule-based ethics	What is right is established by the laws of a particular group or organisation.

Fairness-based ethics	Fairness determines what is “right” in terms of actions and behaviour.
Ethics based on general principles	The underlying presumption is that there is a set of universally recognised moral standards that define what is ethical.

Source: (CLEVERISM, 2021).

Therefore, ethical leadership places a focus on moral management, ethical standards, accountability and communication processes. It is also initiative-taking (Peng & Kim, 2020:348-368). Authentic leadership includes self-awareness and authenticity. While transformational leadership does not involve a transactional influence process, ethical leadership does involve ethical leaders setting ethical standards to influence followers’ ethical behaviour.

2.3 Consequences of ethical leadership

Positive outcomes are achieved for both the organisation and the workforce due to the significance of ethical leadership. Some studies concentrate on how ethical leadership affects its followers (Aldoseri, 2020:21-61). Furthermore, some have described these effects as having positive outcomes, including job satisfaction, performance at work and creativity, while others have negative outcomes, including misconduct and unethical behaviour (Koopman *et al*., 2019:1102-1103). However, Ko *et al*. (2017:104-132) noted a few effects of ethical leadership on worker performance. Therefore, a discussion of the outcome will follow.

2.3.1 Antecedents of ethical leadership

Ethical leadership can lead to positive consequences for both employees and the organisation. As a result, research on the factors that influence ethical leadership has not been widely disseminated (Haar, Roche & Brougham, 2019:621-640). According to some researchers, the situational and leader-specific influences on ethical leadership antecedents can be divided into two categories (Ko *et al*., 2017:104-132). Aldoseri (2020:21-61) argued that situational factors offer leaders a chance to develop and learn their ethical leadership aspects. However, there is direct participation to achieve learning and simulation on the part of the followers (Ko *et al*., 2017:104-132). These five values

are related to ethical leadership, according to a study by Haar, Roche and Brougham (2019:621-640): Cultural authenticity, collectivism, altruism, humility and time orientation. Except for collectivism, it is believed to be closely related to developing ethical leadership. Finding ethical leadership depends on each value's distinct, independent role (Aldoseri, 2020:21-61). Furthermore, the study notes that ethical leadership, leadership value and employee performance are among the antecedents and outcomes of ethical leadership. Findings showed a positive relationship between these five factors and employee workplace performance, antecedents or values, turnover intention and job satisfaction (Aldoseri, 2020:21-61).

2.3.2 An assessment of their leader's performance

Followers' assessment of their leader's performance is included in the leader outcomes. This includes projecting the image of a trustworthy professional and having a strong leadership style (Aldoseri, 2020:21-61). This deals with a follower on ethical behaviour, including unethical behaviour and wrongdoing (Dust *et al*., 2018:570-583). It also deals with followers' family satisfaction and life. This entails most employees working all day (Aldoseri, 2020:21-61). Therefore, ethical leadership can affect how satisfied employees are with their lives (Yang, 2014:513-525). Finally, ethical leadership can reduce workplace discrepancies, job strain, counterproductive work behaviour and employee turnover (Ng & Feldman, 2015:947-948; Hoch *et al*., 2018:501-529).

2.3.3 Ethical leadership and employee performance

Ethical leaders can function as instructors for employees in the organisation. The leader uses a system of rewards and penalties to motivate followers to follow his example and perform better (Aldoseri, 2020:21-61). Employees who have a good relationship with their direct manager exhibit better performance in repaying their boss for the favours. The performance of an employee in their role is significantly improved by ethical leadership. However, ethical leaders display care, integrity and fairness, while employees return to the employee voice. Finally, employees benefit from the leader's favour by upholding his/her standards and demonstrating ethical leadership (Aldoseri, 2020:21-61).

2.3.4 Employee voice and ethical leadership

The team members consistently pay attention to their leader's actions, the expected output, required tasks and appropriate and inappropriate behaviour (Kwon & Farndale, 2020:1-11). Inappropriate behaviour that interferes with or detracts from the current task is encouraged, and employees are encouraged to discuss it with their leader (Aldoseri, 2020:21-61). Employees' voice and behaviour are on display when moral leaders encourage their team members to share their ideas and suggestions for improvement and immoral behaviour (Aldoseri, 2020:21-61). Moreover, because they uphold the same values as their team members, ethical leaders foster an environment where workers can communicate with one another in a fair and trustworthy manner (Aldoseri, 2020:21-61). Ethical leaders can create an atmosphere of unbiased and authenticity. To resolve issues and improve working methods, leaders encourage their teams to offer their opinions (Chen & Hou, 2016:1-13). Similarly, ethical leaders inspire and motivate their team members to discuss moral matters. According to the research by Weiss *et al*. (2018:389-402), inclusive language, such as "we," "our," and "us," and the traits of leaders have a positive impact on voice behaviour.

2.3.5 Employee voice at the labour platform

The employee voice process can assist in minimising confusion concerning the performance of a task (Song, 2019:1053-1077). Furthermore, the employee voice involves persuading managers to alter ineffective policies and procedures. In a recent study by Kwon and Farndale (2020:1-11), a comprehensive definition is revealed. They defined voice as an effort to alter workplace practices rather than ignoring non-traditional workers, whose results may differ (Wilkinson, Barry & Morrison, 2019:1-11). Platform labour limits workers' voices, such as the articulation, implementation and development of workers' interests (Heiland, 2020:27-47). However, the platform work has quickly arisen as one of the most exciting and vibrant areas of labour organising (Joyce *et al*., 2020:1). As a result, offering co-workers feedback encourages individual initiatives, which promotes the development of new-role behaviour (Aldoseri, 2020:21-61). According to a study by Sulistyo (2017:173-187), collaboration with co-workers and knowledge-sharing impact performance outside the scope of the job. Employee voice behaviour advances organisational performance, boosts and inspires performance (Song *et al*., 2017:177-

192). To speak more effectively with co-workers, one should encourage them to share knowledge and abilities relevant to their tasks (Aldoseri, 2020:21-61). Some knowledge is difficult to transfer through formal mechanisms, such as job descriptions that are important (Nonaka, 1994:14-37).

2.4 Theoretical framework of leadership styles

2.4.1 Leadership styles

The ethical behaviour of businesses is significantly influenced by ethical leadership. Moreover, the ethical performance of the workforce is influenced by the leader's behaviour. Consequently, over the past decade, the body of knowledge regarding ethical leadership has rapidly increased (Ko *et al*., 2017:104-132). The influence of leaders and their choices, as well as the significance of leadership responsibility, have become increasingly important in 2020 and are now part of people's daily lives.

In the current social environment, leaders must decide and be accountable for the organisation's success in any well-known challenge. Therefore, the definition of ethical leadership is defined as "leadership demonstrating and promoting normatively appropriate conduct through personal actions and interpersonal relations" (Western Governors University, 2020). Murphy's (1992:1-236) research shows that technical education and workshops enhance leaders' abilities to succeed. Training in leadership abilities has been suggested as essential for boosting employee confidence and productivity (IMD Leadership, 2021). In contrast, business owners typically take risks in a competitive market (Donbesuur, Boso & Hultman, 2020:151-161; Thomas & Mueller, 2000:287-301; Ali, Kelley & Levie, 2020:117-128). Training and innate leadership qualities hone a leader's strengths to increase the organisation's chances of success. Furthermore, the influence of leaders in decision form part of the daily lives of employees at work. A key determinant of any organisation's success and that of its employees is its leadership style.

2.4.2 Relationship between entrepreneurial success and entrepreneurial leadership

Organisations should have strategies to enable them to eventually continue their projects successfully (Hussain & Li, 2022:829959-829959). However, a study by Bass (1985) supports the notion that some leaders think organisational management is heavily influenced by business culture (Ubaid & Dweiri, 2020:1046-1064). This improves performance and leads to success (Upadhyay & Kumar, 2020:102100). As a result, leadership style both produces success and a market environment that is conducive to innovation and entrepreneurship. The capacity of an organisation to value both new and old knowledge and to adopt innovation is necessary (McDonald, 2002:1-24). The various elements that influence knowledge entrepreneurship, such as entrepreneurial experience, capabilities and experience investing in other organisations, are revealed in a study by Fernandes *et al*. (2017:2-15). As a result, the governance structure and the leadership's style and values are assessed (Cleveland & Cleveland, 2020:35-40).

Previous research has only concentrated on entrepreneurial leadership styles that affect the performance of the organisation (Nguyen *et al*., 2021:e07326), employee creativity (Newman *et al*., 2018:1-9), employee behaviour (Bagheri, 2017:159-166) and workplace creativity (Cai *et al*., 2019:203-217). However, present-day researchers must pay attention to contributing to the field of entrepreneurial leadership in business studies (Al Mamun *et al*., 2018:1591). Additionally, knowledge success is a key element of success (Oliveira *et al*., 2020:893-911). Success has recently drawn attention to the importance of leadership styles, including transformational, transactional and paternalistic leadership styles (Nogueira *et al*., 2018:807-824; Raziq *et al*., 2018:309-323). Research has been conducted on the link between success and leadership (Boga & Ensari, 2009:235-251; Elche *et al*., 2020:2035-2053; Muliati, 2020:95-107).

2.4.3 The type of leadership style applicable in an organisation

In today's social environment, leaders must make decisions with greater responsibility.

2.4.3.1 Transformational leadership (TF)

To advance the organisation, the transformational leader transcends his interests and motivations. Such leadership includes making changes to boost the organisation and its followers' performance, by transforming personal values. This type of leader is accustomed to using various creative techniques to produce novel results. All qualities needed to increase employees' willingness to put forth better work effort and commitment can be seen in this leadership style. This type of leadership can motivate followers to put in more effort to further the group's objectives.

2.4.3.2 Authentic leadership

It is a leader who is confident, upbeat, morally upright, and assertive. This leader is conscious of what he/she is thinking or acting. An authentic leader always sees ambiguous problems from different angles and some researchers assert that authentic leadership combines transformational and ethical leadership styles. His or her ethical methods inspire a sense of spiritual survival in both them and their followers.

2.4.3.3 Transactional leadership

Transactional leadership styles are used mostly in educational institutions (Khan, 2017:17-19). Therefore, the leader is responsible for those who are related to the work value done. It uses unanticipated rewards and endorses staff members who uphold their obligations while advancing organisational goals. This style comprises values, including those that apply to the exchange process, such as dependability, correspondence and obligation. Transactional leadership is based on insufficient backing and followers are encouraged through rewards or punishment for their errors.

2.4.3.4 Laissez-faire leadership (LF)

This leadership style is described as ineffective and inactive. This management approach involves being passive. This approach is the utmost negligent method because it employs the non-interference tactic to encourage all employees to work together towards common objectives. Things happen as they should in Laissez-faire leadership. This leadership style is appropriate for workers who are experts in their field. This leadership style is not prominent and does not control anything. However, Figure 2-1 represents Bernard Bass'

revised full-range leadership model, which concentrates on the behaviour of leaders at the workplace in different work situations.

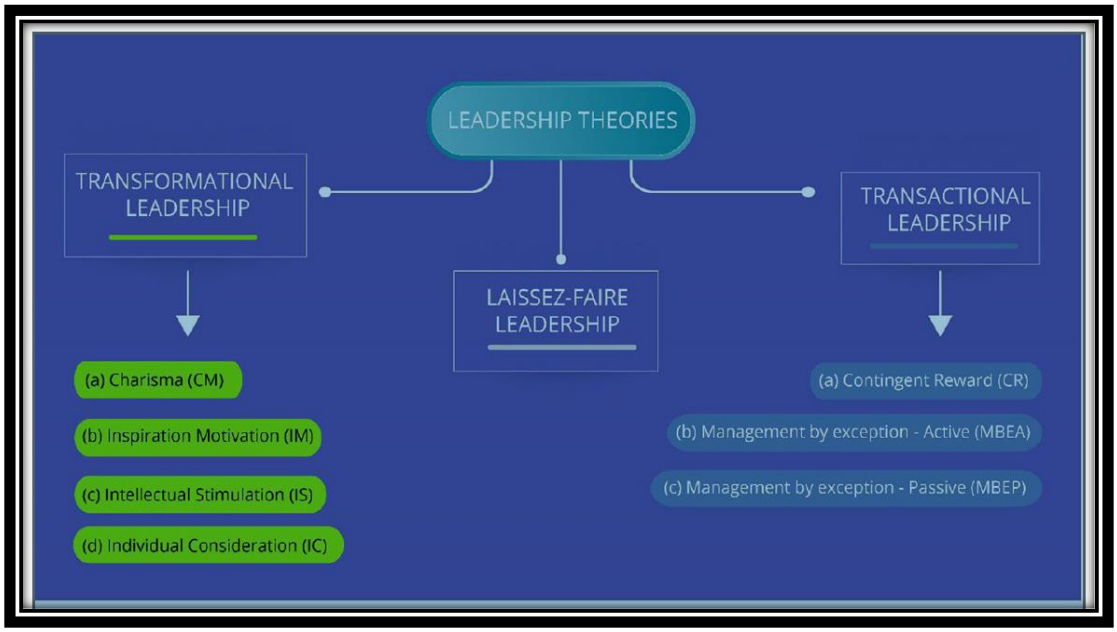

Figure 2-1: Bernard Bass' revised full range leadership model.

Source: Mashele & Alagidede, 2020:494-508.

Therefore, this contains two styles and it also fits in an avoidant Laissez-faire style. Burns (1978) first discussed transactional and transformative leadership; later, Bass (1985) expanded on Burns' (1978) theory. However, Bass (1985) introduced the concept of transformational leadership and combined it with transactional and Laissez-faire leadership.

2.4.4 Crisis and leadership

According to Solomon and Steyn (2017:455), crisis management is a crucial component of effective leadership in the modern world. The value of planning for a crisis is vital in any organisation. This helps in a prescriptive response to a specific crisis (Qi *et al*., 2019: e0212091). The most common cause of crises in a formal organisation arises when the leaders find themselves playing too many roles and it also increases the pressure of time and resource constraints; however, the leaders should have complex leadership skills (Bolden, 2011:251-269). It is important to understand the disasters and crises, which can lead to additional crises. However, visionary leaders bring hope, optimism and strengthened resilience.

Leaders should use their ability to retain relationships during a crisis. Authentic leadership is effective in times of crisis and adopts employees' self-efficacy by giving them trust and confidence. Moreover, leaders with confidence are leaders who believe in their capabilities to be successful, (Solomon & Steyn, 2017:455). Confident leaders are visible to the team. South Africa is affected by its low growth potential. According to Shung-King *et al*. (2018:183-184), South Africa used its comparative advantages to open new domestic and global markets through increased productivity and innovation. This is vital for strong and transformative leadership that should be recognised in the building of responsive and resilient commercial systems (Reed, Klutts & Mattingly, 2019:570-583).

2.5 Other elements that complement the leadership in an organisation

2.5.1 Organisational culture

An organisation's organisational culture becomes crucial to manage the challenges of external variation and internal mix. The behaviour of people inside or outside an organisation that sets them apart from other organisations is exhibited by the culture of that organisation.

2.5.2 Hierarchy culture

Controlled and organised are terms used to describe hierarchy cultures. The emphasis of this culture is on reducing the amount of ambiguity and fostering a sense of security, stability, predictability and certainty in standardisation. Organisations that apply this culture focus on control and steadiness predictability.

According to San Cristóbal *et al*. (2018:1-11), the level of complexity in a project context affects the project's objective goals, experience requirements, organisational structure and staffing levels. The earliest examples of complexity theory can be found in the works of Morris (1997), Morris (2002:82-90), Bennet and Fine (1980), Bubshait and Selen (1992: 43-47), Bennet and Cropper (1990:29-45) and Gidado (1993:213-225). According to these authors, it is crucial for project managers to comprehend project complexity and how to manage it because there are differences in decision-making and goal setting (Pan & Zhang, 2021:103517).

It is clear today that complexity can lead to project failure in organisations (San Cristóbal *et al*., 2018:1-11; Kraus, 2021). However, projects have become more complex because

there are applications of old-style tools and techniques, which create a simple project (San Cristóbal *et al*., 2018:1-11). A project's level of complexity can affect it both negatively and favourably (Kraus, 2021). The emergence of novel properties that none of the system's components possess is what has a negative impact in terms of understanding and controlling difficulty (San Cristóbal *et al*. 2018:1-11; Kraus, 2021). For several reasons (San Cristóbal *et al*., 2018:1-11), the complexity of the project management process is usually acknowledged to be significant.

(i) It affects the coordination, planning and management of projects.
(ii) It hinders key projects from achieving their more distinct objectives and goals.
(iii) It affects the project's organisational structure and the choice of management personnel with the appropriate experience requirements.
(iv) It can be used as a method to select the ideal project management setup.
(v) It may impact various project deliverables, such as quality time and safety costs.

However, the Luhmannian system theory asserts that complexity is the result of the following factors coming together (Brockmann & Girmscheid, 2007:219-230).

(i) The separation of roles among project participants.
(ii) Systems' and subsystems' interdependencies.
(iii) The decision field's practical effects.

Therefore, it is possible to operationalise and interpret project complexity in terms of various project elements, their connectivity and interdependencies. These are the levels of interconnectedness that are controlled by the integration between these components. This can be done by communication, coordination and control (San Cristóbal *et al*., 2018:1-11).

2.6 Definition of project complexity

There is never a consensus on what complexity means in project contexts. Project complexity is a concept that cannot be fully expressed by a single definition (Zhang, Zhou & Horn, 2021:151-164; Padalkar & Gopinath, 2016:688–700). The same definition of project complexity is given by Vidal and Marle (2008:1094–1110), who define it as "a

project property that makes it difficult to understand and retain under control its overall behaviour". Additionally, complexity is defined by Tatikonda and Rosenthal (2000:74–87) and Berg *et al*. (2020:1-22) as "interdependencies among the process and product technologies and innovations as well as the difficulty of goals".

2.7 Project complexity factors and characteristics

According to experience, the interrelationships between the project's components are more complex than what is indicated by the traditional work breakdown structure of the project work (San Cristóbal, *et al*. 2018:1-11; Coughlan *et al*., 2021:1440-1455). Some authors have identified the elements that go into project complexity because there is disagreement over how complexity should be defined. Complexity, according to Pich, Loch and Meyer (2002:1008-1023), is described as "information inadequacy when too many variables are involved". However, project managers should be able to recognise the sources and factors that contribute to or increase project complexity (Mavi & Standing, 2018:751-765).

San Cristóbal *et al*. (2018:1-11), Remington, Zolin & Turner (2009:1-30) suggest differentiating among characteristics, sources, or severity factors, and the dimensions of complexity, of factors that can decrease or increase the severity of complexity. According to Remington, Zolin and Turner (2009:1-30), several varied factors engage in the perception of project complexity based on the following headings: time, work practices, interdependencies management process, technology and interfaces goals and stakeholders. As a result, the main factors that are identified in the literature as being the main drivers of project complexity are size, interdependence and interrelations, division of labour, globalisation, context-dependence, diversity, goals and objectives, ambiguity, stakeholders, complexity, flux, concurrent engineering and task scope. Those factors will be discussed below.

2.7.1 The main factors that are considered in the drivers of project complexity

2.7.1.1 Concurrent engineering

By including team members with diverse disciplinary backgrounds, also referred to as cross-functional teams, concurrent engineering eliminates functional and departmental barriers (San Cristóbal *et al*., 2018:1-11). According to Gidado (1996:213-225) the differences between the four sources of complexity are described by San Cristóbal *et al.* (2018:1-11) as follows:

a) The resources that are used.
b) The environment.
c) The level of technological knowledge that is required.
d) The variety of parts that make up the workflow.

Therefore, it is important to identify the factors that make up complex projects, such as large resources, a demanding environment, the ability to work at the forefront of technology and various potential interactions. Interdependence, variety, size and interrelations within the context-dependency project are all factors that Hatamleh *et al*. (2018:113-131) as well as Vidal and Marle (2008:1094–1110) highlight as essential but not sufficient conditions for project complexity.

2.7.1.2 Interdependence and interrelations

An event in a networked structure can have unanticipated effects on another entity in the structure due to the interaction of diverse types among entities (San Cristóbal *et al*., 2018:1-11). There are numerous philosophically diverse subsystems and systems involved in a project (Topchiy & Tokarskiy, 2018:062005). Therefore, the methodological assumption in those systems is the fact that the schedule interdependencies and cross-organisational activities. Thus, such retrofitting works and upgrades, as well as the project's sheer size and complexity, cover all major variables affecting complexity (San Cristóbal *et al*., 2018:1-11).

2.7.1.3 Goals and objectives

According to San Cristóbal *et al*. (2018:1-11) and Habermann *et al*. (2022:5-26.), goals and objectives should be adequately and accurately defined on both an operational and strategic level. All project participants, including managers, owners, consultants and contractors, should be aware of these objectives and goals, according to Fakunle and Fashina (2020:1-15).

2.7.1.4 Stakeholders

Project complexity is primarily influenced by the number of participants and communication between them (San Cristóbal *et al*. 2018:1-11; Hao *et al*., 2020:1-16). A project's complexity may increase due to the management of competing agendas, numerous strategies, stakeholder processes and structural complexity (San Cristóbal *et al*., 2018:1-11). Project complexity may increase significantly if it is politically sensitive (Zaman *et al*., 2019:444-460).

2.7.1.5 Management practices

The riskiest components of a project include interactive management and organisation (Urbański, Haque & Oino, 2019:23-35). Ballard and Elfving (2020:1-41) distinguish between "soft" and "hard" approaches when discussing ethics, contractor relationships, supplier monopolies and process overlap involving methodologies, techniques and activities. According to San Cristóbal *et al*. (2018:1-11), this may impact how clearly defined the project's objectives and goals are.

2.7.1.6 Division of labour

The organisation's structure is determined by dividing labour into different tasks and coordinating those tasks (Burton & Obel, 2018:1-13). To manage the selection, the project's organisational structure divided the labour into more specialised tasks in a smaller group (Joseph & Gaba, 2020:267-302). Consequently, an amount of pressure is placed on individuals within groups to meet the objectives or goals of the project (Sanyal & Hisam, 2018:15-22). This includes all potential project complexity-creating factors, the

underlying causes of cost overruns and scope changes that affect the project's complexity after it has begun (Flyvbjerg *et al*., 2018:174-190).

The variety of tasks that must be completed within the parameters of a project constitute the most significant aspect of technology (San Cristóbal *et al*. 2018:1-11). These advocates for the determination of horizontal difference (Dewar & Hage, 1978:111–136). The phrase "technological complexity" refers to the diversity and variety of some task-related elements, such as the variety and quantity of inputs and outputs and the tasks that must be conducted. The interdependence among tasks that are part of a network of tasks is one way that technological complexity can arise. Teams working on various technologies and inputs are also involved in this. Technological interdependence can include a type of sequential reciprocal and pool reciprocal interdependency the predominant type in construction projects (Remington, Zolin & Turner 2009:1-30; San Cristóbal *et al*., 2018:1-11).

2.7.1.7 Globalisation and context-dependence

Through the removal of barriers and increased mobility, globalisation increases the project's complexity (Castellani *et al*., 2022:82-107). The environment and context in which the project operates is a crucial feature of its complexity (Shuffler & Carter, 2018:390). Therefore, adequate practices and methods apply to a project. Furthermore, given the various institutional, cultural and language arrangements, this cannot be applied directly to the subsequent projects (Gale *et al*., 2019:1-12).

2.7.1.8 Diversity

Diversity is described as having various components. This includes two mechanisms for their dissimilarity (San Cristóbal *et al*., 2018:1-11; Linsenmaier, Schmidt & Spandler, 2021: 508-527). There are more features and various features, all of which are increasing in complexity and diversity (Barros *et al*., 2019:1-10).

2.7.1.9 Ambiguity

Ambiguity is described as a lack of clarity in the interpretation and application of findings due to an excessive information flow (Steger, Amann & Maznevski, 2007). Ambiguity is

another form of uncertainty in projects with multiple interpretations, which leads to conflicting goals and processes (San Cristóbal *et al*. 2018:1-11; Conforto, Rebentisch & Amaral, 2016:8).

2.7.1.10 Flux

Flux refers to the adaptation of changes to conditions with temporary solutions to diversity and interdependence (Woodward & College, 1992). Flux influences and affects the internal and external. Such influences can either be an external influence, including political while internal influences are the strategy in individual behaviour (San Cristóbal et al., 2018:1-11).

2.8 Types of project complexity

San Cristóbal *et al*. (2018:1-11) state the two historical approaches of complexity. These methods are referred to as the discipline of descriptive complexity, which reflects complexity as one inherent quality of a system. This perspective urges scholars to attempt to gauge complexity (Richdale, 2021:220-239). The second strategy is referred to as the realm of perceived complexity because complexity is subjective and the complexity of a system is insufficient to comprehend an observer's view (PhiCong *et al*., 2022:759). As stated by (Jaafari, 2003:47–57) perceived complexity, allows the project managers to produce consistent decisions. They accomplish this by executing a consistent course of action to shape the project's development and achieve the intended project state. Technology complexity is categorised by San Cristóbal *et al*. (2018:1-11) into three forms of complexity using a differentiation and interdependence concept:

(i) If the components are pooled, each will have a unique impact on the project.
(ii) Sequential means that one element's output becomes another's input.
(iii) Reciprocal means that each element's output also functions as its counterpart's input (Remington & Pollack, 2016).

The four distinct categories of project complexity are temporal, technical, directed and structural, according to Pollack, Remington and Pollack (2016). However, the temporal complexity of projects can be unexpected legislative changes in technology. This denotes

a significant degree of ambiguity regarding potential project destabilisers in the future (Süsser *et al*., 2022:121909). Structural complexity derives from large-scale projects that can be divided into small tasks with separate contracts (Janeliukstis & Chen, 2021:114143). Technical complexity refers to projects in the industrial, architectural and design fields that exhibit design traits and/or technical components that are unknown, creating uncertainty about the results for numerous separate design options (Brandl *et al*., 2021:293-305). When the project's direction is unclear and a change project is necessary to improve the problematic condition, it is referred to as directional complexity. In their 2016 study, Remington and Pollack emphasise the distinct differences in complexity that can be used to help choose the best model for project management. Furthermore, the operative complexity forms part of the degree that the organisational project is self-governing once its operations are defined to achieve its goals (Franke, Wolterstorff & Wehlan, 2021:264-291). Therefore, the cognitive complexity pinpoints the degree of self-reflection, organisational culture, the emergence of identity and sense-making processes (Gidado, 1996:213-225).

Depending on how project managers see and interpret complexity, multiple project complexity levels may arise (Thesing, Feldmann & Burchardt, 2021:746-756). Therefore, the main elements of project complexity are thought to be technological and organisational complications (San Cristóbal *et al*., 2018:1-11). Four distinct forms of project complexity - general, task, social and cultural aid in the best understanding and failure prevention of projects (San Cristóbal *et al*., 2018:1-11). Task complexity is the concentration of the units that are transformed into being within a temporal and spatial frame and where causal relationships are identified (San Cristóbal *et al*., 2018:1-11).

Social complexity labels the communication flows at work among employees who are engaged in different tasks (Mörike, 2022:111-147; San Cristóbal *et al*., 2018:1-11). The various historical viewpoints and competing sense-making methods are all included in the cultural complexity of a project. Cultural complexity is a historical experience, with sense-making mechanisms of several groups that collaborate on a project (Akl, 2021:272-293). A functional organisation that uses decentralised decision-making may manage general

task complexity, but social complexity requires commitment and trust, while cultural complexity entails the sense-making processes (Pettes, 2021).

2.9 Theoretical framework of project complexity models

Finding the best model for project management can be challenging (San Cristóbal *et al*., 2018:1-11). It is insufficient for a model to be close if it is overly simple. In contrast, if the project is overly complicated, it might not be of much use to the project managers. This section, which is a part of the updated literature, discusses the pertinent complexity models for project management (San Cristóbal *et al*., 2018:1-11).

2.9.1 Goals and methods matrix

A key component of any project is clearly defined objectives and methods for achieving them. The goals and methods matrix depicted in Figure 2-2 was created by Turner and Cochrane (1993:93–102) and used by San Cristóbal *et al*. (2018:1-11).

The four different project types are shown in this figure:

(i) Projects classified as type 1 have clear objectives and well-defined methods. Accordingly, the project manager's responsibility is to manage the project.
(ii) Type 2 projects refer to the project's well-defined goals and methods that are poorly defined. The project manager's responsibility is to mentor his/her team; typically, educational programmes fall within this category type.
(iii) Projects classified as type 3 are those that are planned using the life-cycle phases with the objectives of using both well-defined and poorly defined methods.
(iv) Projects falling under type 4 are those without established objectives or methods. Product development projects fall under type 2, whereas application software development and R&D, and organisational change projects fall under types 3 and 4 projects, respectively.

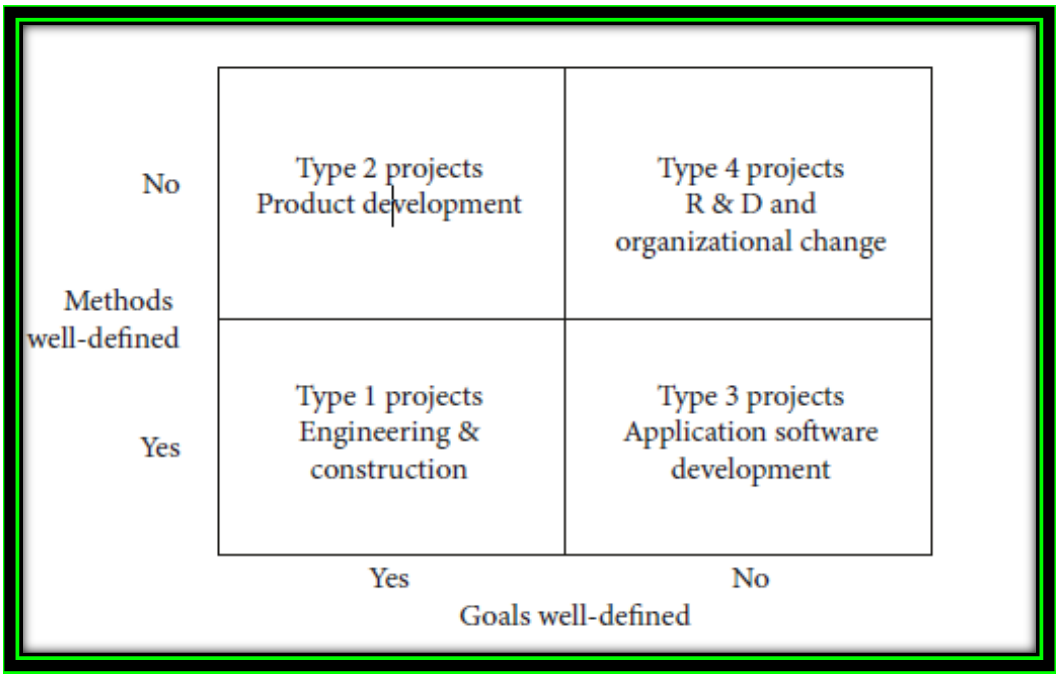

Figure 2-2: Goals and methods matrix.

Source: Stacey (1996).

2.9.2 Stacey's agreement and certainty matrix

Stacey (1996) in San Cristóbal *et al*. (2018:1-11) looked at the complexity of two magnitudes, which is the degree of certainty with the level of agreement. However, the two dimensions can result in a matrix model, as indicated in Figure 2-3 with the following areas:

(i) Close to an agreement refers to being close to certainty. Therefore, straightforward projects are managed using conventional methods and the goal is established using the appropriate procedure to maximise effectiveness and efficiency.

(i) The far from a level of the agreement refers to being close to certainty. Therefore, to resolve such an issue, the elements of, in this case, compromise, negotiation and coalition are used.

(ii) Close to agreement refers to being far from certainty. Therefore, to resolve such a situation, quality leadership methods can be used rather than conventional project management methods.

(iii) Far from agreement means being far from certainty. Therefore, it is impossible to use the so-called conventional management methods given the level of chaos.

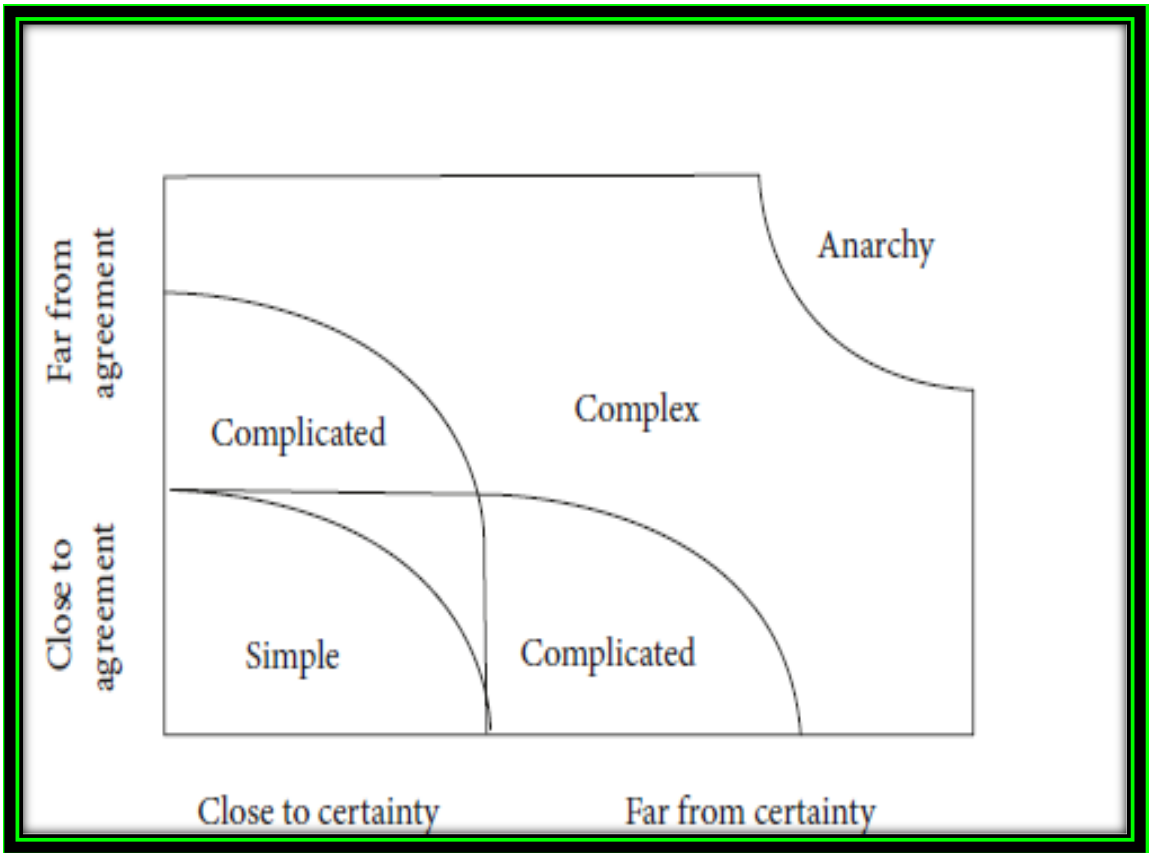

Figure 2-3: Kahane's Approach.

Source: Kahane (2004).

Kahane (2004) in San Cristóbal *et al*. (2018:1-11) state that the complexity approach can be found in a social environment. The author distinguishes the complexity of a project in three ways, pointing out that introducing the U-process would be a suitable methodology for solving complex problems:

(i) Dynamic complexity: The cause and effect of complexity if each is distinct and challenging to manage.
(ii) Generative complexity: It is impossible to calculate the situational solution.
(iii) Social complexity: The individuals involved in the solution's implementation bring various viewpoints and objectives.

However, the application of the U-process as developed by Kahane (2004), suggests that project managers should consider these three actions.

(i) Recognising the project's current state.
(ii) Replicating what needs to be done and what is required of them.
(iii) Recognising and moving quickly to create a new reality.

2.9.3 Cynefin decision-making framework

The Cynefin framework, created by Snowden and Boone (2007:68), enables business executives to adapt complex ideas and see things from new perspectives, which aids in the resolution of some problems encountered in the real world. The framework can be divided into five areas, complex simple disorder chaotic and complicated with multiple causes and effects (San Cristóbal *et al*., 2018:1-11). The relationships between the causes and effects of the simple and complicated domains are what best classifies them. Therefore, facts can be used to determine the correct answers. The chaotic and complex domains do not clearly show the relationship's cause and effect (Hodges & Larra, 2021: 354-368). Thus, decisions may be based on insufficient information. When the four dominant domains are unclear, the disorder domain can be used. It may be controlled by building smaller parts and then moving them to the other four realms (Maj, 2021:4-33). The table below highlights the characteristics of each setting, the warning indications, the leader's duty, and the appropriate response to warning signs.

Table 2-2: The context, warning signs, leader's task and response to warning signs

Type of project	Characteristic context	Leader task	Warning signs	Response to warning signs
Simple	Patterns are repeated. This can cause and affect the link. This could be	Respond, delegate and sense. This is the best practice. This	Complacency and comfort. This creates a simple problem complex. Thus,	Do not think that things are simple and that communication is clear.

	called a face-base management.	involves direct and clear communication.	the entrained thinking is applicable.	
Complicated	Expert analysis is needed and can affect the relationship between the known to the unknown. This is the face-management.	Observe, evaluate and act. Create expert panels to consider divergent viewpoints.	The experts' overconfidence in their proposed solutions.	Encourage internal and external stakeholders to challenge the opinions of experts. These use experiments to win over people to think creatively.
Chaotic	High confusion. The cause is unclear and can affect relationships of unknowable's high tension. Too many choices, not enough time to consider them. The pattern-based leadership offers a clear	Respond sense and act. It is based on works. Take instant action to recreate order.	Applying a chain of command and-the control approach is longer.	Set up devices to take advantage of opportunities presented by a chaotic environment and change the work's chaotic context to one that is complex.

	unpredictability and flux.			
Complex	There are no correct answers. The unknown's ideas. Can compete and produce innovative approaches. This is a pattern-based leadership.	Sense, respond and probe. Make experiments and environments that will allow the emerging patterns to upsurge the interaction and ideal communication.	Constant chaos, a tendency to retreat and a desire for command-and-control to speed up the resolution of issues.	Allow time for reflection and employ the appropriate strategy.

Source: (San Cristóbal *et al*., 2018:1-11).

2.9.4 William's model

According to Williams and Hillson (2002) as mentioned in San Cristóbal *et al*., (2018:1-11) Baccarini's model is recognised as one extra element. Therefore, Williams and Hillson (2002) introduce uncertainty and characteristics of the growing complexity in any project into two compounding causes, including the connection between product complexity and project complexities. This model illustrates the result in Figure 2-4 where, project complexity can be observed with two dimensions, uncertainty and structural complexity. These two dimensions have two sub-dimensions: interdependency, the number of components, and the degree of uncertainty in the approaches and objectives.

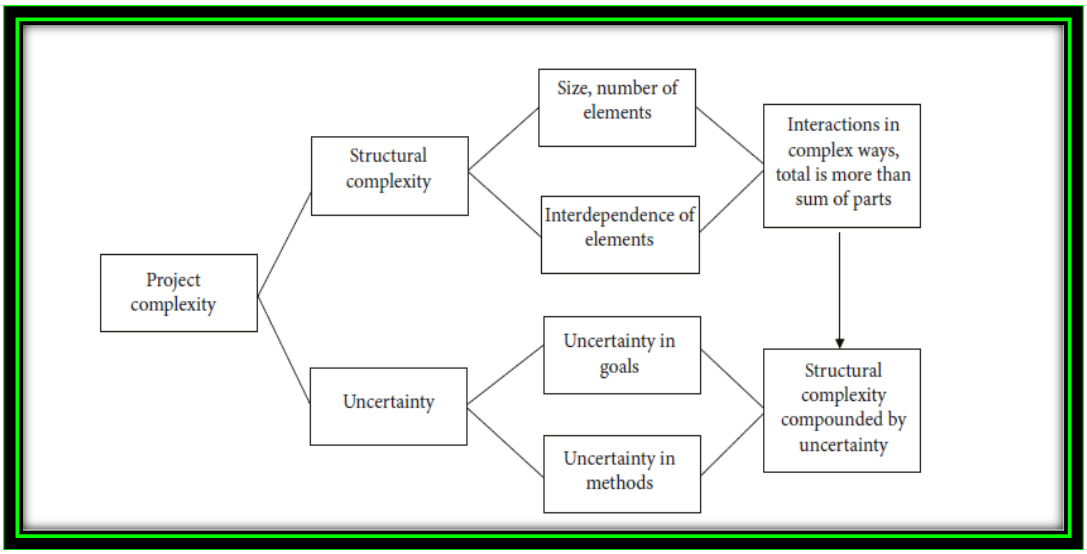

Figure 2-4: William's model (2002).

Source: Williams and Hillson, 2002.

2.10 Current and future approaches to management complexity

Some researchers have attempted to address project complexity from different perspectives (San Cristóbal *et al*., 2018:1-11). Early management theories, however, considered a 1976 method developed by Declerck and Eymerys to study poorly structured problems. The Turner and Cochrane goals and methods matrix was created (Turner & Cochrane, 1993:93–102). The uncertainty studies by Little (2005:28–35) concur with Williams (1999) who noted the numeral elements and their relationships as structural uncertainty elements because they are a component of complexity. According to Shenhar (2001:394-414), complexity and uncertainty go hand in hand. Atkinson, Crawford and Ward (2006:687–698) assert that ambiguity is a component of complexity, while Müller, Geraldi and Turner (2007) agree.

Perminova, Gustafsson and Wikström (2008:73–79) agree that complexity is equal to systematic ambiguity. Pich, Loch and Meyer (2002:1008-1023) classify ambiguity as differences, unforeseen chaos and uncertainty. The distinction between complexity and unpredictable ambiguity has been reaffirmed by Sommer and Loch (2004:1334–1347). Williams (2005:497–508) defined two additional types of ambiguity, which San Cristóbal *et al*. (2018:1-11) define as aleatoric ambiguity and reality of uncertainty, both of which depend on the accuracy of calculations and can increase a project's complexity.

Managers can prevent projects from failing by being aware of the different strategies project managers can employ to deal with a demanding situation. Stacey (1996), Kahane (2004) and Snowden and Boone (2007:68) indicated how the complexity of a project, can be chaotic and can influence the decision-making of leadership style in an organisational change. The primary variables that affect project complexity are listed in the table below.

Table 2-3: Main factors affecting project complexity

Size	For the organisational structure of the project to be regarded as a sign of complexity, it must be larger than the minimum critical size and its components must be interconnected.
Interdependence and interrelations	A unified structure's events may have unanticipated effects on other entities therein.
Management practices	Project complexity is influenced by several factors, including participant relationships, methods, how activities intersect, suppliers and techniques.
Globalisation and context-dependence	Boundaries, hierarchy, greater mobility, and dynamics are eliminated by globalisation, which reduces complexity. It is a vital element of complexity.
Goals and objectives	At both the operational and strategic levels, they must be adequately and appropriately defined.
Technology	The key aspects of technology require various tasks to be completed. This explains why different technologies are required because of the degree of specialisation in each one.
Ambiguity	With its numerous plausible interpretations, it clarifies the uncertainty in any project.

Stakeholders	Project complexity is primarily influenced by several participants and the ease with which information can be shared among them.
Flux	Flux is the external and internal influences. This suggests relentless changes and adapts to the changing conditions.
Diversity	The complexity increases with both the quantity of the components and the variety among them.
Division of labour	The division of labour is achieved by adding organisational structure to projects. The factors that increase project complexity include the hiring of the right people and the pressure placed upon them to meet project goals.

Source: (San Cristóbal *et al.,* 2018:1-11).

Singh and Singh (2002:23) contend that when the linear system starts to fail, it shows that it is at the edge of chaos. In contrast, as nonlinear systems gain sway, project managers should begin paying closer attention to them and manage the influences on their management and planning approaches (San Cristóbal *et al*., 2018:1-11). Additionally, there are some techniques that can be used to manage complexity in project management circumstances. This includes systems theory to help with the comprehension of various aspects that influence the project (San Cristóbal *et al*., 2018:1-11).

However, San Cristóbal *et al*. (2018:1-11) and Payne (1995:163–168) take a viewpoint to link complexity with the various interfaces between organisational projects and the individual, tying together strain and systems thinking. Laufer, Denker and Shenhar (1996:189–199) identify the evolution of management approaches as connected to the organisational complexity of both complex and straightforward projects. According to Tatikonda and Rosenthal (2000:74–87) and Pundir, Ganapathy and Sambandam (2007:17), technological originality results from the organisation's technological maturity,

whereas technological immaturity can cause task ambiguity. Richardson (2008:13) further notes that the implications of complexity on the side of management in an organisation can affect the project managers' jobs.

2.11 Entrpereneurship

Entrepreneurship is a purposeful motion to begin and enlarge a revenue-orientated business and can also be defined as a set of behaviours that initiates and manages the reallocation of economic resources and whose reason is value creation through those means. In the developing world, successful small businesses are the most important engines of income growth, poverty reduction and job creation (Ndedi, 2004:4). Therefore, this could be linked to entrepreneurship and entrepreneurial intentions (Israr & Saleem, 2018:3). Entrepreneurial intentions can be referred to as the planning and implementation of business ideas, which could be orientated by a mental process (Mirjana, Ana & Marjana, 2018:1457). Entrepreneurial intentions also play a vital role in the development and growth of entrepreneurship (Sharaf, El-Gharbawy & Ragheb, 2018:2). Furthermore, entrepreneurial intentions are usually defined as one's desire to own one's own business.

Entrepreneurial passion is a consciously accessible intense positive feeling experienced by engagement in entrepreneurial activities associated with roles meaningful for the self-identity of the entrepreneur. Intention refers to a self-prediction that engages in a particular behaviour. As an organisation expands, new resources are added, leading to better performance, knowledge growth, strategic learning and increased competitiveness. However, the success as mentioned by Raziq *et al*. (2018:309–323) state that the accomplishment of projects depends on the realistic budgeting, period and handling of projects. Some scholars have defined project success differently. Atkinson, Crawford and Ward (2006:687–698) consider the iron triangle (cost, time and quality) the most popular one and it has been employed as a metric for measuring project performance. This encompasses the following: benefits to the organisation, the success of businesses, client satisfaction, project team members, organisation strategic objectives and stakeholder benefits.

2.12 The conceptualisation of an entrepreneur

2.12.1 What is an entrepreneur?

This idea of entrepreneurship was developed for the first time in the 1700s and its definition has changed over time. Moreover, the concept of entrepreneurship was derived from the French word "*entreprendre."* Thus, entrepreneurship refers to making things happen, committing, undertaking and changing the status quo (Ndedi, 2004:4). Entrepreneurship, according to Leach and Melicher (2016:7), refers to "the process of changing ideas into commercial opportunities and creating value". Entrepreneurs are people who look for change, take advantage of it and see opportunity. Entrepreneurship is seen as a catalyst for both social and economic growth (Ndedi, 2004:4; Kritikos, 2014:5). Entrepreneurship is the process of first starting a new economic activity, which supports this idea.

2.12.2 The term entrepreneurship

The word "entrepreneur" comes from the French verb "*entreprende*," which means "to take in-between" (Frederick, 2019:10). An entrepreneur engages in entrepreneurial activity. Entrepreneurship is an act that engages creativity to find new products or firms, and that firm is an innovation with all ideas being novel as they are created using creativity. Additionally, different perspectives—such as macro or micro—can be used to view entrepreneurship.

Therefore, the macro-aspect reflects the factors, such as education, that the entrepreneur has no control over. However, the interpretation of entrepreneurship in a different light state "that it is an organisation or individuals (whom), where, and how they seek opportunities to create future services and goods, as well as how these opportunities can be discovered, evaluated and exploited" (Frederick *et al.*, 2019:15). Therefore, entrepreneurship can be viewed as an opportunity that can be converted into value, such as money.

The following four schools of thought can help clarify this (Frederick *et al.*, 2019:15):

- The cultural and social school of thought promotes the consideration of the outside factors that influence an entrepreneur's way of life, such as continuing education

to hone one's entrepreneurial abilities. If the environment is not toxic, it will be supportive.

- Contributions from employees willing to pay to hone their entrepreneurship.
- The entrepreneurial endeavors of a company should only serve to strengthen its financial position, according to the capitalist school of thought (Frederick *et al*., 2019:16). All financial endeavours, such as fundraising, will be directed towards business planning.
- The displacement school of thought is concentrated on the macro-environmental elements that have a damaging effect on entrepreneurship, such as racial and religious diversity, governmental regulations and policies, depressed economic conditions, and elements that restrict organisational growth (Frederick *et al*., 2019:17).
- Environmentally conscious business practices that make a profit without harming the environment are addressed by the ecological school of thought.

The internal determinants that constitute the internal locus of control and impact the entrepreneur is examined from a small-scale perspective (Frederick *et al.*, 2019:17). According to this school of thought, the qualities of successful entrepreneurs include creativity, success, willpower and technical expertise (Frederick *et al.*, 2019:17). Finally, it is important to source and develop products and services optimally and to take advantage of new business opportunities.

2.13 Business entrepreneurship

Business entrepreneurship is an intentional and planned behaviour that causes efficient economic, transfer of innovation markets, breeds new jobs and employment levels (Karimi *et al*., 2016:187). Furthermore, there is an increasingly academic, corporate and political interest in entrepreneurship progress (Sharaf, El-Gharbawy & Ragheb, 2018:1). Business entrepreneurship refers to the creation and expansion of a business enterprise through innovative methods of conducting business. This covers the launch of various business ventures. Barriers in the governmental, structural and cultural spheres may have an impact on business entrepreneurship. Venture capital funding is one of the structural obstacles. Governmental barriers include cutting off financial aid to small businesses as

they experience rapid growth, and cultural barriers include the low social value placed on entrepreneurship (Kegel, 2016:1).

2.14 Entrepreneurship education intention

Developing participants' entrepreneurial intentions and/or some aspects of those intentions, such as knowledge, desirability and feasibility of entrepreneurial activity, require an entire education and training system, which may be educational or non-educational in nature (Li & Wu, 2019:1). Two theoretical stances that claim that entrepreneurship education is positively correlated with entrepreneurial intention have been acknowledged by the literature review: The human capital theory and the self-efficacy of entrepreneurs are those theories of perspective Bae et al. (2014:219).

According to Bae et al. (2014:219), they considered human capital a predictor of entrepreneurial intention and well-defined entrepreneurial self-efficacy to be a belief in one's capacity to successfully conduct the various roles and tasks associated with entrepreneurship. Entrepreneurs' perceptions, confidence, competence and degree of conviction are significantly influenced by their level of entrepreneurial education (Iglesias-Sánchez *et al*., 2016:210). According to studies conducted on college students, having a college education increases one's likelihood of starting a business (Ambad & Damit, 2016:109; Asimakopoulus, Hernàndez & Peña Miguel, 2019:4). Moreover, by providing crucial experience through academic and practical knowledge about entrepreneurship, Ambad and Damit (2016:109) support the idea that a university education strongly contributes to the promotion of entrepreneurship as a career option.

2.15 Entrepreneurship and entrepreneurial education intention

Entrepreneurship education has been seen as a means of fostering entrepreneurial mindsets and professional skills to take an entrepreneurial career after graduation. Mbuqe (2016:11), states that there is a significant improvement in attitudes and perceived behavioural control when a student has partaken in entrepreneurship education. Therefore, entrepreneurship education aids as a platform for students who have the intention to become owners of their businesses and retain the necessary skills to achieve high organisational performance in extremely competitive markets (Passoni & Glavam, 2018:96).

However, entrepreneurship education should assist in strengthening this intention (Mbuqe, 2016:11). Moreover, the importance of entrepreneurial education increases the need to prepare students for management in the present-day work and living environment (Sharaf, El-Gharbawy & Ragheb, 2018:1). Providing students with the skills, knowledge and competencies necessary to participate in a more enterprising, innovative and flexible manner within a constantly changing environment is just one aspect of entrepreneurial education (Ebewo, 2017:80).

Furthermore, Passoni and Glavam (2018:96) emphasise that to make accurate measurements of the correlation between entrepreneurship education and entrepreneurial intention, it is important to analyse the existing theory of planned behaviour (TPB) models to guide the research, as proposed by Ajzen (1991) and Shapero and Sokol's (1985) studies. Education in entrepreneurship improves people's knowledge and skills, as well as their entrepreneurial intentions. Similar to how resources and subjective norms can be used to address barriers to starting a new business, entrepreneurial education can also be influenced (Israr & Saleem, 2018:4). Furthermore, entrepreneurship education can also be used to help people get ready for an entrepreneurial career by making it appealing to them and giving them knowledge, skills and competencies needed for starting new businesses (Malebana, 2016:366). Finally, there is a positive correlation between the number of management courses and students' intentions of starting their own businesses (Hou, Su, Lu & Qi, 2019:3).

2.16 Other factors that influence entrepreneurial education intention

According to Shamsudin *et al*. (2017:424) studies reveal the five factors that influence the entrepreneurial intention; factors such as innovativeness, economic situations, family background, role models and supportive environment. The study also demonstrates how to examine the connections between personal factors, and it relates how entrepreneurial intention has been used in earlier research, with each researcher focusing on different variables that they felt were important for their study Iwu *et al*. (2016:168). Similarly, a study by Hou *et al.* (2019:3) and Israr & Saleem (2018:4) revealed that there is the influence on entrepreneurial intentions: economic situations, family background, role models, need for achievement and a supportive environment as well as entrepreneurial

knowledge acquired. According to Shamsudin *et al.* (2017:424), these factors are discussed as follows.

2.16.1 Family background and role models

When a student chooses a successful role model who owns his/her own business, studies by Urban & Kujinga (2017:251) have demonstrated that this influences the students' intention to pursue entrepreneurship. Consequently, they might be motivated to launch and manage their own successful business (Al Bakri & Mehrez, 2017:5). The term "entrepreneurial family background" refers to parents or relatives who are self-employed. This can influence a person's decision to pursue an entrepreneurial career by influencing their attitudes, perceptions of social norms and perceptions of behavioural control (Shirokova, Osiyevskyy & Bogatyreva, 2016:1). According to the research of Urban and Kujinga (2017:251), entrepreneurial parents and relatives are seen as ideal role models and the likelihood of one starting their own business is higher when there is a history of entrepreneurship in the family. There is a significant correlation between parental employment position and students' entrepreneurial intentions. However, this also shows that the employment of parents influences their entrepreneurial intentions.

Family background is an important variable that contributes to entrepreneurship intention (Urban & Kujinga, 2017:251).Individuals who have families with businesses tend to show a higher attitude towards entrepreneurship than those that do not have business undertakings. Based on Ajzen's TPB, behaviour is more likely to be performed if a person has a stronger state of mind to engage in it (Urban & Kujinga, 2017:251). However, some researchers contend that there is a favourable correlation between student entrepreneurial intentions and family support (Joseph, 2017:425).

2.16.2 The economic and political situation

A nation's socio-political climate can have a profound impact in that it can either foster or stifle entrepreneurship. Therefore, the entrepreneurial intentions of an individual can be influenced by the existing economic participation and political set-up of a country (Urban & Kujinga, 2017:251). More so, economic situations are important drivers of entrepreneurship (Joseph, 2017:426).

Moreover, unemployment can have a positive influence on entrepreneurship, in a way that the unemployed individuals could engage in entrepreneurial activities and start their own businesses to generate more income. Economic instability in a country, as well as political instability, can also influence the entrepreneurial intention. There is a necessity for entrepreneurs that could positively influence the total number of entrepreneurs, while the economic situation and the prospect of unemployment may lead some people to seek alternatives (Joseph, 2017:426).

When unemployment is high and increasing, the choice to become an entrepreneur depends on the amount of self-employment as is perceived as a practical substitute for employment. Finally, among the variables that may affect entrepreneurial intent are economic development, financial accessibility and governmental regulations (Fragoso, Rocha-Junior & Xavier, 2020:38).

2.16.3 Environmental factors

Environmental factors impact the entrepreneurial intentions of individuals and subsequent behaviour (Urban & Kujinga, 2017:251). These elements include financial resources, government assistance, economic trends, technological advancements, sociocultural influences, political and legal developments, demographic shifts and global forces that can either positively or negatively affect businesses and, as a result, entrepreneurial intentions (Akolgo *et al.*, 2018:20). Therefore, environmental factors are considered to be as significant in filling the "gap fillers" between the correlation between individual's personality and entrepreneurial intentions (Mustafa *et al.*, 2016:165).

According to Israr and Saleem (2018:4), entrepreneurship correlates directly with the availability of capital. However, because they rarely have the funds to start a new business, prospective business owners must find alternative sources of funding (Israr & Saleem, 2018:4). Finally, a study by Ebewo, (2017:77) has indicated that many emerging entrepreneurial careers are impeded due to inability to access capital.

2.16.4 Entrepreneurial knowledge

Mustafa *et al.* (2016:165) emphasise that entrepreneurial education programmes are among the well-organised ways to equip people with the knowledge, abilities and attitudes required for pursuing an entrepreneurial career path. Entrepreneurial education can

increase students' intention to pursue entrepreneurship by helping them gain knowledge in the field, improve their awareness of it, develop their psychological traits of the profession and enhance their entrepreneurial skills and understanding (Hou *et al.*, 2019:2).

2.16.5 Need for achievement

The need for achievement refers to an important characteristic of an entrepreneur and contributes to his/her growth (Joseph, 2017:425). The author also points out that the desire to succeed and achieve personal success is another crucial aspect of having an entrepreneurial intention. This indicates the significant relationship between the theory of achievement and the entrepreneurial decision process for one to reach the desired performance.

People who are motivated to achieve their goals in life go above and beyond starting a new business (Akolgo *et al.*, 2018:18). The tendency that drives someone with the desire to launch a business is the need for success (Akolgo *et al.*, 2018:18).

2.17 Relationship between entrepreneurship and entrepreneurial education intention

Entrepreneurship education is considered any programme or method of fostering entrepreneurial attitudes and abilities. However, various entrepreneurship education programmes exist that focus on specific developmental stages (Bae *et al*., 2014:219). To reach audiences, some scholars offer various entrepreneurship education programmes (Fiet, 2014). According to a study by Bae *et al*. (2014:219), students who have not yet decided on their career path or whether they want to launch a business benefit from entrepreneurship education.

Thus, once the materialisation of intentions occurs, the actual behaviour will be expected. Intention is the best indicator of actual behaviour. However, several studies have supported the projecting of valid intentions on actual behaviour. One such study is about the meta-analysis over 10 years' period around the world.

However, several studies still regarded entrepreneurial intentions, referred as requirements for taking actual entrepreneurial action (Lee *et al*., 2011:56). There have

been conflicting findings in the research on entrepreneurship education and entrepreneurial intentions. Two studies found a small but statistically significant correlation between entrepreneurial intentions and entrepreneurship education across 73 studies with a total sample size of 37,285 people. This relationship between business education and entrepreneurial intentions has been found to be stronger (Bae *et al*., 2014:219). However, after controlling for pre-educational intentions, the association between pre-and post-educational entrepreneurship education and intentions was not as strong. Our findings have important ramifications for entrepreneurship education researchers, policymakers and programme evaluators (Bae *et al*., 2014:219).

2.17.1 Entrepreneurship education predicts the entrepreneurial intentions

"What motivates people to pursue an entrepreneurial career?" Studies conducted to understand the factors that predict entrepreneurial intentions (EI) are well-known to be good predictors of actual entrepreneurial behaviour. Entrepreneurial desire can foster confidence and influence entrepreneurial intentions in people who are not formally interested in pursuing an entrepreneurial career. The theory of planned behaviour can be applied because behaviour can reflect intentions (Ajzen, 1991:188). However, several researchers have emphasised the significance of entrepreneurial intentions in predicting one's behaviour in various nations and settings.

Moreover, Sharaf wrote about the EI. Gharbawy and Ragheb (2018:2), concur that entrepreneurship is viewed as an intentionally planned behaviour, therefore, perceiving intentions on entrepreneurial behaviour can help predict this behaviour. There is a need for a more process-oriented approach that focuses on the intricate connections between entrepreneurial ideas and the outcomes of those relationships. When business owners are confident in their capacity to launch a new venture, they are more likely to conduct the task and try to succeed in the task. Furthermore, an enterprise's new creative processes benefit from the entrepreneurial spirit.

Consequently, personal commitment has a significant impact on shaping a new venture from entrepreneurial intentions (Israr & Saleem, 2018:3). Thus, entrepreneurial intentions can predict the involvement of students in entrepreneurship and explain the students' decisions to start their businesses (Patrick, Rizal, Hee, Mahadi & Kamarudin, 2019:458).

Understanding the evolution of entrepreneurial intentions is crucial because it can play a significant role in how people behave entrepreneurial (Ahmad, Mahli, Tehseen & Qureshi, 2019:2). The next section provides an example of entrepreneurial intention.

2.17.2 Entrepreneurial intention

The intention refers to thinking or a plan to do something. It also signifies a commitment to act presently or in the future. Intentions are a state of mind that directs a person's attention towards a specific object or path to achieve something. EI is the conscious state of mind that precedes the action and directs attention towards entrepreneurial behaviour, such as starting a new business and becoming an entrepreneur.

Entrepreneurial intentions are described by Bird (1988; 1989) as "a conscious state of mind that directs attention towards a specific object (goal) or pathway to achieve it (means)". Therefore, Bird (1988:442) asserts that having an interest in starting a business is a mental state that develops a new venture within an already established or brand-new business concept. Anyone can become an entrepreneur.

2.18 Entrepreneurial orientation

According to Lomberg *et al.* (2017:1), entrepreneurial orientation (EO) is the process by which an organisation bases its strategy on choices and actions that have entrepreneurial characteristics. This makes it possible for an organisation to develop a competitive advantage that incorporates several factors. The processes that organisations start and use to show their entrepreneurial intentions within the entire organisation are known as the unidirectional construct of EO (Lomberg *et al.*, 2017:1). According to Lumpkin and Dess' definition of the EO multi-dimensional approach (Lomberg *et al.*, 2017:1), an organisation is seen as having entrepreneurial practices that are used throughout the organisation.

Each dimension operates independently of the others and impacts how well the organisational outcome performs. The management attitude to risk dimension and the entrepreneurial behaviour dimension are two new structures that divide EO into two dimensions. A firm's managerial attitude towards risk is its conceptual foundation, and creativity and initiative are key elements of entrepreneurial behaviour.

2.18.1 Autonomy

Autonomy is the right and independence afforded by a person or team to modernise a business concept and vision and to direct them towards completion. This shows that the organisation can support innovation by giving everyone the freedom to make their own decisions, which encourages creativity. Autonomy is the ability of an employee to take calculated risks that can advance and improve an organisation (Verachia, 2017:27).

2.18.2 Innovativeness

Organisational innovation restores its products and their organisational lifecycle whenever they have an opportunity for sustainability, wealth generation and employment. The acceptance of innovations by management offers an organisation a chance to introduce its product in the market. This process results in one seeking new knowledge from outside the organisation's research and design team.

2.18.3 Pro-activeness

When an organisation chooses to introduce new products to the market, it is initiative-taking. This will enable the organisation to pursue market leadership positions and ensure that the organisation survives volatile markets (Lomberg *et al*., 2017:1). These organisations actively and aggressively seek out new business opportunities. Initiative-taking organisations can predict the challenges in the future and prevent challenges from affecting organisational performance.

2.18.4 Risk-taking

Within the context of any entrepreneur, risk-taking can be calculated, and have adverse effects as the mortality of an entrepreneur will be high. The propensity of an organisation to engage in high-risk activities to increase profits is one definition of risk-taking. This entails making audacious choices in challenging circumstances (Garrett, Covin & Slevin, 2009:783). The benefit of taking risk guarantees the organisation to manage indecision. This also brings a difference in encouraging the fear of taking risks and brings the organisation into dysfunction under the tentative market conditions (McMullen & Warnick, 2016:631). In a planned environment, taking risks can have a positive impact, foster organisational growth and inspire innovation, which spurs performance and expansion of the organisation.

2.18.5 Relevance of entrepreneurs

Organisational strategies ensure sustainability in the market and determine which market strategies they will employ. Businesses that want to succeed in the market frequently employ entrepreneurs (Mehralian, 2022:67). The strategies that an organisation will embark on will include organisational advancement in revenue, innovative ways and success in other international markets (Nadikattu, 2020:107). The high performers steer clear of the market and anxiety about under-performance.

2.19 Effects of entrepreneurship education on students' entrepreneurial intentions

Entrepreneurship education paves the way for young people to be aware of the entrepreneurial career option and instils the mindset and attitudes necessary to develop the skills, knowledge and abilities to evaluate and identify market opportunities (Shahid, & Alarifi, 2021:100533). People who are confident in their abilities and skills are more likely to launch new ventures and engage in activities that are intended to do so (Shtudiner, 2018:55).

Learning about entrepreneurship increases the likelihood of becoming self-employed. This enhances the knowledge and skills of business owners, which leads to the creation of new ventures. Students' capacity to launch and run their own businesses after graduation may be improved by exposure to entrepreneurship education (Boldureanu, *et al*., 2020:1267).The strengthening of both the capabilities and intentions of entrepreneurship education can contribute to entrepreneurial activity. Due to this, there has been a phenomenal increase over time in the quantity of research examining how entrepreneurship education affects the entrepreneurial intention in both developed and developing nations (Vodă, *et al*. 2019:1192).

Consequently, researching the results of entrepreneurship education can aid in promoting entrepreneurship in South Africa (Rashid 2019:5343). This may lead to the development and implementation of initiatives that can address the nation's economic growth and job creation. Similar findings were made by Akinbode *et al*. (2018:49), who found a positive correlation between entrepreneurial self-efficacy, attitude intention and education in the

field. According to a study by Gerba (2012:259) conducted in Ethiopia, students who did not attend entrepreneurship courses and those who did exhibit significant differences in attitude, self-efficacy and subjective norms.

According to a study conducted in South Africa by (Mahlaole &Malebana, 2021:8) it is more important to increase entrepreneurial intention over the long term than it is over the short term. There is a study that demonstrated the beneficial effects of sustained exposure to EE on self-efficacy among entrepreneurs (Mahlaole & Malebana, 2021:3-4). Moreover, the entrepreneur's intention to start a business can be improved by the attractiveness of the entrepreneurial career option. According to recent studies (Rankhumise *et al*., 2020:5), experiential learning that is student-centred, discovery-oriented and learning-oriented should execute the entrepreneurial process. This indicates that entrepreneurship educators should abandon the central lecturing method.

2.20 Theoretical frameworks of the theory of planned behaviour

2.20.1 Selected empirical studies evaluated among university students

The researcher applied a theoretical framework on entrepreneurial intent as a basis of the study. A few distinct types of theories on evaluating and measuring entrepreneurial intent have been identified and will be discussed in this section. There are different entrepreneurial intention models based on the different entrepreneurial intention theories, Both Shapero and Sokol (1982:72) and Ajzen (1985) have intention-based theories that are well-established in the field of study. Shapero and Sokol (1982:82) concentrate on the position of entrepreneurship in economic development. Ajzen (1985:26) identified three attributes (attitude to act, social norms and perceived behaviour control) that can affect planned behaviour. The perceived behaviour control in Ajzen's (1985:13) model has the same characteristics as Bandura have been identified in 1997 as self-efficacy.

Both Shapero and Sokol (1982:65) and Ajzen (1985:15) have similar commonalities as their focal point on the proximal behaviour. The TPB is appropriate to measure entrepreneurial intent. Nevertheless, researchers should be clear about what is understood with entrepreneurial intent in the study. Entrepreneurial intent should be clearly defined in these studies. Thus, this study focuses on the entrepreneurial intent of

students enrolled in the programme at the University of Technology. To understand why an individual becomes an entrepreneur, numerous authors have investigated different aspects: (McClelland, 1961:202:102; Obschonka *et al*., 2013:105), characteristics such as age or gender (Storey, 1994:56; Campo, 2011:14; Koveos, 2014:140), culture (Siu & Lo, 2013:148; Huefner & Hunt, 1991; Kundu & Rani, 2013), work environment (Lee *et al*., 2011:125; De Clercq, Honig & Martin, 2013:125) De Clercq, or environmental factors (Almeida, Ahmetoglu & Chamorro-Premuzic, 2014:103). These studies point to numerous factors that could influence the entrepreneurial intention.

2.20.2 The theory of planned behaviour (TPB)

According to Ajzen (1985:13) and McEachan, Conner and Lawton (2011:97), the TPB has been used to assess entrepreneurial intentions and is widely regarded as a potent model of behaviour. According to the TPB, every action in human behaviour is planned (Ajzen, 1985:11; Ajzen, 2017b:112). Ajzen (1985:16) first published the TPB in 1985 and it has been used successfully in different disciplines. According to Anh and Mai (2013:120), the TPB is based on the various facets of human behaviour that are planned and signalled by intention towards that behaviour. However, Gibb (2010:23) contends that because the conventional model of entrepreneurship still holds true in the contemporary business environment, it is necessary to change the way entrepreneurship is taught. His alternative “appropriate” model paints a dynamic picture of an entrepreneur with various behavioural traits that should be developed. Gibb (2010:25) asserts that this model incorporates several crucial features.

Thus, this theory is social-psychological that explains behaviour as a process of decision-making. The TPB explains how humans make behavioural decisions primarily driven by their own will and is intended to understand, predict and guide their own behaviour. Ajzen (1991:179) asserts that attitudes and the subjective norm are the two factors that determine people’s behaviour intentions. Therefore, the subjective norm is influenced by social norms, and attitudes can be categorised as positive or negative. The TPB theory’s flaw is that it disregards elements, including feelings, threats and either positive or negative fear (Dutta-Bergman, 2005:103).

According to Denan *et al*. (2015:183), the TPB is a supplement to the theory of reasoned action (TRA), which is necessary given the original model's shortcomings in addressing behaviour over which people have partial volitional control. Both TPB and TRA have related goals that are to appreciate human behaviour through analysing and identifying the causes of behavioural intentions in human beings. As a result, behavioural intention is a weighted function of perceived behavioural control, subjective norm and attitude towards the behaviour (attitude).

However, the TPB extends the TRA by adding the variable of behaviour control (Ajzen, 2017a:120). According to Ajzen (2017a123), and as depicted in Figure 2-5, the TPB exemplifies three categories of antecedents that affect human behaviour:

- Attitudinal behaviour, which is the outcome of positive behaviour, is referred to as behavioural belief.
- Normative expectations, or normative beliefs, are described as subjective norms that are the product of clear social pressure.
- Control beliefs are defined as observed behavioural control that is influenced by the individual's beliefs that are held to conduct the behaviour.

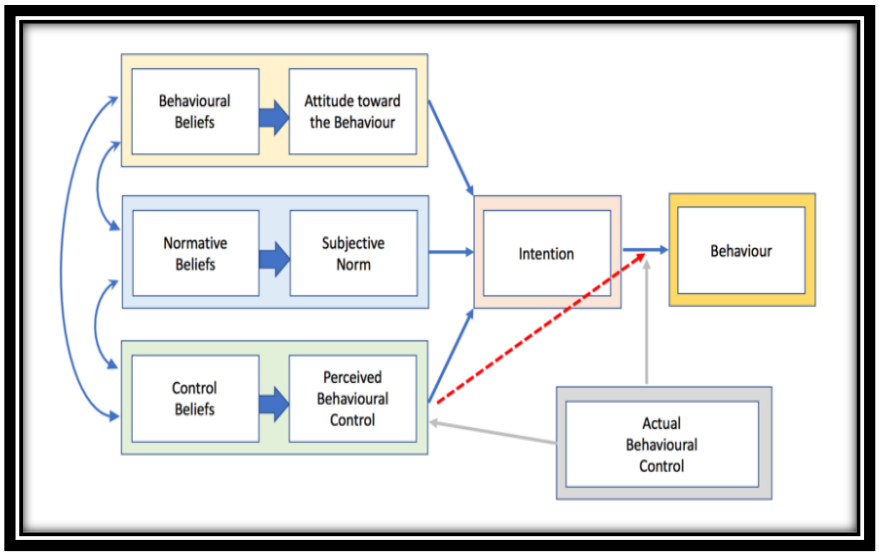

Figure 2-5: Framework of the theory of planned behaviour.

Source: Adapted from Kortteisto, Kaila and Komulainen (2010:51).

Variables that affect how desirable it seems to conduct a particular behaviour include normative beliefs and behavioural factors. The antecedent of behaviour, perceived behavioural control, alludes to the individual's perceptions of situational capability or self-efficacy. The three antecedents of behavioural intention as described by the TPB, are explained as follows:

a. Personal attitude (attitude towards behaviour)

Personal attitude refers to a person's favourable or unfavourable assessment of a particular behaviour. Ajzen (1991:188) describes the attitude as being individual favourable or unfavourable. Self-efficacy and personal attitude are the primary factors that explain entrepreneurial intentions.

These findings were the same as those of (Kolverreid, 1996; Tkachev & Kolvereid, 1999; Autio *et al*., 2001:146). The measure of self-efficacy deliberates on the attractiveness of the individual to be involved in certain types of behaviour. Souitaris, Zerbinati and Al-Laham (2007:566) found that attitude increased students' intention due to participation in entrepreneurship programmes.

b. Perceived social norms (subjective norms)

An individual's perception of what peers believe they should do is referred to as perceived social norms (also known as subjective norms). Perceived social norm measures the observed social pressure by an individual to act on entrepreneurial activities. Studies by Ajzen (1991:178); Autio *et al*. (2001:146), have found that observed norms were unimportant. However, because there was no entrepreneurial intent study on TDD students in South Africa, therefore, the researcher decided to include and test observed social norms in the suggested research model.

It would be significant to determine whether industrial design students in this study are influenced by peers, role models, parents and/or successful entrepreneurs. A person's perceived ability to control their behaviour includes assessments of their capacity to conduct a particular behaviour, as well as their level of resources and self-belief to get past any potential obstacle (Ajzen, 2002:29).

c. Self-efficacy (perceived behavioural control)

The TPB is an extension of the TRA (Ajzen, 1985), which introduces the factor of observed behavioural control, which people have only partial control over. Consequently, Ajzen (1991:181) incorporated substances that promote self-efficacy and controllability into intention measures to advance behaviour prediction. According to Bandura (1994:12), perceived self-efficacy is defined as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives." However, several studies have shown a positive relationship between self-efficacy and the start-up of business (Markham, Balkin & Baron, 2002:149; Zhao, Seibert & Hills, 2005:1268).

Although the original intent of TPB was to describe how people plan their behaviour to accomplish a specific goal, most studies have concentrated on predicting individual behaviour by observing the interaction of several factors with specific goals (Ajzen, 1985). By emphasising both individual factors and social dynamics, observed behavioural control, in contrast to other models, provides a quicker and more relevant framework that recognises and predicts entrepreneurial intentions with greater accuracy (Anh & Mai, 2013).

This section presents a few empirical findings from studies that assessed the TPB in international students (Ajzen, 1985).

2.20.3 Theory of planned behaviour entrepreneurial intention studies

Starting a business involves the planned behaviour of a person because he/she does not just start business. Business should be a plan and should have premises, finance and personnel. However, the individual does not have total control over the process due to external factors, such as funding (Fitzsimmons & Douglas, 2011:436).

Thus, the TPB maintains that there should be more control over the achievement of the individual observations to possess, to have intentions and behaviour (Autio *et al.*, 2001:146; Fitzsimmons & Douglas, 2011:433). There are several international and South African studies to support the usefulness of Ajzen's TPB (1985) to measure intentions (Kolvereid, 1996:48; Autio et al., 1997:134; Tkachev & Kolvereid, 1999:269; Noar & Zimmerman, 2005:275; Souitaris *et al*., 2007:566; Gird & Bagraim, 2008:711; McEachan

et al., 2011:98; Cameron, Ginsburg, Westhoff & Mendez, 2012:3; Othman & Mansor, 2012; Kautonen, van Gelderen & Fink, 2013:662; Sesen, 2013:625; Sniehotta, Gellert, Witham, Donnan, Crombie & McMurdo, 2013; Vinogradov, Kolvereid & Timoshenko, 2013:720; Ebewo, 2014:55; Malebana, 2014a:133; Tshikovhi, 2014a:45).

Gird and Bagraim (2008:712) conducted a study at two universities in the Western Cape (South Africa), using the TPB to gauge entrepreneurial intentions of commerce final-year students. The findings showed that the TPB was widely supported. The study's findings show that demographic factors, situational factors and personality traits did not significantly affect the variance described by the TPB. According to the study's findings, the TPB was a crucial tool for predicting entrepreneurial intentions in the Western Cape and throughout South Africa. Another study by Malebana (2014a;130) in 2010 in the Eastern Cape and the Limpopo provinces in two universities applied the TPB and Liñán and Chen's (2009:32) entrepreneurial intentions questionnaire and measured the entrepreneurial intentions of final year commerce students (Malebana, 2014b:135). The study by Malebana (2014a:130), revealed a desire to open a business in the future.

To assess the impact of students' exposure to the student structure in Entrepreneurial Action Us (Enactus) in South Africa, Tshikovhi (2014a:55) also applies TPB. Enactus refers to "a community of students, academic and business leaders committed to use the power of entrepreneurial action to transform lives and shape a better and more sustainable world" (Mdzikwa, 2014:54).

The Enactus worldwide was represented in 36 countries, at 1 710 universities, with 69 000 participating students (Enactus, 2017:45). Enactus was active on 27 campuses in South Africa (Enactus, 2017:61). Tshikovhi's (2014b:45) study, conducted in 2013 reveals that students' support contact with Enactus had a positive influence on entrepreneurial intentions (Tshikovhi, 2014b:56). Enactus is supported by businesspeople, students and academics.

2.20.4 Krueger's structural model

This model has two aspects that are perceived barriers and perceived support. The originality of the model was traced back to Shapero's model (Shapero & Sokol, 1982).

The interaction between obstacles and perceived support can foretell whether someone will want to start their own business.

This shows that personality traits can impact entrepreneurial attitudes, which can then affect intentions. Social norms, however, cannot have a considerable influence. More so, one can reflect that the social norms can be anticipated to differ across cultures. In other nations, social norms are, therefore, more favourable to entrepreneurship than in others (McGrath & MacMillan, 1992:441; Davidsson & Wiklund, 1997:179). The structural model has been successfully used in the research of universities' significant contributions to entrepreneurial intent (for example, Autio *et al*., 2001; Lüthje & Franke, 2003:135).

An analysis of Figure 2-6 shows that a university that provides entrepreneurial education would have "barrier and perceived support" variables, which are contextual factors when analysing the student's intention to become an entrepreneur (Lüthje & Franke, 2003:138).

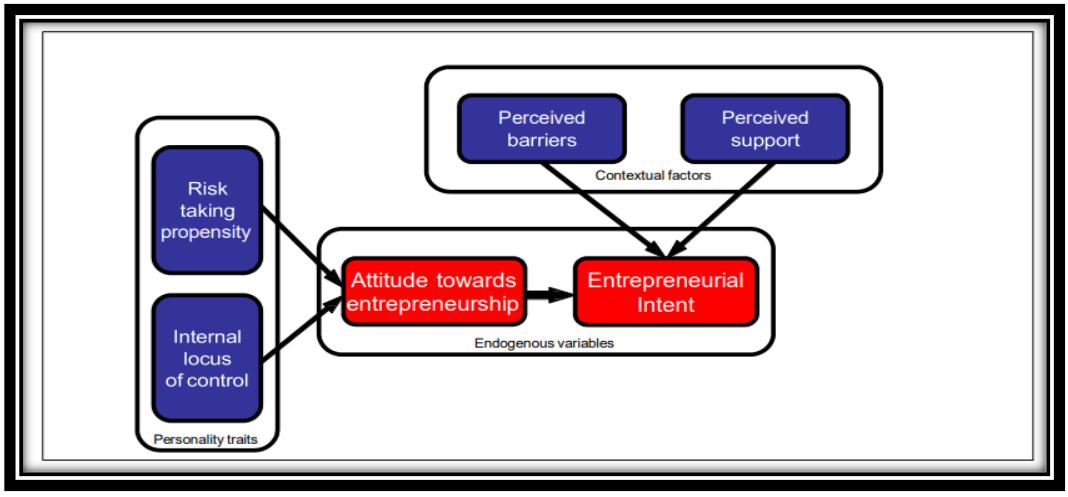

Figure 2-6: The structural model of entrepreneurial intent.

Source: Adapted from Lüthje and Franke, (2003:138).

Thus, the study by Lüthje and Franke (2003:135) indicates two theoretical predecessors of other authors. The model adopted by Lüthje and Franke is suitable for predicting entrepreneurial intentions. Furthermore, the relative perspectives of both authors vary depending on the context. Thus, the researcher concludes that one cannot rely on one theory to draw up a necessary explanation of people's intentions. The theories can be

applied to starting your point by analysing motivation or internal factors. Because explaining behaviour is the goal of all theories, determining the determinants that may impact behaviour should be established and is a common starting point (Lüthje & Franke, 2003:136).

2.20.5 Theory of reasoned action (TRA)

The TRA is fundamentally a motivational theory (Ajzen & Madden, 1986:456). Before any behaviour happens, there is an intention to execute the precise behaviour. A person is more likely to engage in a behaviour when they have higher levels of intention. Individuals' intentions increase as they make more attempts to engage in the behaviour (Ajzen & Madden, 1986:455).

Fishbein first proposed the TRA in 1967. Thus, the decision to act or behaviour will result from intention and behavioural intention that will be controlled by the attitude of a person to behaviour. This will in turn influence one's expectations for the outcome and how one evaluates them.

Therefore, subjective norms are opinions regarding the acceptability of a particular behaviour in each social group or culture. This will result in the motivation to decide to act. However, the key elements of this TRA were taken from (Gross, 2010:77).

This theory states the intention (Ajzen & Madden, 1986:454), as indicated in Figure 2-7.

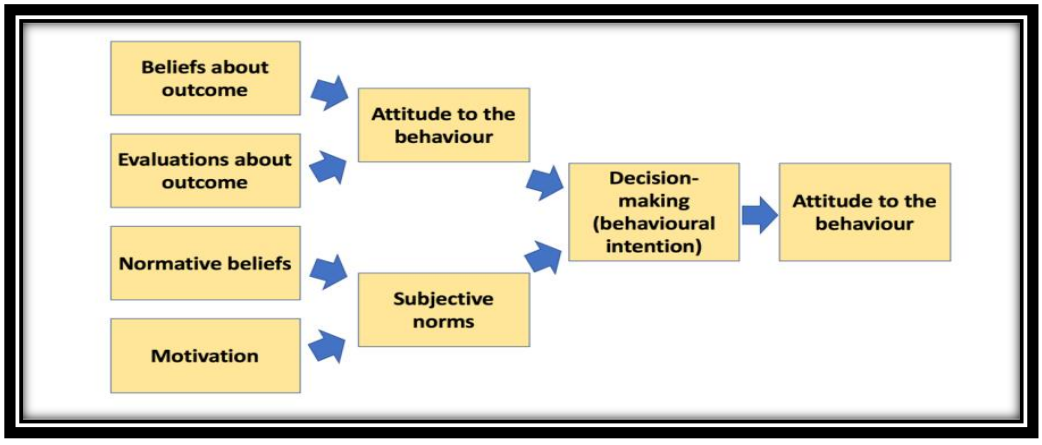

Figure 2-7: Theory of reasoned action.

Source: Ajzen and Madden (1986, 453-474).

The TRA can be used to predict decision-making and behaviour in investigating education to design educational promotion programmes. The persuading message of TRA can

affect a person's decision-making, which is behavioural intention and behaviour when it affects a person's attitude towards the person's actions. The person's motivations and normative beliefs had to be in line with the standards.

Ajzen (1971:145) investigated the absolute importance of normative and attitude messages in both cooperative and competitive settings. This can be supported by a key study by Ajzen (1971:144), which examines the background and reveals that in earlier research, the expected behaviour in the prisoner's dilemma can be influenced using persuasive communication intended to alter either the normative beliefs about the other player or the attitude to act presently. When a message is intended to alter normative beliefs rather than attitudes to act, it is expected that the effect will be different.

Although it is anticipated that the persuasive messages will be successful in altering the two factors, which affect behavioral intentions, it is expected that the behaviour will differ depending on whether a competitive or cooperative competition is occurring. Additionally, the normative message can shift normative beliefs. As a result, in cooperative groups, the expected change will have a greater impact on behaviour than in competitive groups (Cox, Lobel & McLeo 199:828).

Similar to how the intended message can change the behaviour that is observed in the game, it can also influence the desired attitudes, which in turn has a stronger impact on the competitive environment. If it is discovered that the players are giving greater weight to the attitudinal component, the cooperative situation will give attitudes little consideration.

These intentions include the individual's attitude towards behaviour (personal factors), their assessment of the behaviour, whether it is seen as positive or negative, and the subjective norm (social factor), which is the pressure from society to engage in a particular behaviour or refrain from doing so (De Vries, Dijkstra & Kuhlman, 1988:273-274). The TRA adopts both attitude and social norms that are equally important in determining behavioural intention. The intention is perceived as generating a problem where no control exists over the expected behaviour (Ajzen & Madden, 1986:455; Burak, Rosenthal & Richardson, 2013:13).

2.21 Selected empirical studies that used Shapero and Sokol's model of entrepreneurial event (SEE) among university students

2.21.1 Shapero and Sokol's model of the entrepreneurial event

The TPB serves as the foundation for Shapero and Sokol's (1982:168) model of the entrepreneurial event (SEE), which is a model of behavioural intention in the field of entrepreneurship. Intentions to launch a business are more common in the SEE because of attitudes towards the action's desirability and viability as well as a tendency to seize opportunities. Because of this, the entrepreneurial events require the existence of the potential for starting a business (credibility and propensity to act) before the activation of a subsequent propensity to perform (Shapero & Sokol, 1982:187; Fitzsimmons & Douglas, 2011:431). The SEE suggests that entrepreneurial intention depends on the interaction of personal traits, beliefs, values, perceptions, environment and background.

2.21.2 Perceived desirability

Observed desirability, according to Fini, Grimaldi, Marzocchi and Sobrero (2009:389), is the individual's perception of how simple (or complex) the behaviour is to conduct in the intended situation. Perceived desirability is the strength of a person's attraction to a particular behaviour (to become an entrepreneur). Thus, a person's perception of the viability of entrepreneurship may be influenced by their own values, emotions and attitudes (Shapero & Sokol, 1982:168; Miralles, Riverola & Giones, 2012:793).

a. Propensity to act

The propensity to act, which reflects the volitional elements of intentions, is a person's general disposition to make decisions (Shapero & Sokol, 1982:25). According to Shapero and Sokol (1982:26), any track that is considered should be observed as not only desirable but as feasible.

b. Perceived feasibility

Shapero and Sokol (2009:42) state that "the perceived feasibility is related to an individual's perception of available resources; in other words, it measures the individual's personal perceived ability to conduct certain behaviour". Perceived feasibility is the degree to which people consider themselves personally able to conduct that behaviour. (Liñán, et al., 2011:196).

The presence of mentors, partners, or other role models may play a key role in determining an individual's level of viability. Feasibility is equivalent to self-efficacy, which is the belief that an individual can take advantage of a given opportunity.

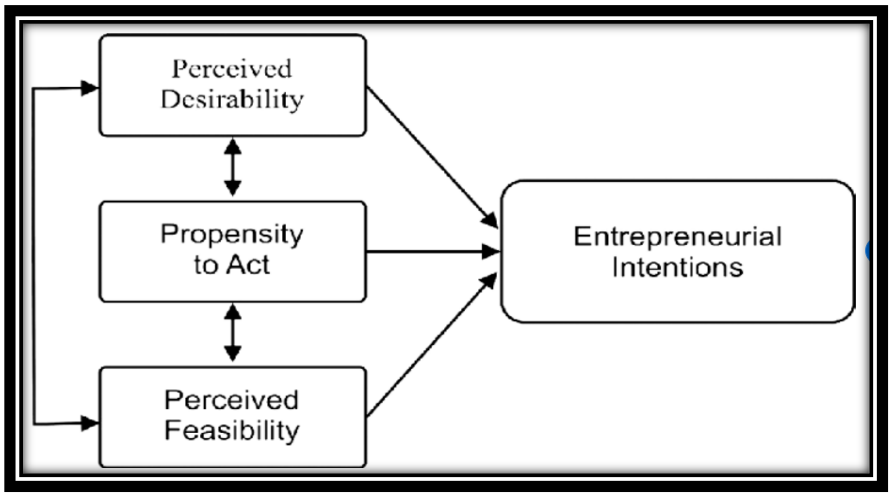

Figure 2-8: The entrepreneurial event model.

Source: Adapted from Shapero and Sokol, (1982:25).

The importance of the prior entrepreneurial involvement of the person and the person's characteristics in determining future entrepreneurial behaviour is highlighted by Shapero and Sokol (1982:25). According to Shapero and Sokol's (1982:25) entrepreneurial event model, people will not act until something changes the status quo. The change could be positive, such as inheriting money from a family member, or it could be negative, such as losing one's job. The individual observation pivots on how the opportunity presents itself, and how personally gratifying the professed achievement would be.

2.21.3 Students at universities

The students' central benefit is provided by higher education institutions and their needs become a focus area as many students are on distance learning (Asvat, Bisschoff & Botha 2018:52).

Thus, the student needs are vital and unique needs in recruitment strategies (DHET, 2017:2). Moreover, higher education and the students are important contributors to the economic development of countries (Mayombo, 2021:56; Asvat, 2018:32).

Most countries make an intensive effort to attract students to gain revenue that goes with the competent export revenues (Jose & Chacko, 2017:29). South Africans 38 higher education system involves students who focus on higher education institutions, in both private and public institutions (Asvat, 2018:45). Consequently, both public and private universities in South Africa had more than 2.2 million students enrolled (2015).

The author also mentions that 50% of students were enrolled in higher education institutions, with 33% attending technical vocational education and training (TVET) colleges, 13% attending community education and training (CET) colleges and 4% attending other private colleges (DHET, 2017:2). The recruitment of these students as part of an essential function explains the direct income of private or public education institutions.

2.22 South African comprehensive universities with limited resources

South African universities face a dilemma of declining public funding due to the, growing inflation, the # FeesMustFall campaign with a shortfall of R2.33 billion for the South African universities (Writer, 2015:25; Mthombeni, 2016:38).

This situation has led these institutions to look for cost-saving and value-creation than gain competitive advantage (Bloch, 2011:5). Additionally, the expenditure for universities in South Africa increased to R55.6 billion for the 2014 financial year, with an expected annual growth rate of 12.1% (Lehohla, 2015:2).

Following the purchase of goods and services, which accounts for R19.3 billion with an indication of (35%) and the expenditure being at 50%, the total amount spent was R27.5 billion (Asvat, 2018:28). One financial asset that was not purchased, totalling R5.5 billion, is also included (10%). Additionally, payments totalling R2951 billion at (5%) were included.

Moreover, universities play a pivotal role in providing knowledge and offer several services that the country pursues to meet its goals for social justice, economic equality and higher living standards for all. According to the Higher Education Act 101 of 1997, (Department of Education, 1997:IV), South African universities are thus at the top of the government's agenda. However, because they are non-profit organisations and rely on

the government for funding, these universities are expected to accomplish more with their limited resources (The Mercury, 2013:52; Anheier, Toepler & Sokolowski, 1997:521). The university's budgetary crisis has led to a policy infringement as challenges surfaced in the South African universities. As a result, between 2011 and 2012, five of the 23 public universities were placed under administration (Flanagan & Einarson, 2017:47). Thus, an innovative approach should consider the investment in good leadership and training performance that can be measured (Booth, 2010:70).

However, fairness has been difficult in the public sector and in universities that are public entities (Green, 2014:52). To the best of our knowledge, comprehensive universities are the only institutions in the higher education sector that offer various knowledge along a horizontal axis, from career-focused to professional, from specialist to general academic (Boulton & Lucas, 2011:2508).

2.22.1 South African education environment

In Africa, private higher education (PHE) has spread and is showing significant growth throughout the African continent (DHET, 2018:55). Most African countries, including Mozambique (32%), Ethiopia (24%) and Gabon (47%) have grown, in private higher education institutions. There are 100 DHETs and 26 PHEIs registered in South Africa, with another 28 PHEs operating under provisional registration (DHET, 2018:18).

Furthermore, the South African educational landscape is competitive; therefore, the private institutions compete with the entire public higher education sector (Dirkse van Schalkwyk, Davis & Pellissier, 2013:225). The major rivals in the public sector are conducting business in an environment where they are more secure because a sizable portion of their income is provided by state subsidies (Bezuidenhout & De Jager, 2014:208). Over a million students were enrolled at all 26 public universities in 2017 (Writer, 2018:8).

2.23 Project success

2.23.1 Project management

According to the Project Management Institute (PMI), project management processes are "systematic actions intended to produce a result where one or more inputs will be acted upon to produce one or more outputs" (PMI, 2017b:19).

There are five knowledge areas for project management and they are grouped according to the knowledge requirements (PMI, 2017a:21). The five process groups, which include initiating, planning, executing, monitoring and controlling, and closing are thus known as the "logical grouping of project management inputs, tools and techniques, and outputs" (PMI, 2017c:18). The PMI organises its processes to meet the five knowledge areas and process groups. The "manage quality" process is therefore a subgroup of the "executing" process group and the "quality management" knowledge area (PMI, 2017b:25).

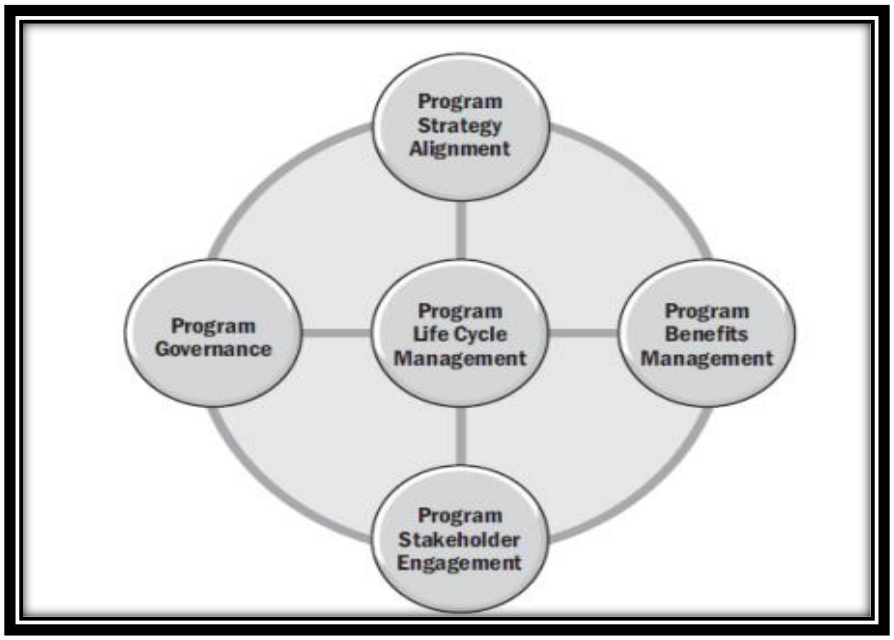

Figure 2-9: Programme management and professional performance domains.

Source: Karnes (2021:14).

Karnes (2021:14), however, identifies five performance spheres as "complementary groupings of related functions that exclusively distinguish the activities found in one

performance sphere from the others within the full scope of programme management work" (PMI, 2017a:23). The goal of these spheres is to provide programme managers with a general checklist of duties to conduct over the course of the programme (Karnes, 2021:13).

2.23.2 Project success

The scope, time and cost "iron triangle" has become the standard method for gauging a project's success over time (PMI, 2008:38 & PMI 2013:22). However, today's projects must be completed within the specified scope, budget and time frames to be successful. They must also be accepted by stakeholders and gain customer satisfaction to open opportunities for future projects (Raziq, *et al*., 2018:309–323). Numerous factors have been linked to successful project outcomes. The author also points out that a fixed or complex project contract requires a higher level of stakeholder and customer satisfaction, which is crucial for the project's success. A project is only considered productive, in the opinion of Fernando et al. (2018:42), if it fulfils the requirements that were previously established. Project success is defined by the PMI as meeting the demands of the project's scope, quality, cost and time, as well as the various concerns and expectations of its stakeholders (PMI, 2008:9). According to the PMI, these are "temporary efforts made to produce an original product, service, or result" (PMI, 2017a:4).

Similarly, Wu *et al*., (2017:1195) suggest that project-based organisations can use three major project success criteria: the impact on meeting design goals, clients and benefit to the organisation (Raziq *et al*., 2018:309–323). The satisfaction of the project's stakeholders can be used to measure project success. This can help the scholars continue their research and explain the time, quality and cost that can be used to gauge project management success (Raziq *et al*., 2018:309–323).

2.23.3 Goal clarity and project success

All major stakeholders should understand the goals and success of the project (Kerzner, 2022:20). For groups and individuals to perform at the levels expected, goals must be clearly defined (Raziq *et al*., 2018:309–323; Sawyer, 1992:130). Everyone involved in the project should be made aware of it, otherwise they will not understand its goals and general direction (Pulido *et al*., 2020:1609). Clear directions are beneficial. A project's key

stakeholders, project team, benefit to the project organisation, customer satisfaction and achievement of the project organisation's goals all play a role in determining success. As a result, project completion within the expected period and quality standards, customer and stakeholder satisfaction concerning cost and the accomplishment of the project organisation's goals can all be considered project successes (Cooper, 2019:35). However, studying at a university creates an interaction among the most ethnically diverse university communities. This provides opportunities for global experience and course content. (Gabriel et al., 2022:485) Today, project success reflects a commitment to equity and access by serving students of all ethnicities, races, backgrounds and nationalities. This creates the most diverse programmes in the universities' environment (Urbański Haque, & Oino 2019:23). Uncertainty about the intended standard and expectations can cause goals to fall short (Chandler, 2020:454).

Using effective communication techniques, the project manager can make the project's execution less complicated for the team members (Deng Yan, Mao, & Yin, 2022:6). As a result, the client can judge the project's success based on whether they are satisfied with it, and if they are, the project is considered successful (PMI, 2013:25). Therefore, a good project manager will establish a clear environment for a better comprehension of the objectives that result in project success (Raziq *et al*., 2018:309–323).

The capacity of an organisation to produce the desired results can be used to evaluate its performance (Mafundu & Mafini, 2019:10). However, internal factors can influence the organisation (Abdel-Razik *et al*, 2022:102 & Asvat, 2018:18). This includes leadership practices, the management or organisational structure and operational efficiencies with the acquisitions. External factors can include social and political factors that affect the market (Asvat, 2018:20). Performance can be gauged by an organisation's capacity to maintain growth despite challenges, including market competition, resource acquisition, market changes and management, or shareholder preferences.

2.24 Conclusion

The treatment of problems static results in delays and cost overruns, which are typical of all organisational projects. The assumption behind the application of conventional project management techniques and tools is that tasks can be conducted independently within

clearly defined time and resource constraints. These conventional methods employ a static approach that gives project managers inflated estimates and disregards numerous project feedback mechanisms. Project managers should reconsider how they define projects considering today's new, complex and dynamic environments. He/she should be able to make decisions in a changing and evolving environment. This study's significance is to clarify how ethical leadership can improve employee performance. Therefore, leadership is primarily part of people's lives and influences people's behaviour and experiences within an organisation.

Entrepreneurship competencies bring together problem-solving creativity, a sense of initiative, technological knowledge and the ability to marshal resources and finances. These competencies allow the entrepreneurs and entrepreneurial employees to inflame and adapt to change. However, project success refers to the project completed within time and with quality (Prabhakar, 2008:3-4). Kerzner's (2011:32) perspective, is that it is difficult to anticipate whether a project is successful or not. Project success must be considered with key requirements, including projects that must yield profit, increase the shareholder price, be performed timely, on a budget basis and with the value they project.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This study examines how ethical leadership affects project success in educational entrepreneurial ventures at a South African University of Technology. The methodology that was employed, the ethical considerations, the data collection, the research design and the research instrument are all described in this chapter. The plan for the study outlines how the goals will be met and the research questions will be addressed.

3.2 Research questions and research objectives

The research problem, research questions and objectives from Chapter 1 will be repeated in the following section:

3.3 Research aim and objectives

This study will be guided by the following research goal and objectives:

3.3.1 Primary aim of the study

The main goal of this study is to examine the impact of ethical leadership on the accomplishment of projects in educational entrepreneurial ventures at a South African University of Technology.

3.3.2 Research questions

Guided by this primary aim, the following objectives have been developed to answer these research questions. The specific research question for this study is therefore stated as follows:

(i) What impact does ethical leadership have on a university's educational entrepreneurship projects?

(ii) What are the challenges that educational leaders face in implementing ethical leadership practices when undertaking educational entrepreneurship projects at the university?

(iii) What recommendations can be given to address challenges that inhibit the compliance with ethical leadership practices of educational entrepreneurship projects at the university?

Consequently, the following are the research objectives for this study:

(i) To determine the impact of ethical leadership on a university's educational entrepreneurship projects.

(ii) To identify the challenges that educational leaders face in implementing ethical leadership practices when undertaking educational entrepreneurship projects at the university.

(iii) To suggest recommendations to address challenges that inhibit the compliance with ethical leadership practices of educational entrepreneurship projects at the university.

3.4 Research design and methodology

According to Kumar (2019:46), a well-defined research design is a general research design that serves as the roadmap for researchers to follow as they conduct their research to find answers to research questions as cautiously, accurately, precisely and genuinely as possible, with the goal of producing reliable results.

3.4.1 Research approach

Dannels (2018:56) stated that research design is a crucial guideline for conducting research. Bell *et al*. (2018:12) established descriptive, exploratory, correlational, causal and explanatory research designs. The study will adopt an explanatory and descriptive quantitative research approach (Sefotho, 2021:11). Thus, out of the three types of research approaches, the quantitative method research approach has been chosen as the research design for this study. However, qualitative studies also depend on reliable and valid measurement tools that use statistical analysis (Salkind, 2017:173). Salkind (2017:173) agrees that "quantitative studies are empirical studies that evaluate a hypothesis and are context-free, objective and unbiased." Furthermore, Nardi (2018:18) affirms that a quantitative research approach applies to numbers and depends on the researcher's perspective, while the theory of testing is static, structured and concerned with generalisation. This type of approach depends on hard, reliable data (Nardi, 2018:18; Walliman, 2018:131). Furthermore, according to Leedy, Ormrod and Johnson (2019:88) it is used to question the relationships among measured variables to clarify, predict and guide phenomena. Thus, the intention is to approve or authenticate relations and to develop generalities (Leedy, Ormrod & Johnson, 2019:90). This study comprehends how ethical leadership qualities affect the success of educational entrepreneurship projects. An

inferential approach will be adopted, which requires the use of descriptive statistics outlined above as guided by the findings from the literature review. This approach starts by proposing a theory and then performing a test using the research strategy above and then finally modifying the theory by considering new findings (Saunders, Lewis & Thornhill, 2016:1-46).

3.4.2 Research instrument

Patten and Newhart (2018:136) state that a tool should be trustworthy if it is to yield consistent results. For that reason, a questionnaire will be used for this study. Descriptive studies use a survey instrument that can make the questionnaire comprise a self-designed 5-point Likert scale quantitative questions, which will be suitable for the study (Fouche, Strydom & Roestenburg, 2021:161). Consequently, a questionnaire will be designed to gather information.

To collect the data necessary to fulfil the study's objectives, a self-administered questionnaire was used in this study. Three sections formed the questionnaire. Section 1 addressed the demographics information questions. Section 2 evaluated the various constructs related to person evaluation of ethical leadership experience through a 5-point Likert scale (1 represented strongly disagree, 2 disagree, 3 neutral, 4 agree and 5 strongly agree). Section 3 evaluated the various constructs related to the perception of project success experience through a 5-point Likert scale (1 represented strongly disagree, 2 disagree, 3 neutral, 4 agree and 5 strongly agree).

Concurrent quantitative data collection was conducted (Ntantsana, 2021:19). Furthermore, the decision to apply a quantitative research approach was driven by the literature review and the goal of the study, to investigate the influence of ethical leadership on project success in educational entrepreneurial ventures at a South African University of Technology. Additionally, a survey was preferred because it is easy and quick to administer in a population, saving valuable research time and generate an important sample to obtain an initial understanding of how ethical leadership affects project success in educational entrepreneurial ventures at a South African University of Technology (Cameron, 2018).

3.5 Population

The targeted population of 168 employees of the South African UoT and the pictured sample size of 117 employees from a faculty at the South African UoT includes administrators and lecturers. Therefore, the 168 employees of will be considered a suitable target population for this study. Using the purposive sampling, all 117 employees will be asked to participate in this study.

The questionnaire was distributed among all 117 employees employed at a South African UoT. Their feedback and suggestions will be incorporated into the questionnaire (Cohen, Manion & Morrison, 2018:220). The sampling is a valid aspect of research because of several types of conclusions that can be drawn from it depending on who is conducting the research (Gerber & Robinson, 2018:154). Before the questionnaire's release, a pilot study will be conducted. This signifies that a pilot study according to In (2017:601), should be conducted on a smaller scale and is important for improving the efficiency and quality of the survey tool.

3.6 Sampling technique

According to Pascoe (2019:135), quantitative research takes a representative sample. Furthermore, Pascoe (2019:135) declares that a representative sample reflects the characteristics of the overall population. Most of the research is conducted on purposive samples. A purposive sample is intended to define the purpose of this relevant study (Cameron 2018). Therefore, the study adopted the purposive sample. However, Willbroad Sihela & Nkengbeza (2020:17) describe the sample as a slice of the target group that should be carefully chosen to represent that population. The author further notes that, if sampling is selected, the researcher must decide how and who will be included in the survey and when sampling studies will start, or one or more statistical hypotheses will be evaluated.

A sample is a reasonable selection of a subset of the target audience from the overall population (Willbroad, Sihela & Nkengbeza, 2020:17). The sample for this study was selected using a purposive sampling method and includes 117 administrators and lecturers who will be among the people who form the target groups in the study. The study participants were chosen from each target group, where a minimum sample was

recommended (Mkhabele, 2018). Thus, according to Dladla (2020:75), purposive sampling is frequently employed in qualitative research and the researcher chooses the participants and study locations because they have a clear understanding of the study's main phenomenon and the research problem. According to a hypergeometric sample size statistical calculation (for a population less than 200), a population of 168 at a 95% confidence level and precision of 5% will result in a sample size of 117 as illustrated below (Dladla, 2020:75):

$$n = \frac{\mathrm{N}Z^2pq}{E^2(N-1)+Z^2pq}$$

$$= \frac{(168)(1.96^2)(0.5\mathrm{x}0.5)}{0.05^2(168-1)+1.96^2(0.5x0.5)}$$

$$= \frac{(168)(3.8416)(0.25)}{0.0025(167)+3.8416(0.25)}$$

$$= \frac{161.3472}{0.417+0.9604}$$

$$\boldsymbol{Sample\ size = 117.138}$$

$$Hence\ \ Sample\ Size\ of\ 117\ is\ acceptable.$$

$$n = 70\ \%\ of\ the\ total\ population$$

Where:

n is the required sample size.

N is the population size.

p and q are the population proportions. (If these are unknown, they are each set to 0.5).

z is the value that specifies the desired level of confidence for the confidence interval when data is analysed. Typical levels of confidence for surveys are 95%, in which case z is set to 1.96.

E sets the accuracy of the sample proportions. With an accuracy of plus or minus 5%, then E is set to 0.05.

3.7 Data analysis

Data analysed in this study was applied in accordance with Wiid and Diggines (2015:184). Statistical Package for Social Sciences (SPSS) Version 26 was used to read and convert raw data (from Excel format). In the statistical package, a database was created and data cleaning and verification will be performed. Then, the research tool was validated. After that, inferential statistics will be calculated. The Chi-square tests were used in this study's

method to determine percentages by age group and race. The exploratory factor analysis (EFA) was performed using principal component analysis to extract the factors followed by Varimax rotation: Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) criterion and Bartlett's test of sphericity. EFA is a statistical method for condensing data to a more manageable set of summary variables and for investigating the theoretical framework of the phenomenon. It is employed to determine the connection between the respondent and the variable. To make the factor extracts clearly associated with one another and to ensure that the variables are separated, the factor matrix's column is simplified using VARIMAX. A correlation matrix observed is compared to the identity matrix in Bartlett's test of sphericity. It determines whether certain variables that can be summed up with some factors are redundant. The KMO test evaluates the suitability of data for factor analysis. The test assesses the appropriateness of sampling for both the entire model and each variable. The statistic represents the percentage of variance among variables that could be considered common variance. Data is better suited for factor analysis when the proportion is lower. One-way analysis ANOVA of variance test was performed to compare the age group, race and highest qualifications for all continuous variables. To ascertain whether there is statistical support that the associated population means are statistically significantly different, one-way ANOVA ("analysis of variance") compares the means of two or more independent groups. Fisher's exact test was used for a comparison of ethical leadership and project success by demographic variables. An analytical tool for contingency tables is Fischer's exact test, which measures statistical significance.

The exploratory data analysis for this investigation is a confirmatory factor analysis (CFA) and was performed. The viability of data reduction was examined using the Varimax rotation method of analysis. Finally, the Levene's test for homogeneity of variances was used to evaluate whether the variance in scores is the same for each of the four independent groups. The data was analysed using inferential techniques in addition to interpretations and conclusions. Data analysis, converting raw data into knowledge and communicating research findings in the form of basic descriptive statistics and graphical representations, such as pie charts, will be the responsibility of the researcher (Davis, 2019:75). These figures and representations will provide significant insights into this study.

3.8 Data collection

This study will adopt an explanatory and descriptive quantitative research approach. An approach that occurs concurrently or sequentially is useful for gathering data (Cameron 2018). However, in a sequential approach, such as in the explanatory, exploratory and embedded designs, the quantitative (or qualitative) data is collected first, and the results inform the second form of data collection in quantitative or qualitative (Cameron, 2018). For practical reasons, in-person interviews will make up a sizeable portion of the data collection process. The primary sources used in this study, which included interviewing and observation, were used to generate the data for this study.

Records, documents and earlier research are examples of secondary sources (Dladla, 2020:81). Furthermore, qualitative researchers have various methods at their disposal for obtaining information directly from the participants. The strategy and techniques employed to collect data that address the research questions are referred to as data generation (Dladla, 2020:84).

3.9 Ethical considerations

The ethics committee of Cape Peninsula University of Technology (CPUT) approved the research proposal and the research tool.

3.9.1 Maintenance of objectivity

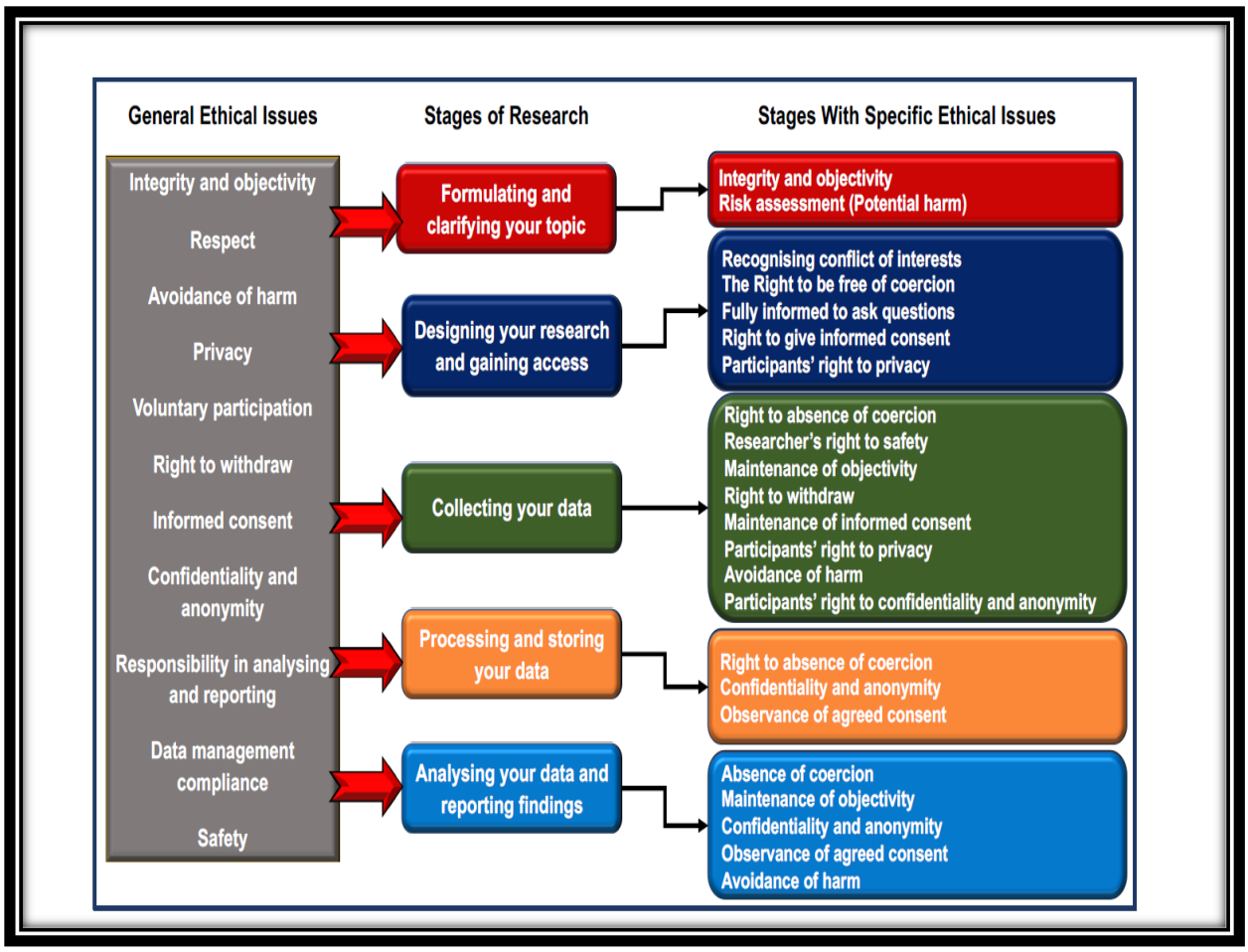

Figure 3-1: General ethical issues, stages of research and stages with specific ethical issues.

Source: Saunders, Lewis and Thornhill (2019:264).

3.9.1.1 Participants' right

Without trying to persuade the participants to change their minds, the researcher informs them that they can withdraw at any time (Gaudet & Robert, 2018:130). Participation will therefore be voluntary, which is a component of autonomy (Nardi, 2018:42).

3.9.1.2 Informed consent

Participants received sufficient information to enable them to decide whether to participate in the study, which is a fundamental principle of social research ethics (Patten & Newhart, 2018:35). The researcher secured informed consent from the participants by obtaining an introduction page of the survey. Participants must read it and agree with the content to continue with the completion of the questionnaire.

3.9.1.3 Confidentiality and anonymity

The researcher guaranteed the confidentiality of all participants through the concept of non-maleficence (Nardi, 2018:38). In this study, no participant's particulars will be identified or revealed.

CHAPTER 4: DATA ANALYSIS AND INTERPRETATION OF THE RESULTS

4.1 Introduction

In this chapter, the analysis is presented in a table and graphical display. This chapter's objective is to evaluate and explain the findings from the literature review and the self-administered questionnaires. The aim of the survey was to assess factors contributing to project success. Therefore, the Statistical Package for the Social Science (SPSS), version 27.0, was used for analyses. This chapter presents descriptive statistics to assess the proportions of sample demographic variables and statements related to ethical leadership and project success.

The descriptives are depicted in tables and graphical displays. Chi-square tests were used for the age group and race to assess percentages and significant differences in respondents' personal evaluation of ethical leadership and perceptions of project success. The questions/items on two scales were added for each scale and are presented as continuous variables. Additionally, the reliability of the two scales was assessed using Cronbach alpha coefficients.

The exploratory factor analysis (EFA) was performed using principal component analysis to extract the factors followed by Varimax rotation. The number of factors to be retained was guided by three decision rules: Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) criterion and Bartlett's test of sphericity. Only factors with eigenvalues more than 1 were retained for further investigation. Continuous variables were also created for each factor. One-way analysis of variance test was performed to compare the age group, race and highest qualifications for all continuous variables. Some tables were excluded from this study (for Chi-square tests) as they showed no statistical difference with other variables.

4.2 Section One: Demographics

The descriptive information of the respondents is discussed in this section. The information consists of items, such as the gender, age, race and highest qualifications.

4.2.1 Respondents' percentage by gender

A total of 117 respondents completed the self-administered questionnaire. In this section, the results are presented as percentages.

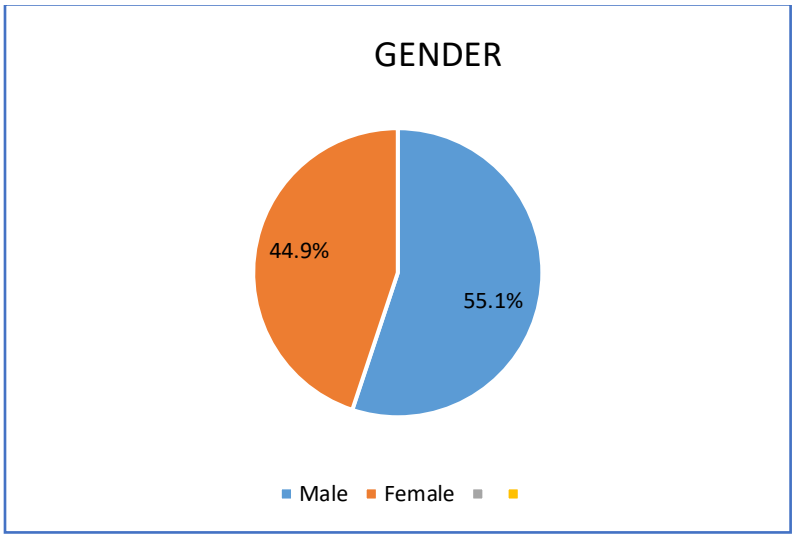

Figure 4-1: Respondents' gender.

Figure 4-1 illustrates the percentages of gender of the respondents. 117 questionnaires were distributed to the respondents of which 55.1% were males and 44.9% were females. The study indicated that females showed active interest in the study than males.

4.2.2 *Respondents' percentage by age groups*

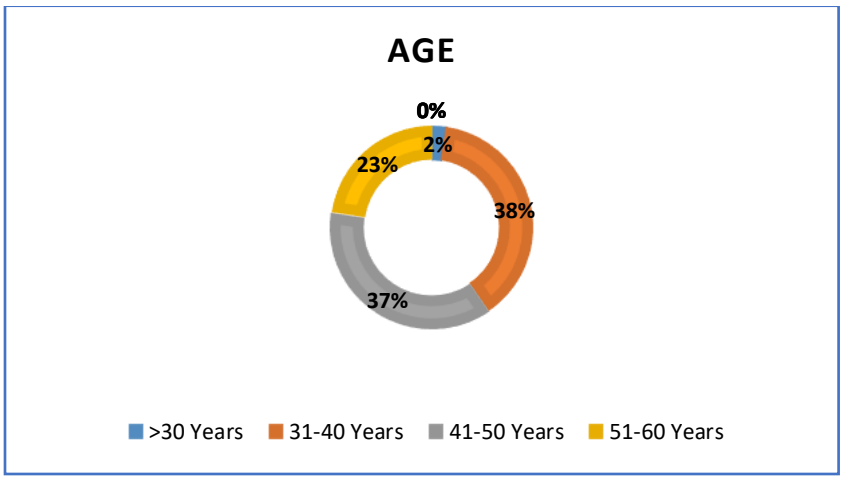

Figure 4-2: Respondents' age.

Figure 4-2. indicates that the largest group of respondents are aged between 31 and 40 years (38.1%), followed by those aged between 41 and 50 years (36.9%), between 51 and 60 years (22.6%) and those aged 30 years and below (2.4%). Thus, the figures indicate that most of the respondents aged between 31 and 40 were employed and form the majority than any age group in the faculty at the UoT.

4.2.3 *Respondents' percentages by race.*

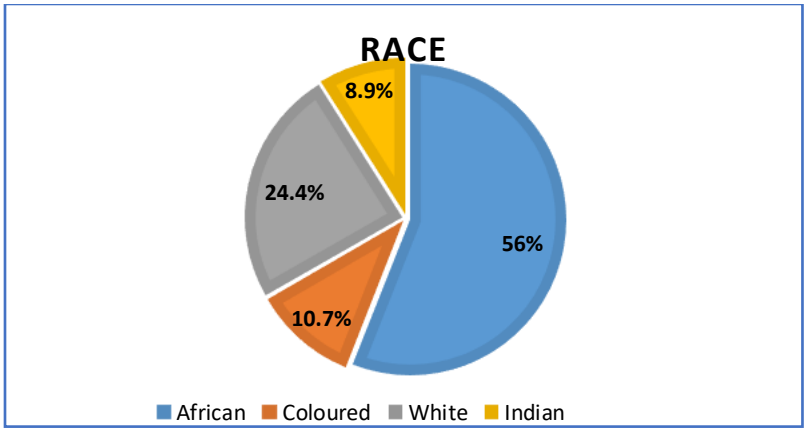

Figure 4-3: Respondents' race.

Figure 4-3 expresses the percentage of race and the study indicated that the respondents who are Black African (56.0%) had the highest proportion, followed by those who are

White (24.4%), Coloured (10.7%) and Indian (8.9%). This study also indicates that the Black South Africans were mostly employed as academic personnel in the faculty at the UoT.

4.2.4 Respondents' percentage by the highest qualifications

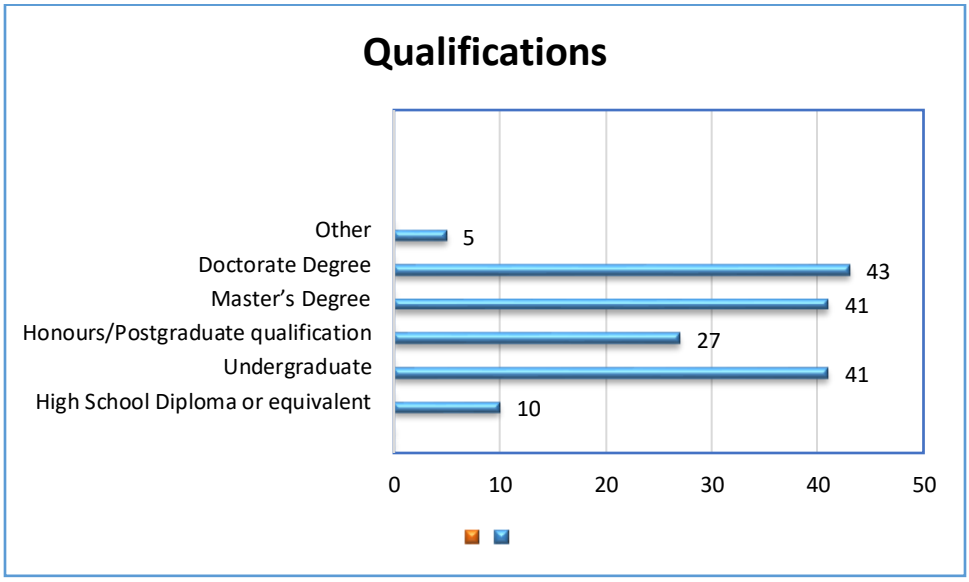

Figure 4-4: Respondents' academic qualifications.

Figure 4-4 illustrates the academic qualifications of the respondents. Most of the respondents in this study had a doctorate degree (25.7%), followed by those with master's degree (24.6%), undergraduate (24.6%) and honours/postgraduate qualification (16.2%). The study indicates that most respondents of the UoT had a doctoral degree, particularly in the faculty.

4.3 Section two

4.3.1 Ethical leadership

4.3.1.1 Frequency analysis

Under this section, frequency analysis for each item and the descriptive statistics per factor are presented. The frequency analysis provides a summary and description of the data. This section provides a summary of the responses by statements related to factors related to ethical leadership and project success. Variables that used a five-point Likert-

type scale were collapsed into three categories for interpretation. Therefore, ratings of 1 and 2 were merged into one category, 3 formed a category on its own and ratings of 4 and 5 were merged into the last category. The results are presented as percentages.

4.3.1.2 Respondents by personal evaluation of ethical leadership

The 117 questionnaires were distributed to the respondents and contained questions that were asked in this category and the responses thereof are illustrated in Figure 4-5

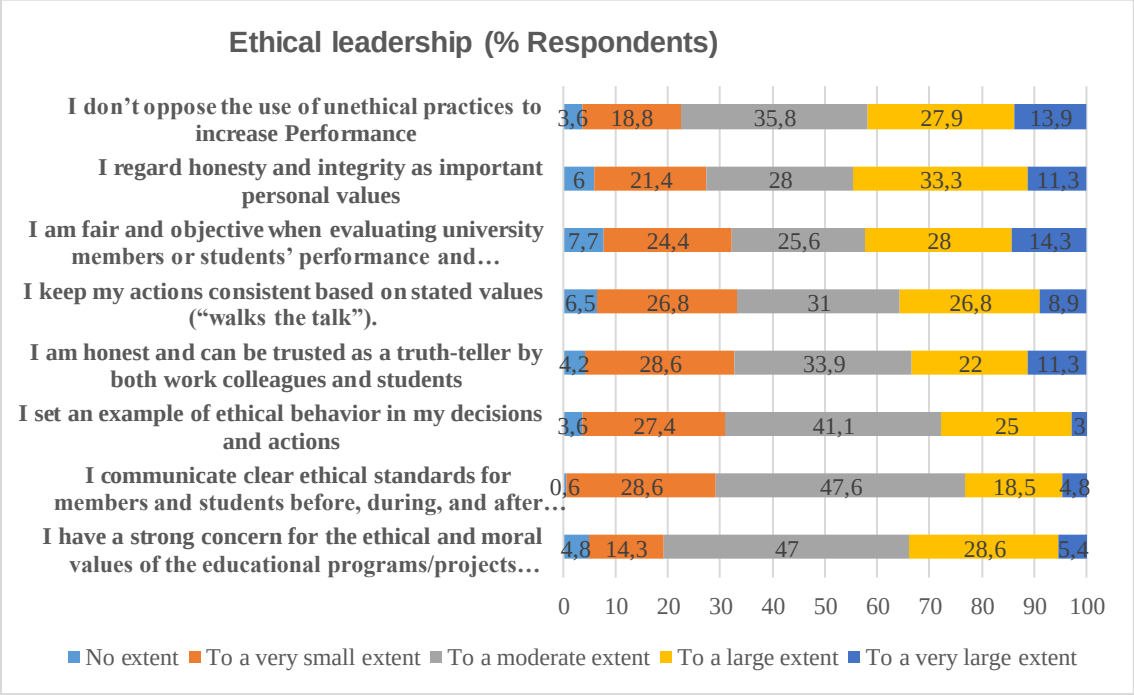

Figure 4-5: Ethical leadership.

Figure 4-5 illustrates that the largest percentage of respondents agreed to a large and very large extent that they regard honesty and integrity as important personal values (44.6%), they are fair and objective when evaluating university members or students' performance and providing rewards (42.3%), they do not oppose the use of unethical practices to increase performance (41.8%) and they keep their actions consistent based on stated values ("walks the talk") (35.7%). However, the largest percentage of respondents agreed to a moderate extent that they communicate clear ethical standards for members and students before, during and after project implementations (47.6%), they have a strong concern for the ethical and moral values of the educational

programmes/projects being implemented at the college (47%), they set an example of ethical behaviour in their decisions and actions (41.1%) and they are honest and can be trusted as a truth-teller by both work colleagues and students (33.9%).

The study had discovered that the ethical leadership variables were important variables of leaders' ethics and therefore (44.6%), of the respondents anticipated that their leaders should display the honesty and integrity as the values of the leadership style (Laissez-faire Leadership).

4.4 Section three

4.4.1 Project success

4.4.1.1 Respondents by perceptions of project success

The questions asked the respondents in this category and the responses thereof are illustrated in Figure 4-6.

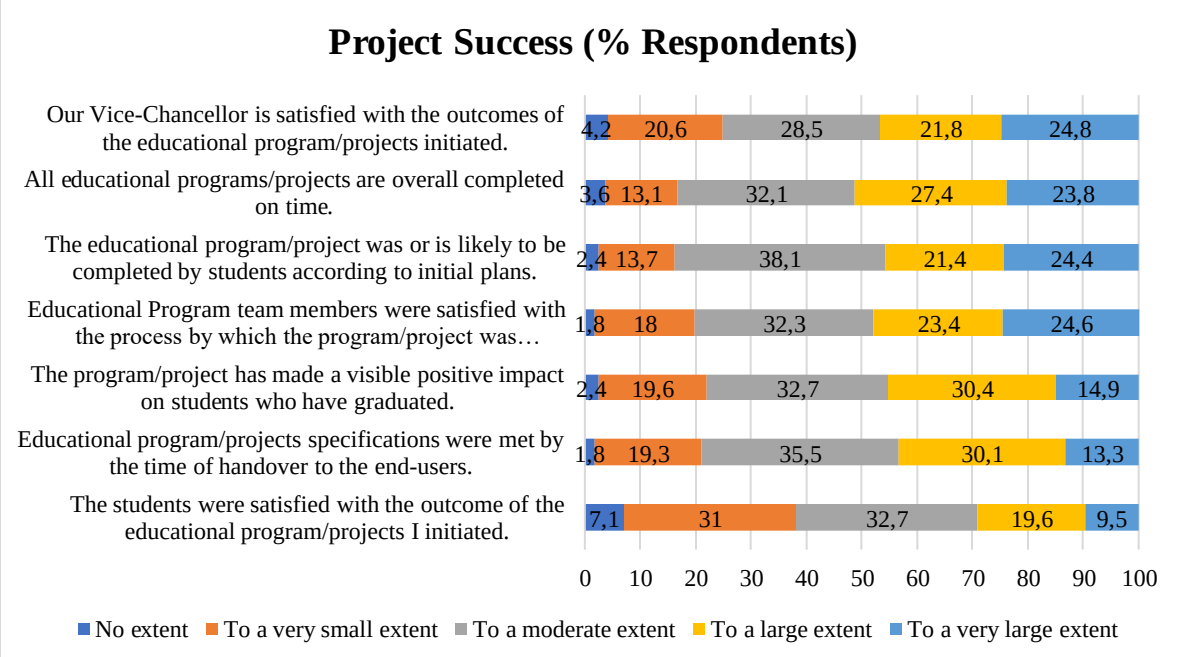

Figure 4-6: Perceptions of project success.

Figure 4-6 shows that the highest percentage of respondents agreed that all educational programmes/projects are overall completed on time (51.2%). Educational programme team members were satisfied with the process by which the programme/project was implemented. 48%, indicated that the faculty is satisfied with the outcomes of the educational programmes/projects being initiated. 46.6%, indicated that the educational programme/project are likely to be completed by students according to initial plans (45.8%). Furthermore, 45.3% of the programme/project has made a noticeable positive impact on students who have graduated. The largest percentage of respondents agreed to a moderate extent that educational programmes/projects specifications were met by the time of handover to the end-users (35.5%). Lastly, the respondents had no and small extent agreement that the students were satisfied with the outcome of the educational programmes/projects they initiated (38.1%).

The study reveals that all educational programmes/projects were completed on time and that the faculty was satisfied with the outcomes of the educational programmes/projects initiated. Thus, the students are likely to graduate on time. However, ethical leadership has effects on the university's educational entrepreneurship projects.

4.5 Comparisons of ethical leadership by demographic variables

In this section, the ethical leadership comparisons of all respondents are summarised. In Table 4.1, the ethical leadership comparison by age group is illustrated, followed by race categories in Table 4.2. The tables for the gender, highest education and ethical leadership were excluded from this study as they showed no statistical difference.

Table 4-1: Ethical leadership by age group (row %)

Ethical leadership	No.	Age group	No/ Very small extent	Moderate extent	Large/ Very large extent	Fisher's exact test (p-value)
	4	>30 years	50.0%	0%	50.0%	**0.002**

I have a strong concern for the ethical and moral values of the educational programmes/projects being implemented at the college.	64	31-40 years	9.4%	46.9%	43.8%	
	62	41-50 years	16.1%	58.1%	25.8%	
	38	51-60 years	36.8%	34.2%	28.9%	
I communicate clear ethical standards for members and students before, during and after project implementations.	4	>30 years	50.0%	25.0%	25.0%	0.683
	64	31-40 years	28.1%	42.2%	29.7%	
	62	41-50 years	29.0%	51.6%	19.4%	
	38	51-60 years	28.9%	52.6%	18.4%	
I set an example of ethical behaviour in my decisions and actions.	4	>30 years	25.0%	75.0%		0.220
	64	31-40 years	21.9%	46.9%	31.3%	
	62	41-50 years	38.7%	38.7%	22.6%	
	38	51-60 years	34.2%	31.6%	34.2%	
I am honest and can be trusted as a truth-teller by both work colleagues and students.	4	>30 years	50.0%	25.0%	25.0%	0.695
	64	31-40 years	26.6%	42.2%	31.3%	
	62	41-50 years	37.1%	29.0%	33.9%	

	38	51-60 years	34.2%	28.9%	36.8%	
I keep my actions consistent based on stated values (“walks the talk”).	4	>30 years	25.0%	50.0%	25.0%	0.853
	64	31-40 years	39.1%	29.7%	31.3%	
	62	41-50 years	32.3%	30.6%	37.1%	
	38	51-60 years	26.3%	31.6%	42.1%	
I am fair and objective when evaluating university members or students’ performance and providing rewards.	4	>30 years	25.0%	25.0%	50.0%	**0.009**
	64	31-40 years	43.8%	28.1%	28.1%	
	62	41-50 years	32.3%	17.7%	50.0%	
	38	51-60 years	13.2%	34.2%	52.6%	
I regard honesty and integrity as important personal values.	4	>30 years	25.0%	25.0%	50.0%	**0.013**
	64	31-40 years	35.9%	35.9%	28.1%	
	62	41-50 years	27.4%	19.4%	53.2%	
	38	51-60 years	13.2%	28.9%	57.9%	
	4	>30 years	0%	25.0%	75.0%	0.167

I do not oppose the use of unethical practices to increase performance.	64	31-40 years	27.0%	34.9%	38.1%	
	62	41-50 years	27.9%	31.1%	41.0%	
	38	51-60 years	8.1%	45.9%	45.9%	

As illustrated in Table 4.1, respondents who are aged 30 years and younger (50%) were more likely to agree to a strong concern for the ethical and moral values of the educational programmes/projects being implemented at the UoT than those who are aged between 31 and 40 years (43.8%), 51 – 60 years (28.9%) and 41 – 50 years (25.8%). Significantly, more respondents aged between 51 and 60 years (52.6%) agreed that they are fair and objective when evaluating university members or students' performance and provide rewards than those at the aged 30 years and younger (50%), between 41 and 50 years (50%) and 31 – 40 years (28.1%). Furthermore, a significantly higher number of respondents aged between 51 – 60 years (57.9%) were more likely to agree that they do not oppose the use of unethical practices to increase performance compared to those aged between 41 and 50 years (53.2%), 30 years and younger (50%) and between 31 and 40 years (28.1%). The study findings show that no statistical differences were observed between the age group and other ethical leadership variables. However, ethical leadership impacts the university's educational entrepreneurship projects. The gender, highest education and ethical leadership in this study showed no statistical difference.

Table 4-2: Ethical leadership by race (row %)

Ethical leadership	No.	Race	No/ Very small/ extent	Moderate extent	Large/ Very large extent	Fisher's exact test (p-value)

I have a strong concern for the ethical and moral values of the educational programmes/projects being implemented at the college.	94 18 41 15	African/Black Coloured White Indian	23.4% 27.8% 9.8% 6.7%	45.7% 50.0% 46.3% 53.3%	30.9% 22.2% 43.9% 40.0%	0.297
I communicate clear ethical standards for members and students before, during and after project implementations.	94 18 41 15	African/Black Coloured White Indian	34.0% 44.4% 9.8% 33.3%	45.7% 50.0% 56.1% 33.3%	20.2% 5.6% 34.1% 33.3%	**0.012**
I set an example of ethical behaviour in my decisions and actions.	94 18 41 15	African/Black Coloured White Indian	35.1% 16.7% 29.3% 26.7%	35.1% 66.7% 41.5% 46.7%	29.8% 16.7% 29.3% 26.7%	0.411
I am honest and can be trusted as a truth-teller by both work colleagues and students.	94 18 41 15	African/Black Coloured White Indian	33.0% 33.3% 29.3% 40.0%	38.3% 22.2% 31.7% 26.7%	28.7% 44.4% 39.0% 33.3%	0.734
I keep my actions consistent based on stated values (“walks the talk”).	94 18 41 15	African/Black Coloured White Indian	36.2% 22.2% 26.8% 46.7%	29.8% 27.8% 29.3% 46.7%	34.0% 50.0% 43.9% 6.7%	0.135
	94	African/Black	30.9%	22.3%	46.8%	0.143

I am fair and objective when evaluating university members or students' performance and providing rewards.	18	Coloured	33.3%	38.9%	27.8%	
	41	White	29.3%	22.0%	48.8%	
	15	Indian	46.7%	40.0%	13.3%	
I regard honesty and integrity as important personal values.	94	African/Black	25.5%	23.4%	51.1%	0.347
	18	Coloured	22.2%	33.3%	44.4%	
	41	White	29.3%	31.7%	39.0%	
	15	Indian	40.0%	40.0%	20.0%	
I do not oppose the use of unethical practices to increase performance.	94	African/Black	23.7%	30.1%	46.2%	0.600
	18	Coloured	11.8%	47.1%	41.2%	
	41	White	24.4%	39.0%	36.6%	
	15	Indian	21.4%	50.0%	28.6%	

Table 4.2 illustrates that the respondents who are White (56.1%) were significantly more likely to agree to a moderate extent that they communicate clear ethical standards for members and students before, during and after project implementations compared to those who are Coloured (50%), Black African (45.7%) and Indian (33.3%).

The study found that the communication channel was a challenge in the implementation of projects/programmes at the UoT. Thus, there are no significant differences between race and the other ethical leadership variables.

4.6 Comparisons of project success by demographic variables

In this section, the project success comparisons of all respondents are summarised. In Table 5.3, the project success comparison by age group is illustrated. The tables for the gender, race, highest education and project success were excluded from this study as they showed no statistical difference.

Table 4-3: Project success by age group (row %)

Project Success	No.	Age group	No/ Very small/ extent	Moderate extent	Large/ Very large extent	Fisher's exact test (p-v
The students were satisfied with the outcome of the educational programmes/projects I initiated.	4	>30 years	25.0%	25.0%	50.0%	**0.057**
	64	31-40 years	23.4%	42.2%	34.4%	
	62	41-50 years	48.4%	25.8%	25.8%	
	38	51-60 years	47.4%	28.9%	23.7%	
Educational programmes/projects specifications were met by the time of handover to the end-users.	4	>30 years	50.0%		50.0%	0.265
	64	31-40 years	14.1%	37.5%	48.4%	
	62	41-50 years	26.2%	31.1%	42.6%	
	38	51-60 years	21.6%	43.2%	35.1%	
The programme/project has made a visible positive impact on the students who have graduated.	4	>30 years	25.0%	50.0%	25.0%	0.380
	64	31-40 years	14.1%	34.4%	51.6%	
	62	41-50 years	27.4%	27.4%	45.2%	
	38	51-60 years	26.3%	36.8%	36.8%	

Educational programme team members were satisfied with the process by which the programme/project was implemented.	4	>30 years	50.0%		50.0%	0.310
	64	31-40 years	15.6%	40.6%	43.8%	
	62	41-50 years	24.2%	29.0%	46.8%	
	38	51-60 years	16.2%	27.0%	56.8%	
The educational programme/project was or is likely to be completed by students according to initial plans.	4	>30 years	25.0%		75.0%	0.236
	64	31-40 years	10.9%	48.4%	40.6%	
	62	41-50 years	19.4%	30.6%	50.0%	
	38	51-60 years	18.4%	36.8%	44.7%	
All educational programmes/projects are overall completed on time.	4	>30 years	25.0%	25.0%	50.0%	0.088
	64	31-40 years	17.2%	45.3%	37.5%	
	62	41-50 years	17.7%	24.2%	58.1%	
	38	51-60 years	13.2%	23.7%	63.2%	
Our vice-chancellor is satisfied with the outcomes of the	4	>30 years	25.0%	25.0%	50.0%	0.949
	64	31-40 years	27.0%	30.2%	42.9%	

educational programmes/projects initiated.	62	41-50 years	23.0%	31.1%	45.9%	
	38	51-60 years	24.3%	21.6%	54.1%	

Table 4.3 shows that marginal significant differences between the age group and statements such as “the students were satisfied with the outcome of the educational programmes/projects I initiated.” Respondents who are aged 30 years and younger (50%) were more likely to agree with the statement to a large and very large extent than those who are aged between 31 and 40 **years (34.4%), 41 – 50 years (25.8%), and 51 – 60 years (23.7%). The study draws a con**clusion that there are no significant differences between the age group and other project success variables. The gender, race, highest education and project success in this study showed no statistical difference.

4.7 Exploratory factor analysis

Principal component analysis was used to evaluate whether data reduction is possible and to determine if composite variables could be used to represent the statements about ethical leadership and project success. Each subsection was analysed separately. Principal component analysis was used as an extraction method with Varimax rotation was conducted to determine the dimensionality of each subsection. Components with eigenvalues above 1 (Kaizer criterion) were accepted. Cronbach alpha coefficient was used to determine the internal consistency (reliability) of each identified factor with a threshold stated in the literature as 0.5 (acceptable); 0.6 (satisfactory for exploratory research) and 0.7 for the previously used instruments (George & Mallery, 2003).

Table 4-4: Summary of the EFA

Factor	KMO & Barlett’s test (sig. value)	% Variance	Factor loadings	Cronbach’s Alpha

		explained				
Ethical leadership	0.672 p<0.001	76.7%	Factor 1	Factor 2	Factor 3	0.743
I have a strong concern for the ethical and moral values of the educational programmes/projects being implemented at the college.					0.855	
I communicate clear ethical standards for members and students before, during and after project implementations.					0.853	
I set an example of ethical behaviour in my decisions and actions.				0.780		
I am honest and can be trusted as a truth-teller by both work colleagues and students.				0.897		
I keep my actions consistent based on stated values (“walks the talk”).				0.732		
I am fair and objective when evaluating university members or students’ performance and providing rewards.			0.781			
I regard honesty and integrity as important personal values.			0.934			
I do not oppose the use of unethical practices to increase performance.			0.836			

Project Success	0.704 p<0.001	56.1%	Factor 1	Factor 2		0.702
The students were satisfied with the outcome of the educational programme/projects I initiated.				0.652		
Educational programmes/projects specifications were met by the time of handover to the end-users.				0.829		
The programme/project has made a visible positive impact on students who have graduated.				0.610		
Educational programme team members were satisfied with the process by which the programme/project was implemented.			0.607			
The educational programme/project was or is likely to be completed by students according to initial plans.			0.736			
All educational programmes/projects are overall completed on time.			0.842			
Our vice-chancellor is satisfied with the outcomes of the educational programmes/projects initiated.			0.769			

To verify that the dataset is suitable for factor analysis, we checked the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) value (which should be 0.6 or above) and

Bartlett's test of sphericity value (should be significant - 0.05 or smaller). In our analysis, the KMO value was 0.672 for ethical leadership and 0.704 for project success, respectively, which exceeded the recommended threshold of 0.6 (Kaiser 1970, 1974) and Bartlett's test of sphericity (Bartlett, 1954) were statistically significant ($p<0.001$) for all items in all two areas, indicating that factor analysis was appropriate.

Thus, Table 4.4 shows the split into three factors were extracted for ethical leadership and two of the two factors were extracted for project success.

4.7.1 The three factors were extracted for ethical leadership

The ethical leadership components accounted for 76.7% of the total variance in the original variables.

1) The first factor F1 indicates a high correlation between the following variables. The variables were used to create the "Ethical leadership F1" variable. Table 5.4 indicates a statistically significant high relationship between *I am fair and objective when evaluating university members or students' performance and providing rewards;" "I regard honesty and integrity as important personal values;" and "I do not oppose the use of unethical practices to increase performance."*
2) The second factor F2 illustrates a positive correlation between the variables: "*I set an example of ethical behaviour in my decisions and actions"; "I am honest and can be trusted as a truth-teller by both work colleagues and students"; and "I keep my actions consistent based on stated values ("walks the talk")*". The variables were used to create the "Ethical leadership F2" variable.
3) The third factor F3 shows that variables such as "I have a strong concern for the ethical and moral values of the educational programmes/projects being implemented at the college"; and "I communicate clear ethical standards for members and students before, during and after project implementations" are highly correlated. The variables were used to create the "Ethical leadership F3" variable.

Thus, the results indicate that the there is a statistically significant relationship at the 76.7% level of significance. The result reveals that there is a high correlation between the variables, while 0.672 for ethical leadership and the $p<0.001$.

4.7.2 The two factors were extracted for project success

Moreover, the components accounted for 56.1% of the total variance in the original variables.

1) The first factor F1 shows a high correlation between the following variables: “Educational programme team members were satisfied with the process by which the programme/project was implemented”; “The educational programme/project was or is likely to be completed by students according to initial plans”; “All educational programmes/projects are overall completed on time”; and “Our faculty is satisfied with the outcomes of the educational programmes/projects initiated”. The variables were used to create “Project success F1” variable.
2) The second factor F2 illustrates a positive correlation between the variables: “The students were satisfied with the outcome of the educational programmes/projects I initiated”; “Educational programmes/projects specifications were met by the time of handover to the end-users”; and “The programme/project has made a visible positive impact on students who have graduated”. The variables were used to create “Project success F2” variable.

Thus, there is a statistically significant relationship at the 56.1% level of significance of the total variance. While at the value of 0.704 for project success and the $p<0.001$.

4.7.3 Findings of the study

The results show that there is a high positive correlation between ethical leadership at a value of 0.672 and with the $p<0.001$ and project success at the value of 0.704 and the $p<0.001$, respectively, which exceeded the recommended threshold of 0.6 This relationship between the ethical leadership and project success, was investigated using Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) value (which should be 0.6 or above) and Bartlett’s test of sphericity value (should be significant - 0.05 or smaller). The study findings indicate that programme/project has made a noticeable positive impact on students who have graduate due to the programme/project completed on time in the faculty of management science at the UoT.

4.8 Descriptive statistics of continuous variables

The descriptive statistics for the seven continuous variables are provided in Table 4.5. All continuous variables have a skewness and kurtosis value between -2 and +2; therefore, they can be assumed to be normally distributed.

Table 4-5: Descriptive statistics of continuous variables

	N	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
Ethical leadership	165	14.00	39.00	25.0182	4.83442	0.422	0.446
Project success	162	10.00	35.00	23.8457	4.47987	-0.396	0.269
Ethical leadership F1	165	3.00	15.00	9.7394	2.84540	-0.139	-0.541
Ethical leadership F2	168	3.00	15.00	9.0893	2.53321	0.051	-0.159
Ethical leadership F3	168	2.00	10.00	6.1369	1.50419	0.245	0.335
Project success F1	164	4.00	20.00	14.0915	3.33197	-0.337	0.115
Project success F2	166	3.00	15.00	9.6687	2.26003	-0.110	-0.192

4.9 One-way analysis of variance (ANOVA) comparing demographics

The one-way analysis of variance (ANOVA) is used to evaluate whether there are significant differences in the mean scores on the dependent variables (continuous variables) across the demographic variables. The one-way analysis of variance (ANOVA),

comparing age group (four groups) for created continuous variables, are summarised in Table 4.6.

Table 4-6: One-way ANOVA comparing age groups

	Variance source	Sum of squares *ss*	*Degrees of freedom df*	Mean square *ms*	f-statistic	p-value
Ethical leadership	between	66.91	3	22.30	0.953	0.416
	within	3766.04	161	23.39	----	----
	total	3832.95	164	----	----	----
Project success	between	4.29	3	1.43	0.070	0.976
	within	3226.85	158	20.42	----	----
	total	3231.14	161	----	----	----
Ethical leadership f1	between	82.02	3	27.34	3.533	**0.016**
	within	1245.78	161	7.74	----	----
	total	1327.79	164	----	----	----
Ethical leadership f2	between	5.48	3	1.83	0.281	0.839
	within	1066.18	164	6.50	----	----
	total	1071.66	167	----	----	----
Ethical leadership f3	between	13.33	3	4.45	2.000	0.116
	within	364.52	164	2.22	----	----

	total	377.85	167	----	----	----
Project success f1	between	25.61	3	8.54	0.766	0.515
	within	1784.02	160	11.15	----	----
	total	1809.63	163	----	----	----
Project success f2	between	32.75	3	10.92	2.184	0.092
	within	810.02	162	5.00	----	----
	total	842.78	165	----	----	----

Table 4.6 shows that there is a significant difference between the means on ethical leadership factor 1 for the four independent groups (age group). However, the age group did not differ by ethical leadership, project success, ethical leadership factor 2, ethical leadership factor 3, project success factor 1 and project success factor 2. One-way ANOVA is an omnibus test statistic. Thus, ANOVA does not tell which specific groups were different from each other on ethical leadership factor 1. However, this can be found in the multiple comparisons table that contains the results of the Tukey post hoc test (see Table 4.7).

Table 4-7: Ethical leadership factor 1 results using Tukey-Kramer method

		95% Confidence interval		
Pairs *I, J*	**Mean difference (I-J)**	**Lower limit**	**Upper limit**	**p-value**
>30 years, 31-40 years	1.266	-2.46	4.99	0.814
>30 years, 41-50 years	0.430	-3.30	4.16	0.991
>30 years, 51-60 years	-0.588	-4.39	3.21	0.978

31-40 years, 41-50 years	-0.836	-2.13	0.46	0.342
31-40 years, 51-60 years	-1.854*	-3.35	-0.36	**0.008**
41-50 years, 51-60 years	-1.018	-2.53	0.49	0.298

The Levene's test for homogeneity of variances was used to evaluate whether the variance in scores is the same for each of the four independent groups. All significance values for Levene's test were greater than 0.05, which means that the assumptions of homogeneity of variance were not violated.

The result indicates that there is ethical leadership factor 1 showed a statistically significant difference between the groups as determined by one-way ANOVA ($F(3,161) = 3.533$, $p = 0.016$). Moreover, a Tukey post hoc test on ethical leadership factor 1 shows the mean score. Thus, the study reveals that the mean score for people aged 31-40 years (Mean = 8.98, SD = 2.62) was significantly different from those who are aged 51-60 years (Mean = 10.84, SD = 2.49). This indicated that the faculty of management sciences had the youngest academic staff among those aged 31 to 40. A conclusion was drawn that there was no statistically significant difference between the other groups.

The one-way analysis of variance (ANOVA), comparing race (four groups) for created continuous variables, are summarised in Table 4.8.

Table 4-8: One-way ANOVA comparing race

	Variance source	**Sum of squares *SS***	***Degrees of freedom df***	**Mean square *MS***	**F-statistic**	**p-value**

Ethical leadership	Between	88.89	3	29.63	1.274	0.285
	Within	3744.05	161	23.26	----	----
	Total	3832.95	164	----	----	----
Project success	Between	11.00	3	3.67	0.180	0.910
	Within	3220.14	158	20.38	----	----
	Total	3231.14	161	----	----	----
Ethical leadership F1	Between	21.72	3	7.24	0.892	0.447
	Within	1306.08	161	8.11	----	----
	Total	1327.79	164	----	----	----
Ethical leadership F2	Between	29.84	3	9.95	1.566	0.200
	Within	1041.82	164	6.35	----	----
	Total	1071.66	167	----	----	----
Ethical leadership F3	Between	25.78	3	8.59	4.003	**0.009**
	Within	352.07	164	2.15	----	----
	Total	377.85	167	----	----	----
Project success F1	Between	14.47	3	4.82	0.430	0.732
	Within	1795.16	160	11.22	----	----

	Total	1809.63	163	----	----	----
Project success F2	Between	13.50	3	4.50	0.879	0.453
	Within	829.28	162	5.12	----	----
	Total	842.78	165	----	----	----

Table 4.8 illustrates that there is a significant difference between the means on ethical leadership factor 3 for the four independent groups (race). However, race did not differ by ethical leadership, project success, ethical leadership factor 1, ethical leadership factor 2, project success factor 1 and project success factor 2.

Table 4.9 shows the multiple comparisons table, which contains the results of the Tukey post hoc test.

Table 4-9: Ethical leadership factor 1 results using Tukey-Kramer method

		95% Confidence interval		
Pairs *I, J*	**Mean difference (I-J)**	**Lower limit**	**Upper limit**	**p-value**
African, Coloured	0.391	-0.59	1.37	0.727
African, White	-0.809*	-1.52	-0.10	**0.019**
African, Indian	-0.386	-1.44	0.67	0.779
Coloured, White	-1.200*	-2.28	-0.13	**0.022**
Coloured, Indian	-0.778	-2.11	0.55	0.429
White, Indian	0.423	-0.73	1.57	0.774

The Levene's test for homogeneity of variances was used to evaluate whether the variance in scores is the same for each of the four independent groups. All significant values for Levene's test were greater than 0.05, which means that the assumptions of homogeneity of variance were not violated.

The results indicate that the ethical leadership factor 3 showed a statistically significant difference between the groups as determined by one-way ANOVA ($F(3,164) = 4.003$, $p = 0.009$). A Tukey post hoc test on ethical leadership factor 3 shows the mean scores. The mean of Black Africans with (Mean = 5.95, and SD = 1.48) and Coloureds with (Mean = 5.56, and SD = 1.25) were significantly different from the mean score of Whites with (Mean = 6.76, and SD = 1.46). The Whites and Black South African were the most employed academics in the faculty at the UoT. Thus, the study draws the conclusion that there is no statistically significant difference between the other groups.

The one-way analysis of variance (ANOVA), comparing race (four groups) for created continuous variables, are summarised in Table 4.10.

Table 4-10: One-way ANOVA comparing the highest qualifications

	Variance source	**Sum of squares *SS***	***Degrees of freedom df***	**Mean square *MS***	**F-statistic**	**p-value**
Ethical leadership	Between	113.94	5	22.79	0.972	0.437
	Within	3702.76	158	23.44	----	----
	Total	3816.70	163	----	----	----
Project success	Between	105.83	5	21.17	1.058	0.386
	Within	3101.69	155	20.01	----	----

	Total	3207.52	160	----	----	----
Ethical leadership F1	Between	36.57	5	7.31	0.895	0.486
	Within	1290.68	158	8.17	----	----
	Total	1327.24	163	----	----	----
Ethical leadership F2	Between	29.78	5	5.96	0.929	0.464
	Within	1032.28	161	6.41	----	----
	Total	1062.06	166	----	----	----
Ethical leadership F3	Between	19.08	5	3.82	1.712	0.135
	Within	358.76	161	2.23	----	----
	Total	377.83	166	----	----	----
Project success F1	Between	129.13	5	25.83	2.468	**0.035**
	Within	1643.17	157	10.47	----	----
	Total	1772.29	162	----	----	----
Project success F2	Between	54.11	5	10.82	2.187	0.058
	Within	786.88	159	4.95	----	----
	Total	840.99	164	----	----	----

Table 4.10 illustrates that there is a significant difference between the means on project success factor 1 for the six independent groups (the highest qualifications). However, the highest qualifications did not differ by ethical leadership, project success, ethical leadership factor 1, ethical leadership factor 2, ethical leadership factor 3 and project success factor 2.

Table 4.11 shows the multiple comparisons table, which contains the results of the Tukey post hoc test.

Table 4-11: Project success factor 1 results using Tukey-Kramer method

		95% Confidence interval		
Pairs *I, J*	**Mean difference (I-J)**	**Lower limit**	**Upper limit**	**p-value**
High school, Undergraduate	1.129	-2.16	4.42	0.921
High school, Honours	0.633	-2.82	4.09	0.995
High school, Master's	0.221	-3.10	3.54	1.000
High school, Doctorate	-1.200	-4.48	2.08	0.899
High school, Other	1.300	-3.81	6.41	0.977
Undergraduate, Honours	-0.496	-2.81	1.82	0.990
Undergraduate, Master's	-0.908	-3.01	1.19	0.813
Undergraduate, Doctorate	-2.329*	-4.38	-0.28	**0.016**
Undergraduate, Other	0.171	-4.25	4.59	1.000

Honours, Master's	-0.412	-2.76	1.94	0.996
Honours, Doctorate	-1.833	-4.14	0.47	0.201
Honours, Other	0.667	-3.88	5.21	0.998
Master's, Doctorate	-1.421	-3.51	0.67	0.369
Master's, Other	1.079	-3.36	5.52	0.982
Doctorate, Other	2.500	-1.92	6.92	0.578

The Levene's test for homogeneity of variances was used to evaluate whether the variance in scores is the same for each of the six independent groups. All significant values for Levene's test were greater than 0.05, which means that the assumptions of homogeneity of variance were not violated.

Thus, the findings indicate that the project success factor 1 shows a statistically significant difference between groups as determined by one-way ANOVA ($F(5,157) = 2.468$, $p = 0.035$). A Tukey post hoc test on project success factor 1 shows the mean scores. The mean score for undergraduates with (Mean = 13.17, and SD = 3.35) shows that there was significantly different from the mean score for those who possessed the doctoral degree qualifications with (Mean = 15.50, and SD = 3.13). The results showed that there was no statistically significant difference between the other groups.

4.10 Relationship between continuous variables

The relationship was determined using the Pearson correlation coefficient. The value of the coefficient indicates the direction and strength between the continuous variables and is shown in Table 4.12.

Table 4-12: Relationship between continuous variables

	Ethical leadership	Project success	Ethical leadership F1	Ethical leadership F2	Ethical leadership F3	Project success F1	Project success F2
Ethical leadership	**1**	**0.037**	**0.767****	**0.807****	**0.406****	**0.065**	**-0.047**
Project success		**1**	**-0.073**	**0.076**	**0.131**	**0.879****	**0.697****
Ethical leadership F1			**1**	**0.362****	**-0.037**	**-0.025**	**-0.117**
Ethical leadership F2				**1**	**0.228****	**0.099**	**-0.010**
Ethical leadership F3					**1**	**0.089**	**0.093**
Project success F1						**1**	**0.270****
Project success F2							**1**

Table 4.12 shows that a strong, statistically significant positive relationship exists between project success and project success factor 1 (0.879) and factor 2 (0.697); between ethical leadership and ethical leadership factor 1 (0.767) and factor 2 (0.807) at the 1% level of significance. A moderate, statistically significant positive relationship exists between ethical leadership and ethical leadership factor 3 (0.406) at the 1% level of significance.

Moreover, a weak, statistically significant positive relationship exists between ethical leadership factors 1 and 2 (0.362), between ethical leadership factors 2 and 3 (0.228) and between project success factors 1 and 2 (0.270) at the 5% level of significance.

The study indicates that there is no statistically significant relationship between ethical leadership and project success and between factors for ethical leadership and for project success. Ethical leadership does not influence the project success.

4.11 Conclusion

This chapter has provided the in-depth findings of the study, which were displayed in the form of analysis with a table and graphical display. This chapter also provided an interpretation of the data obtained from the literature review and self-administered questionnaires.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The primary objective of this study was to determine how ethical leadership affected the success of projects in educational entrepreneurial enterprises at a South African University of Technology. Whether or not the primary objective was accomplished and the secondary objectives were fulfilled is discussed in this chapter's conclusion. The specific recommendations and conclusions from the literature review and research findings are covered in detail in Chapter 6. Based on the literature review and fresh insights gained from the participants' responses, the recommendations are made.

5.2 Research objectives

5.2.1 Primary objective

This study's main research question is addressed as its research objective, namely, *the influence of ethical leadership on the accomplishment of projects in educational entrepreneurial ventures at a South African University of Technology.*

5.2.2 Secondary research objectives

The study identifies any statistically significant differences in gender, age, qualifications and race in the influence of ethical leadership on the success of the university's educational entrepreneurship projects. Additionally, what are the statistically significant differences in the challenges educational leaders encounter when putting ethical leadership practices into practice when working on educational entrepreneurship projects at the university? Finally, what recommendations can be made to address issues that prevent university-based educational entrepreneurship projects from adhering to ethical leadership practices?

5.3 Conclusions of the study

Because of the inferential statistics discussed in Chapter 4, the following conclusion can be drawn.

5.3.1 Significant findings on employee demographics

5.3.1.1 Gender

The biographical details of the employees are the main subject of this section. According to the findings regarding gender, men made up most of the respondents (55.1%) while women made up most of the sample group (44.6%). Additionally, it became clear that men were more concerned with honesty and integrity as leadership values than their female counterparts.

5.3.1.2 Qualification

According to the study's findings regarding educational attainment, most respondents (25.7%) had master's degrees, while 24.6% had doctorates. Undergraduate (24.6%) and honours/postgraduate (16.2%) degrees were held only by a small percentage of respondents. Most UoT respondents, particularly in the faculty had doctoral degrees, according to the study. Herrera-Idárraga, López-Bazo and Motellón (2015:1685) support the idea that employees should have the education necessary to perform their jobs.

5.3.1.3 Age

Age-wise, respondents between the ages of 31 and 40 made up the largest age group (38.1%), followed by those between the ages of 41 and 50 (36.9%), between the ages of 51 and 60 (22.6%) and respondents under the age of 30 (2.4%). According to the study, the respondents were primarily academics between the ages of 31 and 40 and they were more strongly influenced by the laissez-faire leadership ethical leadership style than any other age group. According to the study, a similar percentage of respondents (47.6%) support the moral and ethical principles embodied in the educational projects and programmes being conducted by the UoT. Employees who are subject-matter experts should be led using this management style (Al-Malki & Juan, 2018). Projects promoting educational entrepreneurship at the university are impacted by ethical leadership.

5.3.1.4 Findings on responses to ethical leadership

All respondents in the sample group had high levels of honesty and integrity as the values of the leadership style, as evidenced by their percentage scores and the sample group's overall ethical leadership level (44.6%) (Laissez-faire Leadership).

5.3.2 The findings on responses regarding educational attainment

Every respondent in the sample group had a percentage score level of 51.2% on average. Most respondents reported higher percentage levels, as indicated by the percentage scores for each respondent. This demonstrates that, according to all respondents (51.2%), all educational projects and programmes were completed on time. Furthermore, 35.5% of respondents, the highest percentage, concurred that the requirements of educational projects/programmes had been met at the time of handover to the end users. Finally, the respondents concur that students enjoyed the positive interactions and were satisfied with the outcomes of the educational projects and programmes they initiated (38.1%). According to Kadushin and Harkness (2002:18–19), having faith in a supervisor entails having faith in other people to act in their best interests.

5.3.2.1 Findings on responses regarding project success

The study shows that the faculty's management was pleased with the accomplishments of the projects and programmes that were started in the educational arena. Therefore, it is likely that the students will graduate on time. The findings of this study are similar to a study by Sharaf, El-Gharbawy and Ragheb (2018:1), which also highlights the value of entrepreneurial education in preparing students for management in the modern workplace and living environment. Projects promoting educational entrepreneurship at the university are impacted by ethical leadership.

5.3.3 Correlation

5.3.3.1 Findings on correlations

Table 4.12 illustrates the division of the factors into three for ethical leadership and two for project success.

5.3.3.1.1 Three factors were extracted for ethical leadership:

1) The elements of ethical leadership were responsible for 76.7% of the variance in the initial variables. The first factor F1 indicates a high correlation between variables in the “Ethical leadership F1”. The variables were used to create the “Ethical leadership F1”.

2) The second factor F2 illustrates a positive correlation between variables in the “Ethical leadership F2”. The variables were used to create the “Ethical leadership F2” variable.
3) The third factor F3 shows variables in “Ethical leadership F3. The variables were used to create the “Ethical leadership F3” variable.

As a result, the findings showed a 76.7% level of significance. The result shows that there is a high correlation between the variables, with a 0.672 correlation coefficient for ethical leadership and a p-value of $p<0.001$.

5.3.3.1.2 Two factors were extracted for project success:

1) Additionally, the components were responsible for 56.1% of the variance in the initial variables. The first factor F1 shows a high correlation between the variables in the first factor F1. The variables were used to create “Project success F1” variable.
2) The second factor F2 illustrates a positive correlation between the variables in Project success F2. The variables were used to create “Project success F2” variable.

As a result, there is a statistically significant relationship at the total variance's 56.1% level of significance. The project success value is 0.704 and the p-value is $p<0.001$.

5.3.3.2 Findings of the study

The findings indicate a high positive correlation between ethical leadership, with a value of 0.672 and a p-value of $p<0.001$ and project success with a value of 0.704 and a p-value of $p<0.001$, respectively, exceeding the recommended threshold of 0.6. Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) value (which should be 0.6 or above) and Bartlett's test of sphericity value (which should be 0.6 or above) were used to investigate the relationship between ethical leadership and project success (should be Significant - 0.05 or smaller).The results of the study show that the programme or project at the UoT has had a distinctly positive impact on students who have graduated because of the programme or project being completed on time.

5.4 Positive findings on the ethical leadership

5.4.1 Educational programme

The study finding shows that all respondents aged 30 years and younger (50%) were more concern on the statement *I have a strong concern for the ethical and moral values of the educational programmes/projects being implemented at the UoT*. Most respondents (43.8%), those between 51 and 60 years old (28.9%), and those between 41 and 50 years old (25.8%) concur that leaders should demonstrate ethical and moral values when implementing educational programmes and projects at the UoT. Leaders at the university should use employee feedback to enhance working conditions and develop.

5.4.2 Ethical leadership

Moreover, all respondents aged between 51 and 60 years (52.6%) agreed with the statement *I am fair and objective when evaluating university members or students' performance and providing rewards*. They value fairness and objectivity more than those who are aged between 31 and 40 (28.1%), between the ages of 41 and 50 (50%) and those who are 30 years and younger (50%). Therefore, the projects promoting educational entrepreneurship at the university are impacted by ethical leadership. In this study, there was no statistically significant difference in gender, highest education, or

Furthermore, a higher number of respondents aged between 51 – 60 years (57.9%) were more likely to agree with the statement *I regard honesty and integrity as important personal values*. Compared to those aged between 41 and 50 years (53.2%), 30 years and younger (50%) and 31 and 40 years (28.1%), they do not oppose the use of unethical practices to increase performance.

5.4.3 Project success

Respondents who are aged 30 years and younger (50%) were more likely to agree with the statement *the students were satisfied with the outcome of the educational programmes/projects* than those who are aged between 31 and 40 years (34.4%), 41 – 50 years (25.8%), and 51 – 60 years (23.7%)*. As a result, there are peripheral differences in age groups and claims like "the students were satisfied with the outcome of the educational programmes/projects I initiated".* In terms of business ethics, social responsibility and community involvement, higher education institutions' consistent

presence fosters community respect and trust for students, employees, residents and other stakeholders (Simmons, 2020).

5.5 Negative findings on educational programme

5.5.1 Ethical leadership and project success

The study further found that White at (56.1%) indicated that the respondents agree that the on the statement *I communicate clear ethical standards for members and students before, during and after project implementations.* In contrast to those who are Coloured (50%), Black African (45.7%) and Indian (33.3%), they concur that communication channels between students and university staff were a problem before, during and after project implementations.

5.6 Other findings

5.6.1 Comparing demographics

5.6.1.1 Findings

To determine whether there are statistically significant differences between the mean scores on the dependent variables (continuous variables) across the demographic variables, the one-way analysis of variance (ANOVA) is used. According to the findings of the one-way ANOVA ($F(3,161) = 3.533$, $p = 0.016$), factor 1 of ethical leadership is associated with a statistically significant difference between the groups. Additionally, the study's mean score (Mean = 8.98, SD = 2.62) shows that people in the 31–40 age range differed from those in the 51–60 age range (Mean = 10.84, SD = 2.49) in several ways. This indicates that the faculty employed most academic staff members who were younger, between the ages of 31 and 40.

5.6.1.2 Findings

Table 4.8 provides a summary of the one-way analysis of variance (ANOVA) that compared race (four groups) for newly created continuous variables. According to the one-way ANOVA results, the ethical leadership factor 3 demonstrated a statistically significant difference between the groups ($F(3,164) = 4.003$, $p = 0.009$). There was a significant difference between the mean scores of Black Africans (Mean = 5.95, SD =

1.48), Coloureds (Mean = 5.56, SD = 1.25) and Whites (Mean = 6.76, SD = 1.46). The faculty at UoT employed the most academics who were White and Black South Africans.

5.6.1.3 Findings

The multiple comparisons table from the Tukey post hoc test is displayed in Table 4.10 along with its findings. According to one-way ANOVA results ($F(5,157) = 2.468$, $p = 0.035$), the study's findings show that project success factor 1 exhibits a statistically significant difference between groups. The mean score for undergraduates with (Mean = 13.17, and SD = 3.35) demonstrates a significant difference from the mean score for those who have doctoral degree qualifications with (Mean = 15.50, and SD = 3.13). This indicates that the faculty at the UoT employs the most highly educated staff members, who are academic staff with doctoral degrees.

5.6.2 Relationship between continuous variables

5.6.2.1 Findings

The Pearson correlation coefficient was used to establish the relationship. Table 4.12 displays the coefficient value, which denotes the strength and direction of the relationship between the continuous variables. As a result, Table 4.12 demonstrates a strong, positive relationship between project success and project success factors 1 and 2 (0.879 and 0.697, respectively) as well as between ethical leadership and ethical leadership factors 1 and 2 (0.767 and 0.807, respectively) at the 1% level of significance. At the 1% level of significance, the statistically significant results showed that ethical leadership and ethical leadership factor 3 (0.406) have a positive relationship. Additionally, the results demonstrate that, at the 5% level of significance, there is a weak, statistically significant positive relationship between the ethical leadership factors 1 and 2 (0.362), between the ethical leadership factors 2 and 3 (0.228), and between the ethical leadership factors 1 and 2 (0270). According to the study, neither the success of a project nor the factors associated with successful project management have a statistically significant relationship. The success of the project is not impacted by ethical leadership.

5.7 Contribution of the study

- Previous research on the relationship between ethical leadership and project success rates has partially corroborated the theory in this study.
- The study shows that the management of the faculty was pleased with the accomplishment of the projects/programmes that were initiated. As a result, the students are likely to graduate on time.
- The study concluded that the programme or project at the UoT's faculty had a measurable positive impact on the students who graduated because of the programme's or project's prompt completion.
- The study found that UoT's communication channels posed a challenge for project and programme implementation.
- Coordinate practices and line managers, two-way communication relationships between supervisors and subordinates and teamwork among academic staff and students. Supervisory style elements in the relationship itself could be positive or negative and affect UoT staff satisfaction or dissatisfaction at work.

This demonstrates unequivocally that traditional in-class teaching methods are still in use at South African universities. Furthermore, this study is important in that it identifies the key issues relating to the levels of *the impact of ethical leadership in the accomplishment of projects in educational entrepreneurial ventures at a South African University of Technology* and suggests solutions regarding ethical leadership and project success issues to capitalise the efficiency of educational programme implementation in the future.

5.8 Limitations

This study had the following limitations:

- No studies in South Africa have analysed the *impact of ethical leadership on the accomplishment of projects in educational entrepreneurial ventures at a South African University of Technology.*
- Therefore, South African literature was available on the *Impact of Ethical Leadership on Employee Performance in the Hotel Industry in Bahrain: The Mediating Effect of Employee Voice (United Arab Emirates University),* ethical

approach to business Success, *The Effects of Entrepreneurship Education on Students' Entrepreneurial Intentions at a South African University of Technology* and limited information was available on this topic in general.

- The researcher found only two related study, which was conducted by Alyaa, Rabea, Hamad and Aldoseri (2020) which focused only on *The Impact of Ethical Leadership on Employee Performance in the Hotel Industry in Bahrain*, and *the effects of entrepreneurship education on students' entrepreneurial intentions at a South African University of technology* (Mahlaole & Malebana, 2021).

5.9 Suggested future research

The results of this study could be improved upon by future research that focuses on mixed methods design. As the current study only included UoT in Gauteng, the sample group could be expanded to include students and employees in managerial roles from a chain of UoT in other provinces. Future studies may address the issues that this study's respondents at the South African University raised.

5.10 Recommendations

For the UoT sector, particularly higher education institutions, the following suggestions are made:

- To prevent underperformance, all employees in the faculty should receive formal training and induction on how to "do the right thing the first time".
- The study discovered that a challenge in implementing projects and programmes at the UoT was the communication channel. Therefore, before, during and after project implementation, members and students should be made aware of the clear ethical standards.
- Align line managers' practices with current leadership relationships, such as two-way communication and create connections within the system to foster collaboration between academic staff and students.
- Recognise and address areas of weakness right away to avoid bad or unethical leadership behaviour becoming standard practice and causing employee and student dissatisfaction at the UoT.

- Reviewing leadership styles and relationships at work should always be considered because failing to do so could have unintended, counterproductive work behaviour as a result (that is, educational programmes that were implemented poorly and caused delays in students' graduation, particularly for registered programmes and projects).
- To enhance working conditions, university leaders should put in place, efficient employee feedback systems.

5.11 Conclusion

Exploring strategies for some UoT was the aim of this quantitative study. Participants in this study included UoT employees who worked in higher education institutions. One of the study's main findings is that the management of the faculty was pleased with the success of the projects and programmes it had started in the field of education. Thus, it is likely that the students will complete their degrees on time. It is recommended that university administrators implement effective employee feedback systems to improve working conditions. Furthermore, all faculty members should receive formal training and induction on how to "do the right thing the first time" to prevent underperformance.

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APPENDIX

ANNEXURE A: ETHICAL CLEARANCE

Cape Peninsula University of Technology

P.O. Box 1906 | Bellville 7535
Symphony Road Bellville 7535
South Africa
Tel: +27 21 4603291
Email: fbmsethics@cput.ac.za

Office of the Chairperson Research Ethics Committee	FACULTY: BUSINESS AND MANAGEMENT SCIENCES

The Faculty's Research Ethics Committee (FREC) on 3 May 2022, ethics APPROVAL was granted to Samkeziwe E Nkomzwayo (218300565) for a research activity at the Cape Peninsula University of Technology for M Tech: Bus Admin (Project Management).

Title of project:	The influence of ethical leadership on project success in educational entrepreneurial ventures at a South African University of Technology Researcher (s): Mr S. Fore

Decision: APPROVED

	16 May 2022
Signed: Chairperson: Research Ethics Committee	Date

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the CPUT Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study requires that the researcher stops the study and immediately informs the chairperson of the relevant Faculty Ethics Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines, and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, notably compliance with the Bill of Rights as provided for in the Constitution of the Republic of South Africa, 1996 (the Constitution) and where applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003 and/or other legislations that is relevant.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. No field work activities may continue after two (2) years for Masters and Doctorate research project from the date of issue of the Ethics Certificate. Submission of a completed research ethics progress report (REC 6) will constitute an application for renewal of Ethics Research Committee approval.

Clearance Certificate No | 2022 FBMSREC 021

ANNEXURE B: PERMISSION-GRANTING LETTER

Tshwane University of Technology

TUTEH

28 March 2022

GRANTING OF INSTITUTIONAL PERMISSION FOR RESEARCH

Dear Miss Samkeziwe Esther Nkomzwayo

I, Aaron Mogashoa at TSWANE UNIVERSITY OF TECHNOLOGY grant permission to collect data at this site for your research project entitled: *The influence of ethical leadership on project success in an educational entrepreneurial ventures at a South African university of Technology.*

I grant this permission as the authorized person to do so in this company and am aware of the following:

1. The study is conducted as a CPUT researcher and remains the property of CPUT;
2. You (can use), (not use) the name of the company in your research Project
3. All data and information collected will be solely in the procession of the researcher;
4. I will require feedback of the research;
5. The research may be published in the public domain under the supervision of the supervisor.

We empower people

I wish you the best and success in this research.

Kind Regards

AMogashoa

Director:TUTEH

ANNEXURE C: LANGUAGE EDIT LETTER

RUSINGA
EDITORS & TRANSLATORS
MAKING IT COUNT

9 September 2022

Our Ref.: Samkeziwe Esther Nkomzwayo

To whom it may concern

Re: Editing of master's dissertation

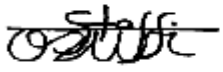
This serves to confirm that the dissertation submitted by Samkeziwe Esther Nkomzwayo in fulfilment of the requirements for the degree Master of Technology: Business Administration in Project Management in the Faculty of Business Management at the Cape Peninsula University of Technology, has been edited by Rusinga Editors and Translators. The title of the dissertation is: *The influence of ethical leadership on project success in educational entrepreneurial ventures at a South African University of Technology.*

Corrections have been suggested to the author, Samkeziwe Esther Nkomzwayo.

Rusinga Editors and Translators is a registered private company in Pretoria, South Africa, offering editing, translation, interpreting and transcription services. Its registration number is K2016/166298/07.

Please feel free to contact me for any further queries.

Yours faithfully,



Stafford Osuri Osuri

Director

Address: 210 Steve Biko Road
Muckleneuk, Pretoria, 0002
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Email: osuriosuri@gmail.com
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ANNEXURE D: QUESTIONNAIRE

Cape Peninsula University of Technology

Faculty of Business and Management Sciences
Ethics Informed Consent Form

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Category of Participants (tick as appropriate):

Staff/Workers	X	*Teachers*		*Parents*		*Lecturers*		*Students*	
Other (specify)									

You are kindly invited to participate in a research study being conducted by Samkeziwe Esther Nkomzwayo from the Cape Peninsula University of Technology. The findings of this study will contribute towards (tick as appropriate):

An undergraduate project		*A conference paper*	
An Honours project		*A published journal article*	
A master/doctoral thesis	X	*A published report*	

Selection criteria
You were selected as a possible participant in this study because you are:

(a) You are a staff member at Tshwane University of Technology

(b) _____

(c) etc

The information below gives details about the study to help you decide whether you would want to participate.

Title of the research: The influence of ethical leadership on project success in educational entrepreneurial ventures at a South African university of Technology

My name is Samkeziwe Esther Nkomzwayo. I am a student studying Masters in Project Management at the Cape Peninsula University of Technology doing research entitled: ***The influence of ethical leadership on project success in educational entrepreneurial ventures at a South African university of Technology***. Given the highlighted importance of ethical leadership to the success of educational entrepreneurial projects, there is an expectation of satisfaction of stakeholders especially those of large complex educational entrepreneurial projects, the proposed study could be meaningful in establishing whether ethical behaviour manifested in decision making and ethical leadership is influential on project success. The proposed study could also be beneficial to Universities, Colleges, project managers and Vice Chancellors in establishing the optimal control that results in improved EEP success, thereby responding to the call by investigate the form and nature of the relationship between project success dimensions and ethical leadership. This will enable me to fulfill the Master's Degree requirement. Having identified you as a key respondent may you please answer the questions by briefly ticking appropriately your response in the space provided? All information is

for academic purposes only. Confidentiality and anonymity are guaranteed. There will be no psychological or physical harm as a result of the study. There will be no mention of names in the presentation of results as results will be explored using surrogate names like 'respondent 1' For more information contact me on 082 052 4282.

Procedures (*self-administer questionnaire otherwise create your own*)
If you volunteer to participate in this study the following will be done:

1. Describe the main research procedures to you in advance, so that you are informed about what to expect;
2. Treat all interviewees with respect by arriving on time for all the interview schedules and well prepared;
3. Conduct an introduction with the interviewee to break the ice;
4. All the interviewees will be asked for permission to record the interviews and also take some notes where applicable;
5. In a case where there is no clarity, the interviewees will be allowed to ask for confirmation or clarity of words/sentences/phrases to ensure accuracy of the data collected;
6. Participants will be told that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs;
7. Participants will be given the option of omitting questions they do not want to answer or feel uncomfortable with;
8. Participants will be told that questions do not pose any realistic risk of distress or discomfort, either physically or psychologically, to them;
9. At the end of each interview all the interviewees will be thanked for their time and information provided for this study;
10. Participants will be debriefed at the end of their participation (i.e. give them a brief explanation of the study).

You are invited to contact the researchers should you have any questions about the research before or during the study. You will be free to withdraw your participation at any time without having to give a reason.

Kindly complete the table below before participating in the research.

Tick the appropriate column		
Statement	Yes	No
1. I understand the purpose of the research.	X	
2. I understand what the research requires of me.	X	
3. I volunteer to take part in the research.	X	
4. I know that I can withdraw at any time.	X	
5. I understand that there will not be any form of discrimination against me as a result of my participation or non-participation.	X	
6. Comment:		

Please sign the consent form. You will be given a copy of this form on request.

L.V. Labuza	
Signature of participant	Date 28 March 2022

Researchers

	Name:	Surname:	Contact details:
1.	Samkeziwe Esther	Nkomzwayo	082 052 4282 samkeziwen@gmail.com
2.			
3.			

Contact person: Samkeziwe Esther Nkomzwayo	
Contact number: 082 052 4282	Email: samkeziwen@gmail.com

SURVEY QUESTIONS

INSTRUCTIONS: For each question please put a tick in the appropriate box of your preferred answer. If your answer to a question is not in the options provided, write it in the space to the right of "Other *(Please specify)*". Please answer all questions.

SECTION ONE

Respondents Demographic Information

1.1. Age Group

< 20 Years		21 – 25 Years		26 -30 Years	
31 – 35 Years		36 – 40 Years		41 – 45 Years	
46 – 50 Years		51 – 55 Years		56 – 60 Years	
61 – 65 Years		66 – 70 Years		> 70 Years	

1.2. Gender

Female		Male	

1.3. Which population group do you identify yourself with?

African/ Black		Coloured		White		Indian	
Other (Specify)							

1.4. What is your highest academic qualification?

High School Diploma or equivalent		Undergraduate	
Honours/Postgraduate qualification		Master's Degree	
Doctorate Degree		Other (Specify)	

1.5. What is your current job title?

SECTION TWO

2. Personal evaluation of Ethical leadership

To what extent would you rate yourself on ethical leadership perspectives in educational programs that have been introduced at the university scale ranging from No extent = 1, To a very small extent =2, To a moderate extent =3, To a large extent =4, To a very large extent =5. (*Please simply put a tick in the box representing your preferred number. If you make a mistake, cancel the tick and choose another answer.).Try to be as honest as possible in evaluating your ethical leadership traits*						
2.1	I have a strong concern for the ethical and moral values of the educational programs/projects being implemented at the college	1	2	3	4	5
2.2	I communicate clear ethical standards for members and students before, during, and after project implementations	1	2	3	4	5
2.3	I set an example of ethical behavior in my decisions and actions	1	2	3	4	5
2.4	I am honest and can be trusted as a truth-teller by both work colleagues and students	1	2	3	4	5
2.5	I keep my actions consistent based on stated values ("walks the talk").	1	2	3	4	5
2.6	I am fair and objective when evaluating university members or students' performance and providing rewards.	1	2	3	4	5
2.7	I regard honesty and integrity as important personal values	1	2	3	4	5
2.8	I don't oppose the use of unethical practices to increase Performance	1	2	3	4	5

SECTION THREE

3. Perceptions of Project Success

To what extent would you perceive the Educational Entrepreneurship programs are a success based following statements as the main project success milestone on a scale ranging from No extent = 1, To a very small extent =2, To a moderate extent =3, To a large extent =4, To a very large extent =5. (*Please simply put a tick in the box representing your preferred number. If you make a mistake, cancel the tick and choose another answer.) Try to be as honest as possible in evaluating educational project success.*						
3.1	The students were satisfied with the outcome of the educational program/projects I initiated.	1	2	3	4	5
3.2	Educational program/projects specifications were met by the time of handover to the end-users.	1	2	3	4	5
3.3	The program/project has made a visible positive impact on students who have graduated.	1	2	3	4	5
3.4	Educational Program team members were satisfied with the process by which the program/project was implemented.	1	2	3	4	5
3.5	The educational program/project was or is likely to be completed by students according to initial plans.	1	2	3	4	5
3.6	All educational programs/projects are overall completed on time.	1	2	3	4	5
3.7	Our Vice-Chancellor is satisfied with the outcomes of the educational program/projects initiated.	1	2	3	4	5

Thank You

ANNEXURE E: TURNITIN SIMILARITY REPORT

The influence of ethical leadership on project success in educational entrepreneurial ventures at a South African University of Technology

ORIGINALITY REPORT

10%	8%	4%	5%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.hindawi.com Internet Source	1%
2	etd.cput.ac.za Internet Source	<1%
3	www.researchgate.net Internet Source	<1%
4	scholarworks.uaeu.ac.ae Internet Source	<1%
5	core.ac.uk Internet Source	<1%
6	www.tandfonline.com Internet Source	<1%
7	Submitted to Mancosa Student Paper	<1%
8	docplayer.net Internet Source	<1%

creativecommons.org